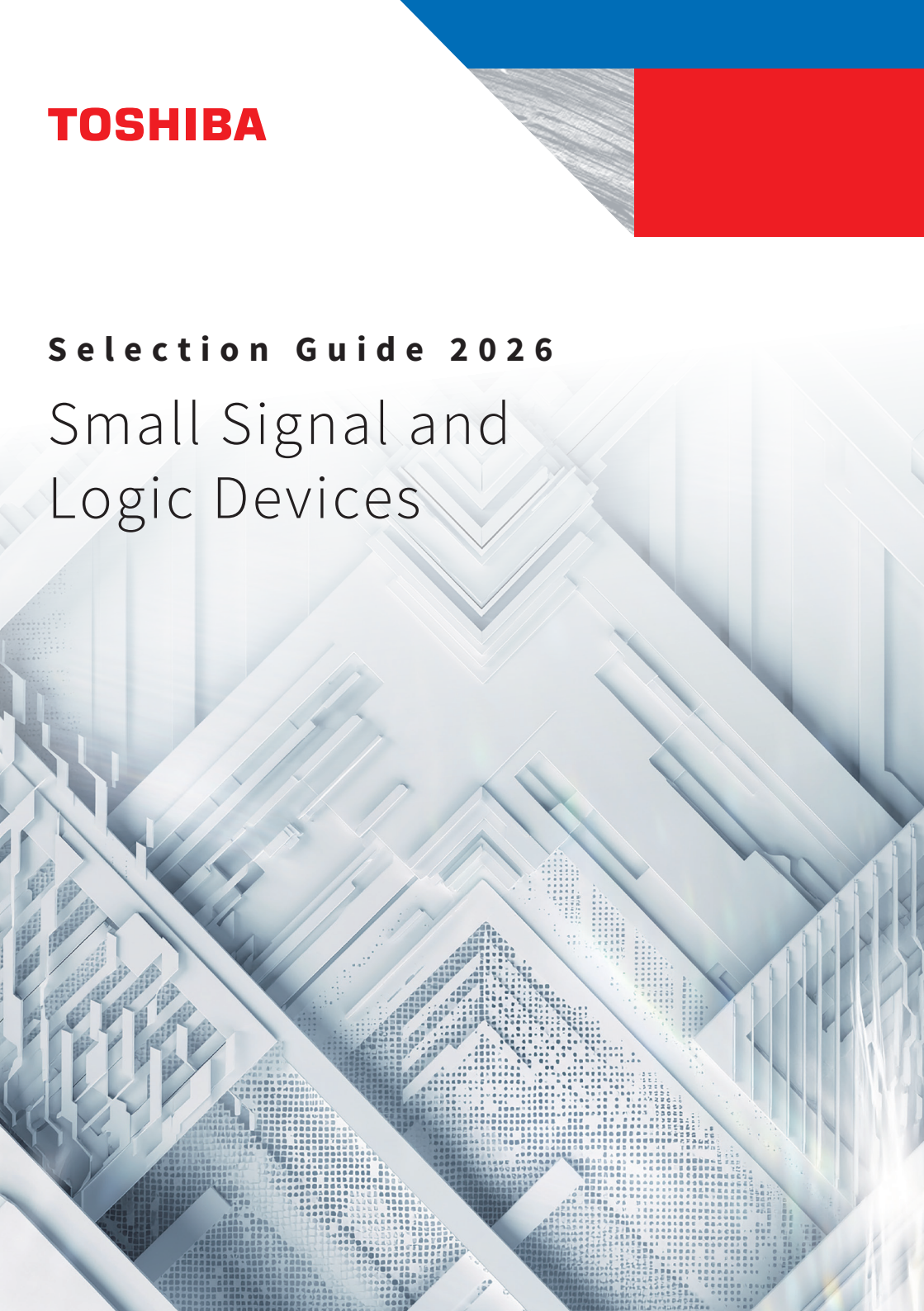
TOSHIBA

Selection Guide 2026

Small Signal and Logic Devices



Contents

1. MOSFETs

Over 500mA Series MOSFETs (Semi-Power Type)

Package Dimensions (unit: mm)

CST3C	CST3 (SOT-883)	VESM (SOT-723)	UFM (SOT-323F)	ES6 (SOT-563)	UF6 (SOT-363F)	WCSP6C
Bottom View	Bottom View					Bottom View
						
0.8 x 0.6	1.0 x 0.6	1.2 x 1.2	2.0 x 2.1	1.6 x 1.6	2.0 x 2.1	1.5 x 1.0

P-Channel Single MOSFETs

Package	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (mΩ)							Q_g typ. (nC)	C_{iss} typ. (pF)	Note
					V_{GS}= -1.2 V	V_{GS}= -1.5 V	V_{GS}= -1.8 V	V_{GS}= -2.5 V	V_{GS}= -4 V	V_{GS}= -4.5 V	V_{GS}= -10 V			
CST3C	SSM3J64CTC $	-12	-/+10	-1	11300	1310	890	560	-	370	-	-	50	
	SSM3J65CTC $	-20	-/+10	-0.7	11300	1550	1070	700	-	500	-	-	48	
CST3	SSM3J56ACT $	-20	-/+8	-1.4	4000	900	660	480	-	390	-	1.6	100	
	SSM3J76CT ☆ $	-20	-/+8	-1.4	4000	900	660	480	-	390	-	1.6	100	Low leakage current
	SSM3J65CT ☆ $	-20	-/+10	-0.7	11300	1550	1070	700	-	500	-	-	48	
VESM	SSM3J66MFV # $	-20	-8/+6	-0.8	4000	900	660	480	-	390	-	1.6	100	
	SSM3J56MFV $	-20	-/+8	-0.8	4000	900	660	480	-	390	-	1.6	100	
	SSM3J76MFV ☆ $	-20	-/+8	-0.8	4000	900	660	480	-	390	-	1.6	100	Low leakage current
WCSP6C	SSM6J771G $	-20	-/+12	-5	-	-	-	47.5	-	35	34.7 (@-8 V) 31 (@-8.5 V)	9.8	870	
ES6	SSM6J216FE $	-12	-/+8	-4.8	-	88.1	56	39.3	-	32	-	12.7	1040	
	SSM6J213FE $	-20	-/+8	-2.6	-	250	178	133	-	103	-	4.7	290	
	SSM6J215FE $	-20	-/+8	-3.4	-	154	104	79	-	59	-	10.4	630	
	SSM6J212FE $	-20	-/+8	-4	-	94	65.4	49	-	40.7	-	14.1	970	
	SSM6J207FE $	-30	-/+20	-1.4	-	-	-	-	491	-	251	-	137	
	SSM6J214FE $	-30	-/+12	-3.6	-	-	149.6	77.6	-	57	50	7.9	560	
UFM	SSM3J132TU $	-12	-/+6	-5.4	94	39	29	21	-	17	-	33	2700	
	SSM3J135TU $	-20	-/+8	-3	-	260	180	132	-	103	-	4.6	270	
	SSM3J145TU # $	-20	-8/+6	-3	-	260	180	132	-	103	-	4.6	270	
	SSM3J134TU $	-20	-/+8	-3.2	-	240	168	123	-	93	-	4.7	290	
	SSM3J144TU # $	-20	-8/+6	-3.2	-	240	168	123	-	93	-	4.7	290	
	SSM3J130TU $	-20	-/+8	-4.4	-	63.2	41.1	31	-	25.8	-	24.8	1800	
	SSM3J140TU # $	-20	-8/+6	-4.4	-	63.2	41.1	31	-	25.8	-	24.8	1800	
	SSM3J133TU $	-20	-/+8	-5.5	-	88.4	56	39.7	-	29.8	-	12.8	840	
	SSM3J143TU # $	-20	-8/+6	-5.5	-	88.4	56	39.7	-	29.8	-	12.8	840	
	SSM3J112TU $	-30	-/+20	-1.1	-	-	-	-	790	-	390	-	86	
	SSM3J118TU $	-30	-/+20	-1.4	-	-	-	-	480	-	240	-	137	
	SSM3J117TU $	-30	-/+20	-2	-	-	-	-	225	-	117	-	280	
UF6	SSM6J422TU # $	-20	-8/+6	-4	-	99.6	67.8	51.4	-	42.7	-	12.8	840	
	SSM6J412TU $	-20	-/+8	-4	-	99.6	67.8	51.4	-	42.7	-	12.8	840	
	SSM6J424TU $	-20	-8/+6	-6	-	54	36	26	-	22.5	-	23.1	1650	
	SSM6J414TU $	-20	-/+8	-6	-	54	36	26	-	22.5	-	23.1	1650	
	SSM6J402TU $	-30	-/+20	-2	-	-	-	-	225	-	117	5.3	280	
	SSM6J410TU $	-30	-/+20	-2.1	-	-	-	-	393	-	216	2.9	120	
	SSM6J401TU $	-30	-/+20	-2.5	-	-	-	-	145	-	73	16	730	

☆ New Products
AEC-Q101 qualified, $ With protection Zener diode between gate and source

Package Dimensions (unit: mm)

UDFN6B (SOT-1220)	DFN2020B (WF)	SOT-23F	S-Mini (SOT-346)
Bottom View	Bottom View		
			
2.0 x 2.0	2.0 x 2.0	2.9 x 2.4	2.9 x 2.5

P-Channel Single MOSFETs

Package	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (mΩ)							Q_g typ. (nC)	C_{iss} typ. (pF)	Note
					V_{GS}= -1.2 V	V_{GS}= -1.5 V	V_{GS}= -1.8 V	V_{GS}= -2.5 V	V_{GS}= -4 V	V_{GS}= -4.5 V	V_{GS}= -10 V			
UDFN6B	SSM6J512NU $	-12	-/+10	-10	-	-	40.1	25.7	20.5 (@-3.6 V)	18.7	16.2 (@-8 V)	19.5	1400	
	SSM6J505NU $	-12	-/+6	-12	61	30	21	16	-	12	-	37.6	2700	
	SSM6J511NU $	-12	-/+10	-14	-	-	19.2	13.5	11.5 (@-3.6 V)	10	9.1 (@-8 V)	47	3350	
	SSM6J503NU $	-20	-/+8	-6	-	89.6	57.9	41.7	-	32.4	-	12.8	840	
	SSM6J502NU $	-20	-/+8	-6	-	60.5	38.4	28.3	-	23.1	-	24.8	1800	
	SSM6J501NU $	-20	-/+8	-10	-	43	26.5	19	-	15.3	-	29.9	2600	
	SSM6J507NU $	-30	-25/+20	-10	-	-	-	-	32	28	20	13.6	1150	
DFN2020B (WF)	XSM6J372NW☆ # $	-30	-12/+6	-6	-	-	144	72	-	50	42	8.2	560	
	XSM6J374NW★ # $	-30	-20/+10	-4	-	-	-	-	136	105	71	5.9	280	
	XSM6J356NW★ # $	-60	-20/+10	-2	-	-	-	-	400	360	300	8.3	330	
	XSM6J351NW★ # $	-60	-20/+10	-4	-	-	-	-	184	164	134	15.1	660	
SOT-23F	SSM3J338R $	-12	-/+10	-6	-	-	45.3	27.9	21.9 (@-3.6 V)	20.2	17.6 (@-8 V)	19.5	1400	
	SSM3J327R $	-20	-/+8	-3.9	-	240	168	123	-	93	-	4.6	290	
	SSM3J377R # $	-20	-8/+6	-3.9	-	240	168	123	-	93	-	4.6	290	
	SSM3J331R $	-20	-/+8	-4	-	150	100	75	-	55	-	10.4	630	
	SSM3J371R # $	-20	-8/+6	-4	-	150	100	75	-	55	-	10.4	630	
	SSM3J328R $	-20	-/+8	-6	-	88.4	56	39.7	-	29.8	-	12.8	840	
	SSM3J378R # $	-20	-8/+6	-6	-	88.4	56	39.7	-	29.8	-	12.8	840	
	SSM3J355R $	-20	-/+10	-6	-	-	52.3	38.8	-	30.1	-	16.6	1030	
	SSM3J358R $	-20	-/+10	-6	-	-	49.3	32.8	27.7 (@-3.6 V)	25.3	22.1 (@-8 V)	38.5	1331	
	SSM3J334R $	-30	-/+20	-4	-	-	-	-	136	105	71	5.9	280	
	SSM3J374R # $	-30	-20/+10	-4	-	-	-	-	136	105	71	5.9	280	
	SSM3J340R $	-30	-25/+20	-4	-	-	-	-	86	73	45	6.2	492	
	SSM3J332R $	-30	-/+12	-6	-	-	144	72	-	50	42	8.2	560	
	SSM3J372R # $	-30	-12/+6	-6	-	-	144	72	-	50	42	8.2	560	
	SSM3J356R # $	-60	-20/+10	-2	-	-	-	-	400	360	300	8.3	330	
	SSM3J351R # $	-60	-20/+10	-3.5	-	-	-	-	184	164	134	15.1	660	
S-Mini	SSM3J325F $	-20	-/+8	-2	-	311	231	179	-	150	-	4.6	270	
	SSM3J375F # $	-20	-8/+6	-2	-	311	231	179	-	150	-	4.6	270	
	SSM3J352F $	-20	-/+12	-2	-	-	443	199	-	136	110	5.1	210	
	SSM3J353F $	-30	-25/+20	-2	-	-	-	-	274	232	150	3.4	159	

☆ New Products
AEC-Q101 qualified, $ With protection Zener diode between gate and source
★ Under Development (The specification is subject to change without notice.)

TSOP6F

2.9 x 2.8

P-Channel Single MOSFETs

Package	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (mΩ)							Q_g typ. (nC)	C_{iss} typ. (pF)	Note
					V_{GS} = -1.2 V	V_{GS} = -1.5 V	V_{GS} = -1.8 V	V_{GS} = -2.5 V	V_{GS} = -4 V	V_{GS} = -4.5 V	V_{GS} = -10 V			
TSOP6F	SSM6J801R $	-20	-8/+6	-6	-	88.4	56	39.7	-	32.5	-	12.8	840	
	XSM6J828R ★ # $	-20	-8/+8	-4	-	-	168	123	-	93	-	4.6	290	
	SSM6J825R $	-30	-20/+10	-4	-	-	-	-	86	73	45	6.2	492	
	XSM6J830R ★ # $	-30	-20/+10	-4	-	-	-	-	136	105	71	5.9	280	
	SSM6J808R	-40	-20/+10	-7	-	-	-	-	52	48	35	24.2	1020	
	XSM6J832R ★ # $	-60	-20/+10	-2	-	-	-	-	400	360	300	8.3	330	
	XSM6J831R ★ # $	-60	-20/+10	-4	-	-	-	-	184	164	134	15.1	660	

AEC-Q101 qualified, $ With protection Zener diode between gate and source
★ Under Development (The specification is subject to change without notice.)

Package Dimensions (unit: mm)

CST3 (SOT-883)	VESM (SOT-723)	SSM (SOT-416)	UFM (SOT-323F)	ES6 (SOT-563)	UF6 (SOT-363F)	WCSP6C
Bottom View 						Bottom View 
1.0 x 0.6	1.2 x 1.2	1.6 x 1.6	2.0 x 2.1	1.6 x 1.6	2.0 x 2.1	1.5 x 1.0

N-Channel Single MOSFETs

Package	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (mΩ)							Q_g typ. (nC)	C_{iss} typ. (pF)	Note
					V_{GS}= 1.2 V	V_{GS}= 1.5 V	V_{GS}= 1.8 V	V_{GS}= 2.5 V	V_{GS}= 4 V	V_{GS}= 4.5 V	V_{GS}= 10 V			
CST3	SSM3K56CT $	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	
	SSM3K56ACT $	20	+/-8	1.4	-	840	480	300	-	235	-	1	55	
	SSM3K76CT ☆ $	20	+/-8	1.4	-	840	480	300	-	235	-	1	55	Low leakage current
VESM	SSM3K36MFV $	20	+/-10	0.5	-	1520	1140	850	-	660	630 (@5 V)	1.23	46	
	SSM3K56MFV $	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	
	SSM3K76MFV ☆ $	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	Low leakage current
WCSP6C	SSM6K781G	12	+/-8	7	-	124	47.4	23.2	-	18	-	5.4	600	
SSM	SSM3K36FS $	20	+/-10	0.5	-	1520	1140	850	-	660	630 (@5 V)	1.23	46	
	SSM3K56FS $	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	
	SSM3K76FS ☆ $	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	Low leakage current
ES6	SSM6K217FE $	40	+/-12	1.8	-	-	400	248	218 (@3.6 V) 211 (@4.2 V)	208	195 (@8 V)	1.1	130	
UFM	SSM3K36TU $	20	+/-10	0.5	-	1520	1140	850	-	660	630 (@5 V)	1.23	46	
	SSM3K62TU # $	20	+/-8	0.8	432	139	89	68	-	57	-	2	177	
	SSM3K122TU $	20	+/-10	2	-	304	211	161	123	-	-	3.4	195	
	SSM3K121TU $	20	+/-10	3.2	-	140	93	63	48	-	-	5.9	400	
	SSM3K123TU $	20	+/-10	4.2	-	66	43	32	28	-	-	13.6	1010	
	SSM3K127TU $	30	+/-12	2	-	-	286	167	123	-	-	1.5	123	
	SSM3K116TU $	30	+/-12	2.2	-	-	-	135	-	100	-	-	245	
	SSM3K131TU	30	+/-20	6	-	-	-	-	-	41.5	27.6	10.1	450	
	SSM3H137TU $	34	+/-20	2	-	-	-	-	295	280	240	3	119	Built-in Active Clamp Zener
	SSM3K2615TU $	60	+/-20	2	-	-	-	580 (@3.3 V)	440	-	300	6	150	
	SSM3K341TU # $	60	+/-20	6	-	-	-	-	69	51	36	9.3	550	T_{ch} = 175 °C
	SSM3K361TU # $	100	+/-20	3.5	-	-	-	-	-	92	69	3.2	430	T_{ch} = 175 °C
UF6	SSM6K405TU $	20	+/-10	2	-	307	214	164	126	-	-	3.4	195	
	SSM6K404TU $	20	+/-10	3	-	147	100	70	55	-	-	5.9	400	
	SSM6K403TU $	20	+/-10	4.2	-	66	43	32	28	-	-	16.8	1050	
	SSM6K406TU $	30	+/-20	4.4	-	-	-	-	-	38.5	25	12.4	490	
	SSM6K407TU $	60	+/-20	2	-	-	-	-	440	-	300	6	150	

☆ New Products
AEC-Q101 qualified, $ With protection Zener diode between gate and source

UDFN6B (SOT-1220)	DFN2020B (WF)
Bottom View	Bottom View
	
2.0 x 2.0	2.0 x 2.0

N-Channel Single MOSFETs

Package	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (mΩ)							Q_g typ. (nC)	C_{iss} typ. (pF)	Note
					V_{GS}= 1.2 V	V_{GS}= 1.5 V	V_{GS}= 1.8 V	V_{GS}= 2.5 V	V_{GS}= 4 V	V_{GS}= 4.5 V	V_{GS}= 10 V			
UDFN6B	SSM6K518NU $	20	+/-8	6	-	108	74	45	-	33	-	3.6	410	
	SSM6K517NU $	30	+12/-8	6	-	-	82	53	-	39.1	-	3.2	310	
	SSM6K504NU $	30	+/-20	9	-	-	-	-	-	26	19.5	4.8	620	
	SSM6K513NU	30	+/-20	15	-	-	-	-	-	12	8.9	7.5	1130	
	SSM6K516NU $	30	+20/-12	6	-	-	-	-	-	64	46	2.5	280	
	SSM6K514NU	40	+/-20	12	-	-	-	-	-	17.3	11.6	7.5	1110	
	SSM6K388NU ☆ $	60	+/-20	2	-	-	-	-	-	99	87	2.66	315	
	SSM6K389NU ☆ $	60	+/-20	2	-	-	-	-	-	200	171	1.84	158	
	SSM6K341NU $	60	+/-20	6	-	-	-	-	69	51	36	9.3	550	
	SSM6K387NU ☆ $	100	+/-20	2	-	-	-	-	-	198	125	3.6	242	
	SSM6K361NU $	100	+/-20	3.5	-	-	-	-	-	92	69	3.2	430	
DFN2020B (WF)	XSM6K376NW ☆ # $	30	+12/-8	6	-	-	109	72	-	56	-	2.2	200	
	XSM6K336NW ☆ # $	30	+/-20	3	-	-	-	-	-	140	95	1.7	126	
	XSM6K519NW ☆ # $	40	+/-20	8	-	-	-	-	-	36.3	15.3	6.5	797	T_{ch} = 175 °C
	XSM6K341NW ★ # $	60	+/-20	6.0	-	-	-	-	69	51	36	9.3	550	T_{ch} = 175 °C
	XSM6K383NW ★ # $	80	+/-20	3.6	-	-	-	-	-	-	71	3.6	321	T_{ch} = 175 °C
	XSM6K382NW ★ # $	80	+/-20	3.0	-	-	-	-	-	-	102.9	3	211	T_{ch} = 175 °C
	XSM6K381NW ★ # $	80	+/-20	5.1	-	-	-	-	-	-	36.7	5.1	584	T_{ch} = 175 °C
	XSM6K361NW ☆ # $	100	+/-20	3.5	-	-	-	-	-	92	69	3.2	430	

☆ New Products, ★ Under Development (The specification is subject to change without notice.)
AEC-Q101 qualified, $ With protection Zener diode between gate and source

Package Dimensions (unit: mm)

SOT-23F	TSOP6F
	
2.9 x 2.4	2.9 x 2.8

N-Channel Single MOSFET

Package	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (mΩ)							Q_g typ. (nC)	C_{iss} typ. (pF)	Note
					V_{GS}= 1.2 V	V_{GS}= 1.5 V	V_{GS}= 1.8 V	V_{GS}= 2.5 V	V_{GS}= 4 V	V_{GS}= 4.5 V	V_{GS}= 10 V			
SOT-23F	SSM3K344R $	20	+/-8	3	-	232	139	91	-	71	-	2	153	
	SSM3K345R $	20	+/-8	4	-	108	74	45	-	33	-	3.6	410	
	SSM3K324R $	30	+/-12	4	-	-	109	72	-	56	-	2.2	200	
	SSM3K376R # $	30	+12/-8	4	-	-	109	72	-	56	-	2.2	200	
	SSM3K336R $	30	+/-20	3	-	-	-	-	-	140	95	1.7	126	
	SSM3K333R #	30	+/-20	6	-	-	-	-	-	42	28	3.4	436	
	SSM3K335R $	30	+/-20	6	-	-	-	-	-	56	38	2.7	340	
	SSM3K347R $	38	+/-20	2	-	-	-	-	480	410	340	2.5	86	Built-in Active Clamp Zener
	SSM3K337R $	38	+/-20	2	-	-	-	-	200	176	150	3	120	Built-in Active Clamp Zener
	SSM3K339R $	40	+/-12	2	-	-	390	238	208 (@3.6 V) 201 (@4.2 V)	198	185 (@8 V)	1.1	130	
	SSM3K357R $	60	+/-12	0.65	-	-	-	2400 (@3 V)	-	1800 (@5 V)	-	1.5	43	Built-in Gate-Drain Zener
	SSM3K2615R $	60	+/-20	2	-	-	-	580 (@3.3 V)	440	-	300	6	150	
	SSM3K388R ☆ $	60	+/-20	2	-	-	-	-	-	99	87	2.66	315	
	SSM3K389R ☆ $	60	+/-20	2	-	-	-	-	-	200	171	1.84	158	
	SSM3K318R $	60	+/-20	2.5	-	-	-	-	-	145	107	7	235	
	SSM3K341R # $	60	+/-20	6	-	-	-	-	69	51	36	9.3	550	T_{ch} = 175 °C
	SSM3K387R ☆ $	100	+/-20	2	-	-	-	-	-	198	125	3.6	242	
	SSM3K361R # $	100	+/-20	3.5	-	-	-	-	-	92	69	3.2	430	T_{ch} = 175 °C
TSOP6F	SSM6K824R $	20	+/-8	6	-	108	74	45	-	33	-	3.6	410	
	SSM6K818R	30	+/-20	15	-	-	-	-	-	12	8.9	7.5	1130	
	SSM6K804R	40	+/-20	12	-	-	-	-	-	18	12	7.5	1110	
	XSM6K837R ★ # $	40	+/-20	8	-	-	-	-	-	37	16	6.5	797	T_{ch} = 175 °C
	SSM6K388R ☆ $	60	+/-20	2	-	-	-	-	-	99	87	2.66	315	
	SSM6K389R ☆ $	60	+/-20	2	-	-	-	-	-	200	171	1.84	158	
	SSM6K809R $	60	+/-20	6	-	-	-	-	69	51	36	9.3	550	T_{ch} = 175 °C
	XSM6K836R ★ # $	60	+/-20	6.7	-	-	-	-	38	29	21	24	1328	T_{ch} = 175 °C
	SSM6K387R ☆ $	100	+/-20	2	-	-	-	-	-	198	125	3.6	242	
	SSM6K810R $	100	+/-20	3.5	-	-	-	-	-	92	69	3.2	430	T_{ch} = 175 °C
	SSM6K819R $	100	+/-20	10	-	-	-	-	-	36.4	25.8	8.5	1110	T_{ch} = 175 °C

☆ New Products, ★ Under Development (The specification is subject to change without notice.)
AEC-Q101 qualified, $ With protection Zener diode between gate and source

ES6 (SOT-563)	UF6 (SOT-363F)	UDFN6 (SOT-1118)	DFN2020(WF)
		Bottom View 	Bottom View 
1.6 x 1.6	2.0 x 2.1	2.0 x 2.0	2.0 x 2.0

Dual MOSFETs

Package	Polarity	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (mΩ) $\lvert V_{GS}\rvert$ = 1.2 V	$\lvert V_{GS}\rvert$ = 1.5 V	$\lvert V_{GS}\rvert$ = 1.8 V	$\lvert V_{GS}\rvert$ = 2.5 V	$\lvert V_{GS}\rvert$ = 4 V	$\lvert V_{GS}\rvert$ = 4.5 V	$\lvert V_{GS}\rvert$ = 10 V	Q_g typ. (nC)	C_{iss} typ. (pF)	Note
ES6	P-ch x 2	SSM6P41FE $	-20	-/+8	-0.72	-	1040	670	440	-	300	-	1.76	110	
		SSM6P56FE $	-20	-/+8	-0.8	4000	900	660	480	-	390	-	1.6	100	
		SSM6P76FE ☆ $	-20	-/+8	-0.8	4000	900	660	480	-	390	-	1.6	100	Low leakage current
	N-ch x 2	SSM6N36FE $	20	+/-10	0.5	-	1520	1140	850	-	660	630 (@5 V)	1.23	46	
		SSM6N56FE $	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	
		SSM6N76FE ☆ $	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	Low leakage current
	N-ch + P-ch	SSM6L14FE $	20	+/-10	0.8	-	600	450	330	-	240	-	2	90	
			-20	-/+8	-0.72	-	1040	670	440	-	300	-	1.76	110	
		SSM6L56FE $	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	
			-20	-/+8	-0.8	4000	900	660	480	-	390	-	1.6	100	
UDFN6	P-ch x 2	SSM6P47NU $	-20	-/+8	-4	-	242	170	125	-	95	-	4.6	290	
		SSM6P69NU $	-20	-12/+6	-4	-	-	157	76	-	56	45	6.74	480	
		SSM6P49NU $	-20	-/+12	-4	-	-	157	76	-	56	45	6.74	480	
	N-ch x 2	SSM6N61NU $	20	+/-8	4	-	108	74	45	-	33	-	3.6	410	
		SSM6N55NU $	30	+/-20	4	-	-	-	-	-	64	46	2.5	280	
		SSM6N67NU $	30	+12/-8	4	-	-	82	53	-	39.1	-	3.2	310	
		SSM6N68NU $	30	+12/-8	4	-	-	180	117	-	84	-	1.8	129	
		SSM6N57NU $	30	+/-12	4	-	-	82	53	-	39.1	-	3.2	310	
		SSM6N58NU $	30	+/-12	4	-	-	180	117	-	84	-	1.8	129	
	N-ch + P-ch	SSM6L61NU $	20	+/-8	4	-	108	74	45	-	33	-	3.6	410	
			-20	-/+12	-4	-	-	157	76	-	56	45	6.74	480	
DFN2020 (WF)	N-ch x 2	XSM6N65NW ★ # $	30	+20/-12	4	-	-	-	-	-	64	46	2.5	280	Automotive equipment
		XSM6N67NW ★ # $	30	+12/-8	4	-	-	82	53	-	39.1	-	3.2	310	
UF6	P-ch x 2	SSM6P39TU $	-20	-/+8	-1.5	-	-	430	294	213	-	-	6.4	250	
		SSM6P40TU $	-30	-/+20	-1.4	-	-	-	-	403	-	226	2.9	120	
	N-ch x 2	SSM6N36TU $	20	+/-10	0.5	-	1520	1140	850	-	660	630 (@5 V)	1.23	46	
		SSM6N62TU # $	20	+/-8	0.8	456	173	120	98	-	85	-	2	177	
		SSM6N39TU $	20	+/-10	1.6	-	247	190	139	119	-	-	7.5	260	
		SSM6N24TU $	30	+/-12	0.5	-	-	-	180	-	145	-	-	245	
		SSM6N40TU $	30	+/-20	1.6	-	-	-	-	182	-	122	5.1	180	
	N-ch + P-ch	SSM6L39TU $	20	+/-10	1.6	-	247	190	139	119	-	-	7.5	260	
			-20	-/+8	-1.5	-	-	430	294	213	-	-	6.4	250	
		SSM6L12TU $	30	+/-12	0.5	-	-	-	180	-	145	-	-	245	
			-20	-/+12	-0.5	-	-	-	430	260	-	-	-	218	
		SSM6L40TU $	30	+/-20	1.6	-	-	-	-	182	-	122	5.1	180	
			-30	-/+20	-1.4	-	-	-	-	403	-	226	2.9	120	

☆ New Products, ★ Under Development (The specification is subject to change without notice.)
AEC-Q101 qualified, $ With protection Zener diode between gate and source

Package Dimensions (unit: mm)

US6 (SOT-363)	TSOP6F	TCSP6A-172101	TCSPAC-153001	TCSPED-302701	TCSPAG-341501
		Bottom View 	Bottom View 	Bottom View 	Bottom View 
2.0 x 2.1	2.9 x 2.8	2.14 x 1.67	2.98 x 1.49	3.0 x 2.74	3.37 x 1.47

Dual MOSFETs

Package	Polarity	Part Number		V_{DSS} or V_{SSS} (V)	V_{GSS} (V)	I_D or I_S (A)	$R_{DS(ON)}$ max or $R_{SS(ON)}$ max (mΩ) $\lvert V_{GS}\rvert$ = 1.2 V	$\lvert V_{GS}\rvert$ = 1.5 V	$\lvert V_{GS}\rvert$ = 1.8 V	$\lvert V_{GS}\rvert$ = 2.5 V	$\lvert V_{GS}\rvert$ = 4 V	$\lvert V_{GS}\rvert$ = 4.5 V	$\lvert V_{GS}\rvert$ = 10 V	Q_g typ. (nC)	C_{iss} typ. (pF)	Note
US6	N-ch x 2	SSM6N43FU	$	20	+/-10	0.5	-	1520	1140	850	-	660	630 (@5 V)	1.23	46	
TSOP6F	N-ch x 2	SSM6N357R	$	60	+/-12	0.65	-	-	-	2400 (@3 V)	-	1800 (@5 V)	-	1.5	43	Built-in Gate-Drain Zener
		SSM6N815R	$	100	+/-20	2	-	-	-	-	180	142	103	3.1	290	
		SSM6N813R	$	100	+/-20	3.5	-	-	-	-	-	154	112	3.6	242	T_{ch} = 175 °C
	P-ch x 2	SSM6P816R	$	-20	-/+10	-6	-	-	52.3	38.8	-	30.1	-	16.6	1030	
	N-ch + P-ch	SSM6L807R	$	30	+/-12	4	-	-	82	53	-	39.1	-	3.2	310	
				-20	-/+12	-4	-	-	157	76	-	56	45	6.74	480	
		SSM6L820R	$	30	+12/-8	4	-	-	82	53	-	39.1	-	3.2	310	
				-20	-12/+6	-4	-	-	157	76	-	56	45	6.7	480	
		SSM6L826R ☆	$	30	+20/-12	4	-	-	-	-	-	64	46	2.5	280	
				-30	-20/+10	-4	-	-	-	-	-	73	45	6.2	492	
TCSP6A-172101	N-ch x 2	SSM6N951L	$	12	+/-8	8	-	-	-	10	5.5 (@3.8 V)	5.1	-	26	-	Drain common
TCSPAC-153001	N-ch x 2	SSM10N954L	$	12	+/-8	13.5	-	-	-	6.1	2.85 (@3.8 V)	2.75	-	25	-	Drain common
TCSPED-302701	N-ch x 2	SSM14N956L	$	12	+/-8	20	-	-	-	3.2	1.5 (@3.8 V)	1.35	-	76	-	Drain common
TCSPAG-341501	N-ch x 2	SSM10N961L ☆	$	30	+/-20	14	-	-	-	-	-	17.6	12.8	8.8	-	Drain common

☆ New Products
$ With protection Zener diode between gate and source

Less than 500mA Series MOSFETs (Standard Type)

Package Dimensions (unit: mm)

CST3C	CST3 (SOT-883)	VESM (SOT-723)	SSM (SOT-416)	UFM (SOT-323F)	USM (SOT-323)	S-Mini (SOT-346)
Bottom View	Bottom View					
						
0.8 x 0.6	1.0 x 0.6	1.2 x 1.2	1.6 x 1.6	2.0 x 2.1	2.0 x 2.1	2.9 x 2.5

P-Channel Single MOSFETs

Package	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (Ω)							Note
					V_{GS}= -1.2 V	V_{GS}= -1.5 V	V_{GS}= -1.8 V	V_{GS}= -2.5 V	V_{GS}= -4 V	V_{GS}= -4.5 V	V_{GS}= -10 V	
CST3C	SSM3J35CTC $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	
	SSM3J78CTC ☆ $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	Low leakage current
CST3	SSM3J35CT $	-20	-/+10	-0.1	44	22	-	11	8	-	-	
	SSM3J16CT ● $	-20	-/+10	-0.1	-	45	-	12	8	-	-	⇒ SSM3J35CT
	SSM3J15CT $	-30	-/+20	-0.1	-	-	-	32	12	-	-	
VESM	SSM3J35MFV $	-20	-/+10	-0.1	44	22	-	11	8	-	-	⇒ SSM3J35AMFV
	SSM3J36MFV $	-20	-/+8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	⇒ SSM3J56MFV
	SSM3J35AMFV $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	
	SSM3J78MFV ☆ $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	Low leakage current
	SSM3J15FV $	-30	-/+20	-0.1	-	-	-	32	12	-	-	
SSM	SSM3J35FS $	-20	-/+10	-0.1	44	22	-	11	8	-	-	⇒ SSM3J35AFS
	SSM3J35AFS $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	
	SSM3J78FS ☆ $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	Low leakage current
	SSM3J36FS $	-20	-/+8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	
	SSM3J15FS $	-30	-/+20	-0.1	-	-	-	32	12	-	-	
UFM	SSM3J36TU $	-20	-/+8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	
USM	SSM3J15FU $	-30	-/+20	-0.1	-	-	-	32	12	-	-	
S-Mini	SSM3J15F $	-30	-/+20	-0.1	-	-	-	32	12	-	-	
	2SJ305 $	-30	-/+20	-0.2	-	-	-	4	-	-	-	
	SSM3J168F # $	-60	-20/+10	-0.4	-	-	-	-	2	1.9	1.55	

☆ New Products
● Recommended Another New Product
AEC-Q101 qualified, $ With protection Zener diode between gate and source

Package Dimensions (unit: mm)

CST3C	CST3 (SOT-883)	VESM (SOT-723)	SSM (SOT-416)	USM (SOT-323)	SOT23 (SOT-23)	S-Mini (SOT-346)
Bottom View	Bottom View					
						
0.8 x 0.6	1.0 x 0.6	1.2 x 1.2	1.6 x 1.6	2.0 x 2.1	2.9 x 2.4	2.9 x 2.5

N-Channel Single MOSFETs

Package	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (Ω)								Note
					V_{GS}= 1.2 V	V_{GS}= 1.5 V	V_{GS}= 1.8 V	V_{GS}= 2.5 V	V_{GS}= 4 V	V_{GS}= 4.5 V	V_{GS}= 5 V	V_{GS}= 10 V	
CST3C	SSM3K35CTC $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
	SSM3K78CTC ☆ $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	Low leakage current
	SSM3K15ACTC $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	SSM3K79CTC ☆ $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	Low leakage current
	SSM3K72CTC $	60	+/-20	0.15	-	-	-	5.7 (typ.)	-	4.7	4.4	3.9	
CST3	SSM3K16CT $	20	+/-10	0.1	-	15	-	4	3	-	-	-	
	SSM3K35CT $	20	+/-10	0.18	20	8	-	4	3	-	-	-	
	SSM3K37CT $	20	+/-10	0.2	-	5.6	4.05	3.02	-	2.2	-	-	
	SSM3K77CT ☆ $	20	+/-10	0.2	-	5.6	4.05	3.1	-	2.2	-	-	Low leakage current
	SSM3K15CT ● $	30	+/-20	0.1	-	-	-	7	4	-	-	-	⇒ SSM3K15ACT
	SSM3K15ACT $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	SSM3K79CT ☆ $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	Low leakage current
	SSM3K72KCT $	60	+/-20	0.4	-	-	-	-	-	1.75	1.65	1.5	
VESM	SSM3K16FV $	20	+/-10	0.1	-	15	-	4	3	-	-	-	
	SSM3K35MFV $	20	+/-10	0.18	20	8	-	4	3	-	-	-	⇒ SSM3K35AMFV
	SSM3K37MFV $	20	+/-10	0.25	-	5.6	4.05	3.02	-	2.2	-	-	
	SSM3K77MFV☆ $	20	+/-10	0.25	-	5.6	4.05	3.1	-	2.2	-	-	Low leakage current
	SSM3K35AMFV $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
	SSM3K78MFV ☆ $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	Low leakage current
	SSM3K15AMFV $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	SSM3K79MFV ☆ $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	Low leakage current
	SSM3K44MFV $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
SSM	SSM3K16FS $	20	+/-10	0.1	-	15	-	4	3	-	-	-	⇒ SSM3K37FS
	SSM3K35FS $	20	+/-10	0.18	20	8	-	4	3	-	-	-	⇒ SSM3K35AFS
	SSM3K37FS $	20	+/-10	0.2	-	5.6	4.05	3.02	-	2.2	-	-	
	SSM3K77FS ☆ $	20	+/-10	0.2	-	5.6	4.05	3.1	-	2.2	-	-	Low leakage current
	SSM3K35AFS $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
	SSM3K78FS ☆ $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	Low leakage current
	SSM3K15FS ● $	30	+/-20	0.1	-	-	-	7	4	-	-	-	⇒ SSM3K15AFS
	SSM3K44FS $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
	SSM3K15AFS $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	SSM3K79FS ☆ $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	Low leakage current
	SSM3K72CFS $	60	+/-20	0.17	-	-	-	-	-	4.7	4.4	3.9	
	SSM3K72KFS # $	60	+/-20	0.3	-	-	-	-	-	1.75	1.65	1.5	
USM	SSM3K16FU $	20	+/-10	0.1	-	15	-	4	3	-	-	-	
	SSM3K15FU ● $	30	+/-20	0.1	-	-	-	7	4	-	-	-	⇒ SSM3K15AFU
	SSM3K15AFU $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	SSM3K79FU ☆ $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	Low leakage current
	SSM3K09FU $	30	+/-20	0.4	-	-	-	1.7 (@3.3 V)	1.2	-	-	0.7	
	SSM3K17FU $	50	+/-7	0.1	-	-	-	40	20	-	-	-	
	SSM3K7002CFU $	60	+/-20	0.17	-	-	-	-	-	4.7	4.4	3.9	
	SSM3K7002KFU # $	60	+/-20	0.4	-	-	-	-	-	1.75	1.65	1.5	
SOT23	T2N7002AK $	60	+/-20	0.2	-	-	-	-	-	4.7	4.4	3.9	
	T2N7002BK $	60	+/-20	0.4	-	-	-	-	-	1.75	1.65	1.5	
S-Mini	SSM3K15F $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
	2SK2009 $	30	+/-20	0.2	-	-	-	2	-	-	-	-	
	SSM3K7002KF # $	60	+/-20	0.4	-	-	-	-	-	1.75	1.65	1.5	

☆ New Products
● Recommended Another New Product,# AEC-Q101 qualified, $ With protection Zener diode between gate and source

ESV (SOT-553)	ES6 (SOT-563)	USV (SOT-353)	UF6 (SOT-363F)
			
1.6 x 1.6	1.6 x 1.6	2.0 x 2.1	2.0 x 2.1

Dual MOSFETs

Package	Polarity	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (Ω)								Note
						$\|V_{GS}\|$ = 1.2 V	$\|V_{GS}\|$ = 1.5 V	$\|V_{GS}\|$ = 1.8 V	$\|V_{GS}\|$ = 2.5 V	$\|V_{GS}\|$ = 4 V	$\|V_{GS}\|$ = 4.5 V	$\|V_{GS}\|$ = 5 V	$\|V_{GS}\|$ = 10 V	
ESV	P-ch x 2	SSM5P16FE $	-20	-/+10	-0.1	-	45	-	12	8	-	-	-	
	N-ch x 2	SSM5N16FE $	20	+/-10	0.1	-	15	-	4	3	-	-	-	
		SSM5N15FE $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
ES6	P-ch x 2	SSM6P35FE $	-20	-/+10	-0.1	44	22	-	11	8	-	-	-	⇒ SSM6P35AFE
		SSM6P35AFE $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	-	
		SSM6P78FE ☆ $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	-	Low leakage current
		SSM6P36FE $	-20	-/+8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	-	
		SSM6P15FE $	-30	-/+20	-0.1	-	-	-	32	12	-	-	-	
	N-ch x 2	SSM6N16FE $	20	+/-10	0.1	-	15	-	4	3	-	-	-	
		SSM6N35FE ● $	20	+/-10	0.18	20	8	-	4	3	-	-	-	⇒ SSM6N35AFE
		SSM6N37FE $	20	+/-10	0.25	-	5.6	4.05	3.02	-	2.2	-	-	
		SSM6N77FE ☆ $	20	+/-10	0.25	-	5.6	4.05	3.1	-	2.2	-	-	Low leakage current
		SSM6N35AFE $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
		SSM6N78FE ☆ $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	Low leakage current
		SSM6N44FE $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
		SSM6N15AFE $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
		SSM6N79FE ☆ $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	Low leakage current
		SSM6N7002BFE $	60	+/-20	0.2	-	-	-	-	-	3.3	2.6	2.1	
	N-ch + P-ch	SSM6L35FE $	20	+/-10	0.18	20	8	-	4	3	-	-	-	
			-20	-/+10	-0.1	44	22	-	11	8	-	-	-	
		SSM6L36FE $	20	+/-10	0.5	-	1.52	1.14	0.85	-	0.66	0.63	-	
			-20	-/+8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	-	
USV	P-ch x 2	SSM5P15FU $	-30	-/+20	-0.1	-	-	-	32	12	-	-	-	
	N-ch x 2	SSM5N16FU $	20	+/-10	0.1	-	15	-	4	3	-	-	-	
		SSM5N15FU $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
UF6	P-ch x 2	SSM6P36TU $	-20	-/+8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	-	
	N-ch + P-ch	SSM6L36TU $	20	+/-10	0.5	-	1.52	1.14	0.85	-	0.66	0.63	-	
			-20	-/+8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	-	

☆ New Products
$ With protection Zener diode between gate and source
● Recommended Another New Product

Package Dimensions (unit: mm)

US6
(SOT-363)

2.0 x 2.1

Dual MOSFETs

Package	Polarity	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (Ω)								Note
						$\|V_{GS}\|$ = 1.2 V	$\|V_{GS}\|$ = 1.5 V	$\|V_{GS}\|$ = 1.8 V	$\|V_{GS}\|$ = 2.5 V	$\|V_{GS}\|$ = 4 V	$\|V_{GS}\|$ = 4.5 V	$\|V_{GS}\|$ = 5 V	$\|V_{GS}\|$ = 10 V	
US6	P-ch x 2	SSM6P35FU ● $	-20	-/+10	-0.1	44	22	-	11	8	-	-	-	⇒ SSM6P35AFU
		SSM6P35AFU $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	-	
		SSM6P78FU ☆ $	-20	-/+10	-0.25	20	4	2.9	2.1	-	1.4	-	-	Low leakage current
		SSM6P15FU $	-30	-/+20	-0.1	-	-	-	32	12	-	-	-	
	N-ch x 2	SSM6N16FU $	20	+/-10	0.1	-	15	-	4	3	-	-	-	
		SSM6N35FU ● $	20	+/-10	0.18	20	8	-	4	3	-	-	-	⇒ SSM6N35AFU
		SSM6N35AFU $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
		SSM6N78FU ☆ $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	Low leakage current
		SSM6N37FU $	20	+/-10	0.25	-	5.6	4.05	3.02	-	2.2	-	-	
		SSM6N77FU ☆ $	20	+/-10	0.25	-	5.6	4.05	3.1	-	2.2	-	-	Low leakage current
		SSM6N44FU $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
		SSM6N15FU ● $	30	+/-20	0.1	-	-	-	7	4	-	-	-	⇒ SSM6N15AFU
		SSM6N15AFU $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
		SSM6N79FU ☆ $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	Low leakage current
		SSM6N09FU $	30	+/-20	0.4	-	-	-	1.7 (@3.3 V)	1.2	-	-	0.7	
		SSM6N17FU $	50	+/-7	0.1	-	-	-	40	20	-	-	-	
		SSM6N7002CFU $	60	+/-20	0.17	-	-	-	-	-	4.7	4.4	3.9	
		SSM6N7002KFU # $	60	+/-20	0.3	-	-	-	-	-	1.75	1.65	1.5	
	N-ch + P-ch	SSM6L35FU $	20	+/-10	0.18	20	8	-	4	3	-	-	-	
			-20	-/+10	-0.1	44	22	-	11	8	-	-	-	

☆ New Products
● Recommended Another New Product, # AEC-Q101 qualified, $ With protection Zener diode between gate and source

MOSFETs with Diode

Package Dimensions (unit: mm)

ESV (SOT-553)	UFV (SOT-353F)	UDFN6 (SOT-1118)
		Bottom View 
1.6 x 1.6	2.0 x 2.1	2.0 x 2.0

Package	Polarity	Part Number		V_{DSS} (V)	V_{GSS} (V)	I_D (A)	MOSFET $R_{DS(ON)}$ max (mΩ) $\lvert V_{GS}\rvert$ = 1.5 V	$\lvert V_{GS}\rvert$ = 1.8 V	$\lvert V_{GS}\rvert$ = 2.5 V	$\lvert V_{GS}\rvert$ = 4 V	$\lvert V_{GS}\rvert$ = 4.5 V	$\lvert V_{GS}\rvert$ = 5 V	$\lvert V_{GS}\rvert$ = 10 V	MOSFET C_{iss} typ. (pF)	Diode V_R (V)	Diode I_O (A)	Diode V_F max (V)	Diode V_F max (V) @I_F (A)	Note
ESV	P-ch + SBD	SSM5G06FE	$	-20	-/+10	-0.1	45000	-	12000	8000	-	-	-	11	12	0.1	0.5	0.1	
	N-ch + SBD	SSM5H06FE	$	20	+/-10	0.1	15000	-	4000	3000	-	-	-	9.3	12	0.1	0.5	0.1	
UFV	P-ch + SBD	SSM5G02TU	$	-12	-/+12	-1	-	-	240	160	-	-	-	310	12	0.5	0.43	0.5	
		SSM5G09TU	$	-12	-/+8	-1.5	-	-	200	130	-	-	-	550	12	0.5	0.43	0.5	
		SSM5G11TU	$	-30	-/+20	-1.4	-	-	-	403	-	-	226	120	30(¥)	0.7(¥¥)	0.44	0.7(¥¥)	
	N-ch + SBD	SSM5H16TU	$	30	+/-12	1.9	-	296	177	133	-	-	-	123	30	0.8	0.55	0.8	
	N-ch + Switching Diode	SSM5H90ATU	$	20	+/-10	2.4	-	-	89	65	-	-	-	200	80	0.1	1.2	0.1	
UDFN6	P-ch + SBD	SSM6G18NU	$	-20	-/+8	-2	261	185	143	-	112	-	-	270	30	1	0.58	1	
	N-ch + SBD	SSM6H19NU	$	40	+/-12	2	-	390	238	208 (@3.6 V) 201 (@4.2 V)	198	-	185 (@8 V)	130	40	0.5	0.57	0.5	

$ With protection Zener diode between gate and source, ¥ V_{RRM}, ¥¥ $I_{F(AV)}$

Part Naming Conventions

Small-Signal MOSFET SSM / XSM Series

Ex.) SSM 3 K 329 _ R
① ② ③ ④ ⑤ ⑥

① Small-Signal MOSFET
SSM : Initial of "Small-Signal MOSFET"
XSM : Initial of "Automotive Small-Signal MOSFET"

② Pin count

③ Polarity and internal configuration
K: N-channel, single
J : P-channel, single
N: N-channel, dual
P : P-channel, dual
L : N-channel and P-channel (dual)
E : N-channel and P-channel (pre-wired as a load switch)
H: N-channel and SBD (or Switching diode)
G: P-channel and SBD

④ Serial number of the products

⑤ There may be a symbol that indicates chip change etc.

⑥ Package

3-pin	F: S-Mini	5-pin	F: SMV
	FU: USM		FU: USV
	FS: SSM		FE: ESV
	FV: VESM		TU: UFV
	TU: UFM	6-pin	G: WCSP6C
	CT: CST3		L: Chip LGA (TCSP6A-172101)
	CTB: CST3B		R: TSOP6F
	CTC: CST3C		FU: US6
	R: SOT-23F		FE: ES6
			TU: UF6
			NU: UDFN6 / UDFN6B
			NW: DFN2020(WF) / DFN2020B(WF)
		10-pin	L: Chip LGA (TCSPAC-153001) (TCSPAG-341501)
		14-pin	L: Chip LGA (TCSPED-302701)

2. Bipolar Transistors

General-Purpose Transistors

Package Dimensions (unit: mm)

Classification	$\|V_{CEO}\|$ (V)	$\|I_C\|$ (mA)	CST3 (SOT-883)		VESM (SOT-723)		SSM (SOT-416)	
			Bottom View  1.0 x 0.6		 1.2 x 1.2		 1.6 x 1.6	
			Part Number					
			NPN	PNP	NPN	PNP	NPN	PNP
General Purpose	50	100	2SC6026CT	2SA2154CT				
	50	150			2SC6026MFV #	2SA2154MFV #	2SC4738 #	2SA1832 #

Classification	$\|V_{CEO}\|$ (V)	$\|I_C\|$ (mA)	USM (SOT-323)		UFM (SOT-323F)		S-Mini (SOT-346)		SOT23 (SOT-23)		SOT-23F	
			 2.0 x 2.1		 2.0 x 2.1		 2.9 x 2.5		 2.9 x 2.4		 2.9 x 2.4	
			Part Number									
			NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
General Purpose	30	500		2SA1588 #				2SA1182 #				
	50	150	2SC4116 #	2SA1586 #			2SC2712 #	2SA1162 #	TBC847	TBC857		
			TTC4116FU	TTA1586FU								
		200							TMBT3904	TMBT3906		
	50	500					2SC3325 #	2SA1313 #				
							TTC1949					
	45							TTA1713				
Low Noise	120	100	2SC4117 #	2SA1587 #			2SC2713 #	2SA1163 #				
Low Saturation	15	800						2SA1362 #				
Muting	20	300	2SC4213				2SC3326 #					
High Current	20	2500				2SA2215 #						TTA502 #☆
	25	800					2SC3265 #	2SA1298 #				
	50	1000			2SC6135 #						TTC500 #☆	TTA500 #☆
	50	1700				2SA2195 #						
	50	2000										TTA501 #☆
	50	2500			2SC6100 #						TTC501 #☆	
	120	1000									TTC502 #☆	
High Breakdown	300	100						2SA1721				

☆ New Products
AEC-Q101 qualified

Package Dimensions (unit: mm)

Classification	$\|V_{CEO}\|$ (V)	$\|I_C\|$ (mA)	ESV (SOT-553)	USV (SOT-353)	SMV (SOT-25)		
			1.6 x 1.6	2.0 x 2.1	2.9 x 2.8		
			Part Number				
			Complementary	NPN x 2	PNP x 2	NPN x 2	PNP x 2	Complementary
General Purpose	50	150	HN4B01JE	2SC4944	2SA1873	2SC4207	2SA1618	
					HN4A56JU			
Low Noise	120	100				HN4C06J	HN4A06J	HN4B06J
						HN4C51J	HN4A51J	

Classification	$\|V_{CEO}\|$ (V)	$\|I_C\|$ (mA)	ES6 (SOT-563)			US6 (SOT-363)			SM6 (SOT-26)		
			1.6 x 1.6			2.0 x 2.1			2.9 x 2.8		
			Part Number								
			NPN x 2	PNP x 2	Complementary	NPN x 2	PNP x 2	Complementary	NPN x 2	PNP x 2	Complementary
General Purpose	50	150	HN1C01FE #	HN1A01FE #		HN1C01FU #	HN1A01FU #	HN1B01FU #	HN1C01F	HN1A01F	HN1B01F
					HN1B04FE #			HN1B04FU #			
	50	500							HN1C07F	HN1A07F	
High Current	15	800								HN1A02F	
Muting	20	300				HN1C03FU #			HN1C03F		

AEC-Q101 qualified

Bipolar transistor with Diode

Package Dimensions (unit: mm)

SM6
(SOT-26)

2.9 x 2.8

Package	Polarity	Part Number	V_{CEO} (V)	I_C (A)	PNP transistor			Switching Diode				Note
					h_{FE}	$V_{CE(sat)}$ max (V)	C_{ob} typ. (pF)	V_R (V)	I_O (A)	V_F max (V)		
					V_{CE}= -6 V, I_C= -2 mA	I_C=-10 mA, I_B=-1 mA					@I_F (A)	
SM6	PNP + Switching Diode	HN2E04F	-120	-0.1	200 to 700	-0.3	4	80	0.1	1.2	0.1	

Bias Resistor Built-in Transistors (BRTs)

Package Dimensions (unit: mm)

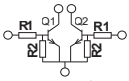
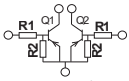
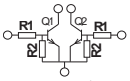
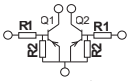
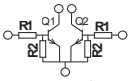
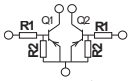
|V_{CEO}| (V)	|I_C| (mA)	Resistance R1 typ. (kΩ)	Resistance R2 typ. (kΩ)	VESM (SOT-723) 1.2 x 1.2 NPN	VESM (SOT-723) 1.2 x 1.2 PNP	SSM (SOT-416) 1.6 x 1.6 NPN	SSM (SOT-416) 1.6 x 1.6 PNP	USM (SOT-323) 2.0 x 2.1 NPN	USM (SOT-323) 2.0 x 2.1 PNP	S-Mini (SOT-346) 2.9 x 2.5 NPN	S-Mini (SOT-346) 2.9 x 2.5 PNP
				Part Number								
50	100	4.7	4.7	RN1101MFV #	RN2101MFV #	RN1101 #	RN2101 #	RN1301 #	RN2301 #	RN1401 #	RN2401 #
		10	10	RN1102MFV #	RN2102MFV #	RN1102 #	RN2102 #	RN1302 #	RN2302 #	RN1402 #	RN2402 #
		22	22	RN1103MFV #	RN2103MFV #	RN1103 #	RN2103 #	RN1303 #	RN2303 #	RN1403 #	RN2403 #
		47	47	RN1104MFV #	RN2104MFV #	RN1104 #	RN2104 #	RN1304 #	RN2304 #	RN1404 #	RN2404 #
		2.2	47	RN1105MFV #	RN2105MFV #	RN1105 #	RN2105 #	RN1305 #	RN2305 #	RN1405 #	RN2405 #
		4.7	47	RN1106MFV #	RN2106MFV #	RN1106 #	RN2106 #	RN1306 #	RN2306 #	RN1406 #	RN2406 #
		10	47	RN1107MFV #	RN2107MFV #	RN1107 #	RN2107 #	RN1307 #	RN2307 #	RN1407 #	RN2407 #
		22	47	RN1108MFV #	RN2108MFV #	RN1108 #	RN2108 #	RN1308 #	RN2308 #	RN1408 #	RN2408 #
		47	22	RN1109MFV #	RN2109MFV #	RN1109 #	RN2109 #	RN1309 #	RN2309 #	RN1409 #	RN2409 #
		4.7	-	RN1110MFV #	RN2110MFV #	RN1110 #	RN2110 #	RN1310 #	RN2310 #	RN1410 #	RN2410 #
		10	-	RN1111MFV #	RN2111MFV #	RN1111 #	RN2111 #	RN1311 #	RN2311 #	RN1411 #	RN2411 #
		22	-	RN1112MFV #	RN2112MFV #	RN1112 #	RN2112 #	RN1312 #	RN2312 #	RN1412 #	RN2412 #
		47	-	RN1113MFV #	RN2113MFV #	RN1113 #	RN2113 #	RN1313 #	RN2313 #	RN1413 #	RN2413 #
		1	10	RN1114MFV #	RN2114MFV #	RN1114	RN2114	RN1314	-	RN1414	RN2414
		2.2	10	RN1115MFV #	RN2115MFV #	RN1115 #	RN2115 #	RN1315 #	RN2315 #	RN1415 #	RN2415 #
		4.7	10	RN1116MFV #	RN2116MFV #	RN1116 #	RN2116 #	RN1316 #	RN2316 #	RN1416 #	RN2416 #
		10	4.7	RN1117MFV #	RN2117MFV #	RN1117	RN2117	RN1317	RN2317 #	RN1417 #	RN2417 #
		47	10	RN1118MFV #	RN2118MFV #	RN1118	-	RN1318	RN2318	RN1418 #	RN2418 #
		1	-	RN1119MFV #	RN2119MFV #	-	-	-	-	-	-
		100	100	RN1130MFV #	RN2130MFV #	-	-	-	-	-	-
		100	-	RN1131MFV #	RN2131MFV #	-	-	-	-	-	-
		200	-	RN1132MFV #	RN2132MFV #	-	-	-	-	-	-

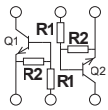
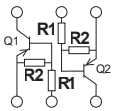
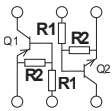
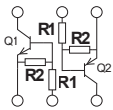
|V_{CEO}| (V)	|I_C| (mA)	Resistance R1 typ. (kΩ)	Resistance R2 typ. (kΩ)	SOT23 (SOT-23) 2.9 x 2.4 NPN	SOT23 (SOT-23) 2.9 x 2.4 PNP
				Part Number	
50	100	4.7	4.7	TDTC143E	TDTA143E
		10	10	TDTC114E	TDTA114E
		22	22	TDTC124E	TDTA124E
		47	47	TDTC144E	TDTA144E
		2.2	47	TDTC123J	TDTA123J
		4.7	47	TDTC143Z	TDTA143Z
		10	47	TDTC114Y	TDTA114Y

|V_{CEO}| (V)	|I_C| (mA)	Resistance R1 typ. (kΩ)	Resistance R2 typ. (kΩ)	S-Mini (SOT-346) 2.9 x 2.5 NPN	S-Mini (SOT-346) 2.9 x 2.5 PNP
				Part Number	
50	800	1	1	RN1421	RN2421
		2.2	2.2	RN1422	RN2422
		4.7	4.7	RN1423	RN2423
		10	10	RN1424	RN2424
		0.47	10	RN1425	RN2425
		1	10	RN1426	RN2426
		2.2	10	RN1427	RN2427

AEC-Q101 qualified

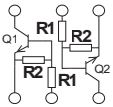
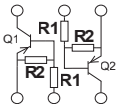
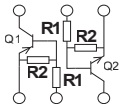
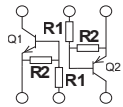
Package Dimensions (unit: mm)

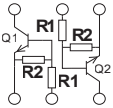
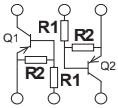
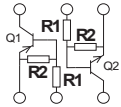
$\|V_{CEO}\|$ (V)	$\|I_C\|$ (mA)	Resistance		ESV (SOT-553)		USV (SOT-353)		SMV (SOT-25)	
				 1.6 x 1.6		 2.0 x 2.1		 2.9 x 2.8	
				 Common emitter	 Common emitter	 Common emitter	 Common emitter	 Common emitter	 Common emitter
		R1 typ. (kΩ)	R2 typ. (kΩ)	NPN x 2	PNP x 2	NPN x 2	PNP x 2	NPN x 2	PNP x 2
				Part Number					
50	100	4.7	4.7	RN1701JE	RN2701JE	RN1701 #	RN2701 #	RN1501	RN2501
		10	10	RN1702JE	RN2702JE	RN1702 #	RN2702 #	RN1502	RN2502
		22	22	RN1703JE	RN2703JE	RN1703 #	RN2703 #	RN1503	RN2503
		47	47	RN1704JE	RN2704JE	RN1704 #	RN2704 #	RN1504	RN2504
		2.2	47	RN1705JE	RN2705JE	RN1705 #	RN2705 #	RN1505	RN2505
		4.7	47	RN1706JE	RN2706JE	RN1706 #	RN2706 #	RN1506	RN2506
		10	47	RN1707JE	RN2707JE	RN1707 #	RN2707 #	RN1507	RN2507
		22	47	RN1708JE	RN2708JE	RN1708 #	RN2708 #	RN1508	-
		47	22	RN1709JE	RN2709JE	RN1709 #	RN2709 #	RN1509	-
		4.7	-	RN1710JE	RN2710JE	RN1710 #	RN2710 #	RN1510	RN2510
		10	-	RN1711JE	RN2711JE	RN1711 #	RN2711 #	RN1511	RN2511
		22	-	-	RN2712JE	-	-	-	-
		47	-	-	RN2713JE	-	-	-	-

$\|V_{CEO}\|$ (V)	$\|I_C\|$ (mA)	Resistance		ES6 (SOT-563)			
				 1.6 x 1.6			
				 Point symmetrical	 Point symmetrical	 Point symmetrical	 Point symmetrical
		R1 typ. (kΩ)	R2 typ. (kΩ)	NPN x 2	PNP x 2	PNP + NPN	NPN + PNP
				Part Number			
50	100	4.7	4.7	RN1901FE #	RN2901FE #	RN4901FE #	RN4981FE #
		10	10	RN1902FE #	RN2902FE #	RN4902FE #	RN4982FE #
		22	22	RN1903FE #	RN2903FE #	RN4903FE #	RN4983FE #
		47	47	RN1904FE #	RN2904FE #	RN4904FE #	RN4984FE #
		2.2	47	RN1905FE #	RN2905FE #	RN4905FE #	RN4985FE #
		4.7	47	RN1906FE #	RN2906FE #	RN4906FE #	RN4986FE #
		10	47	RN1907FE #	RN2907FE #	RN4907FE #	RN4987FE #
		22	47	RN1908FE #	RN2908FE #	RN4908FE #	RN4988FE #
		47	22	RN1909FE #	RN2909FE #	RN4909FE #	RN4989FE #
		4.7	-	RN1910FE #	RN2910FE #	RN4910FE #	RN4990FE #
		10	-	RN1911FE #	RN2911FE #	RN4911FE #	RN4991FE #

AEC-Q101 qualified

Package Dimensions (unit: mm)

|V_{CEO}| (V)	|I_C| (mA)	Resistance		US6 (SOT-363)			
				 2.0 x 2.1			
				 Point symmetrical	 Point symmetrical	 Point symmetrical	 Point symmetrical
		R1 typ. (kΩ)	R2 typ. (kΩ)	NPN x 2	PNP x 2	PNP + NPN	NPN + PNP
				Part Number			
50	100	4.7	4.7	RN1901 #	RN2901 #	RN4901 #	RN4981 #
		10	10	RN1902 #	RN2902 #	RN4902 #	RN4982 #
		22	22	RN1903 #	RN2903 #	RN4903 #	RN4983 #
		47	47	RN1904 #	RN2904 #	RN4904 #	RN4984 #
		2.2	47	RN1905 #	RN2905 #	RN4905 #	RN4985 #
		4.7	47	RN1906 #	RN2906 #	RN4906 #	RN4986 #
		10	47	RN1907 #	RN2907 #	RN4907 #	RN4987 #
		22	47	RN1908 #	RN2908 #	RN4908 #	RN4988 #
		47	22	RN1909 #	RN2909 #	RN4909 #	RN4989 #
		4.7	-	RN1910 #	RN2910 #	RN4910 #	RN4990
		10	-	RN1911 #	RN2911 #	RN4911 #	-
		47 / 2.2*	47	-	-	-	RN49A2

|V_{CEO}| (V)	|I_C| (mA)	Resistance		SM6 (SOT-26)		
				 2.9 x 2.8		
				 Point symmetrical	 Point symmetrical	 Point symmetrical
		R1 typ. (kΩ)	R2 typ. (kΩ)	NPN x 2	PNP x 2	PNP + NPN
				Part Number		
50	100	4.7	4.7	RN1601	RN2601	RN4601
		10	10	RN1602	RN2602	RN4602
		22	22	RN1603	RN2603	RN4603
		47	47	RN1604	RN2604	RN4604
		2.2	47	RN1605	RN2605	RN4605
		4.7	47	RN1606	RN2606	RN4606
		10	47	RN1607	RN2607	RN4607
		22	47	RN1608	RN2608	RN4608
		47	22	RN1609	-	RN4609
		4.7	-	RN1610	RN2610	RN4610
		10	-	RN1611	-	RN4611
		22	-	-	-	RN4612

* Q1/Q2
# AEC-Q101 qualified

3. Diodes

Schottky Barrier Diodes (SBDs)

Package Dimensions (unit: mm)

Features	Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)						CST2 (SOD-882)	CST2B	CST2C (SOD-963)	USC (SOD-323)	US2H (SOD-323HE)	UFV (SOT-353F)
									Bottom View	Bottom View	Bottom View			
	V_R / V_{RM}* (V)	I_O (A)	V_F typ. (V)	V_F max (V)	V_F @I_F (A)	I_R max (μA)	I_R @V_R (V)	C_t typ. (pF)	1.0 x 0.6	1.2 x 0.8	1.6 x 0.8	2.5 x 1.25	2.5 x 1.4	2.0 x 2.1
High-V_R and I_O	60	2	0.52	0.59	2	70	60	300					CUHS20F60	
			0.46	0.53	2	650	60	290					CUHS20S60	
		1.5	0.66	0.73	1.5	50	60	130					CUHS15F60	
			0.6	0.67	1.5	450	60	130					CUHS15S60	
		1	0.56	0.62	1	40	60	130					CUHS10F60	
	40	2	0.47	0.54	2	60	40	300					CUHS20F40	
			0.4	0.47	2	300	40	290					CUHS20S40	
		1.5	0.45	0.51	1.5	200	40	170					CUHS15S40	
			0.57	0.63	1.5	50	40	130					CUHS15F40	
			0.59	0.64	1.5	25	40	130			CCS15F40			
		1	to 0.63	to 0.7	1	20	40	74		CBS10F40		CUS10F40		
		0.5	0.74	0.81	0.5	15	40	28	CTS05F40			CUS05F40		
	40*	1.5	0.47	0.55	1.5	200	40	170			CCS15S40	CUS15S40		
		1	to 0.48	to 0.55	1	150	40	120		CBS10S40		CUS10S40		
		0.5	0.56	0.6	0.5	50	40	42	CTS05S40			CUS05S40		
	30	2	0.4	0.47	2	60	30	380					CUHS20F30	
			0.34	0.41	2	500	30	390					CUHS20S30	
		1.5	0.46	0.52	1.5	50	30	170					CUHS15F30	
			0.37	0.43	1.5	500	30	200					CUHS15S30	
		1	0.47	0.57	1	50	30	120						CVJ10F30 
			0.43	0.5	1	50	30	170				CUS10F30		
		0.8	0.4	0.45	0.8	50	30	170				CUS08F30		
		0.5	0.38	0.45	0.5	50	30	to 120		CBS05F30		CUS05F30		
			0.38	0.47	0.5	100	20	-				CUS551V30		
	30*	1.5	0.39	-	1.5	500	30	200			CCS15S30	CUS15S30		
		1	to 0.39	0.45	1	500	30	135		CBS10S30		CUS10S30		
		0.5	0.41	0.47	0.5	300	30	55	CTS05S30			CUS05S30		

Schottky Barrier Diodes (SBDs)

Package Dimensions (unit: mm)

Features	Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)						CL2E	CST2 (SOD-882)	SOD-923	ESC (SOD-523)	USC (SOD-323)
	V_R (V)	I_O (A)	V_F typ. (V)	V_F max (V)	V_F @I_F (A)	I_R max (μA)	I_R @V_R (V)	C_t typ. (pF)	Bottom View	Bottom View			
									1.0 x 0.6	1.0 x 0.6	1.0 x 0.6	1.6 x 0.8	2.5 x 1.25
Low-I_R High Speed	40	1	0.52	0.57	1	25	40	130	CLS10F40				
	20	0.05	0.5	0.55	0.05	0.5	20	3.9		1SS413CT	1SS413	1SS405 #	1SS406 #

Features	Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)						S-Mini (SOT-346)	US6 (SOT-363)
	V_R (V)	I_O (A)	V_F typ. (V)	V_F max (V)	V_F @I_F (A)	I_R max (μA)	I_R @V_R (V)	C_t typ. (pF)	2.9 x 2.5	2.0 x 2.1
Low-I_R High Speed	20	0.05	0.5	0.55	0.05	0.5	20	3.9		HN2S03FU
	10	0.05	0.63	1	0.05	0.5	10	3.2	1SS321	

Features	Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)						SL2 (SOD-962)	CST2 (SOD-882)	SOD-923	ESC (SOD-523)	USC (SOD-323)
	V_R (V)	I_O (A)	V_F typ. (V)	V_F max (V)	V_F @I_F (A)	I_R max (μA)	I_R @V_R (V)	C_t typ. (pF)	Bottom View	Bottom View			
									0.62 x 0.32	1.0 x 0.6	1.0 x 0.6	1.6 x 0.8	2.5 x 1.25
Standard	40	0.1	0.54	0.6	0.1	5	40	11				CES388 #	CUS357 #
			0.56	0.62	0.1	5	40	15		1SS417CT	1SS417		
	30	0.2	0.52	0.6	0.2	5	30	to 17		CTS520		CES520 #	CUS520 #
			0.45	0.5	0.2	30	30	to 26		CTS521		CES521	CUS521 #
		0.1	0.38	0.5	0.1	50	30	15		1SS416CT	1SS416		
			0.51	0.62	0.1	0.7	30	8.2	DSR01S30SL				
			0.41	0.5	0.1	50	30	9.3	DSF01S30SL				
	20	0.3	0.38	0.45	0.3	50	20	46					1SS404
		0.2	0.42	0.5	0.2	50	20	20				1SS424	
	10	0.1	0.35	0.5	0.1	20	10	20				1SS389 #	1SS367 #

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Schottky Barrier Diodes (SBDs)

Package Dimensions (unit: mm)

Features	Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)						VESM (SOT-723)	SSM (SOT-416)	USM (SOT-323)	S-Mini (SOT-346)	SOT23 (SOT-23)
	V_R (V)	I_O (A)	V_F typ. (V)	V_F max (V)	V_F @I_F (A)	I_R max (μA)	I_R @V_R (V)	C_t typ. (pF)	1.2 x 1.2	1.6 x 1.6	2.0 x 2.1	2.9 x 2.5	2.9 x 2.4
Standard	40	0.1	0.54	0.6	0.1	5	40	18			1SS322	1SS294	
											1SS393	1SS392	
												1SS396 #	
			0.56	0.62	0.1	5	40	15		1SS423			
	30	0.2	0.45	0.58	0.1	2	25	-					TBAT54
													TBAT54C
													TBAT54S
													TBAT54A
		0.1	0.38	0.5	0.1	50	30	15		1SS422			
	20	0.3	0.38	0.45	0.3	50	20	46			1SS401		
	10	0.1	0.35	0.5	0.1	20	10	20			1SS395	1SS394	
									1SS385FV	1SS385	1SS378	1SS377	
											1SS372	1SS374	

Features	Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)						ESV (SOT-553)	US6 (SOT-363)	SM6 (SOT-26)
	V_R (V)	I_O (A)	V_F typ. (V)	V_F max (V)	V_F @I_F (A)	I_R max (μA)	I_R @V_R (V)	C_t typ. (pF)	1.6 x 1.6	2.0 x 2.1	2.9 x 2.8
Standard	40	0.1	0.54	0.6	0.1	5	40	18	HN2S02JE	HN2S02FU	
	20	0.2	0.36	0.42	0.2	50	20	46		HN2S04FU	
	10	0.1	0.35	0.5	0.1	20	10	20		HN2S01FU	HN2S01F

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Switching Diodes

Package Dimensions (unit: mm)

Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)		CST2 (SOD-882)	SOD-923	ESC (SOD-523)	USC (SOD-323)	CST3 (SOT-883)	VESM (SOT-723)	SSM (SOT-416)	USM (SOT-323)	SOT23 (SOT-23)
				Bottom View				Bottom View				
V_R (V)	I_O (mA)	C_t typ. (pF)	t_{rr} typ. (ns)	1.0 x 0.6	1.0 x 0.6	1.6 x 0.8	2.5 x 1.25	1.0 x 0.6	1.2 x 1.2	1.6 x 1.6	2.0 x 2.1	2.9 x 2.4
80	80	0.5	1.6							1SS362		
	100	0.3	1.6		1SS427							
		0.5	1.6	1SS387CT		1SS387 #	1SS352 #					
		0.9	1.6					1SS361CT	1SS361FV #	1SS361 #	1SS301 #	
									1SS362FV #		1SS302A #	
		2	-			1SS307E #						
		2.2	1.6							1SS360 #	1SS300 #	
	215	0.9	1.6									TBAS16
												TBAW56
100	150	0.9	4 (max)								BAV99W	
	215	0.9	4 (max)									BAV70
			3 (max)									BAV99
	250	0.35	3 (max)			BAS516	BAS316					
		0.5	3 (max)			1N4148WT☆	1N4148WS☆					
200	100	1.5	10				1SS403 #				1SS370	
			60 (max)			1SS403E						
400	100	2.5	0.5								1SS397	

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☆ New Products

Switching Diodes

Package Dimensions (unit: mm)

Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)		S-Mini (SOT-346)	ESV (SOT-553)	USV (SOT-353)	SMV (SOT-25)	ES6 (SOT-563)	US6 (SOT-363)	SM6 (SOT-26)
										
V_R (V)	I_O (mA)	C_t typ. (pF)	t_{rr} typ. (ns)	2.9 x 2.5	1.6 x 1.6	2.0 x 2.1	2.9 x 2.8	1.6 x 1.6	2.0 x 2.1	2.9 x 2.8
30	100	3	-	1SS307 						
80	80	0.5	1.6						HN2D01FU # 	HN2D01F 
									HN2D02FU # 	
	100	0.5	1.6		HN2D01JE 					
		0.9	1.6	1SS184 # 		HN4D02JU 	1SS309 			
				1SS226 # 				HN1D02FE 	HN1D02FU # 	HN1D02F 
				1SS196 # 						
				1SS193 # 						
		2.2	1.6	1SS190 # 		HN4D01JU 	1SS308 			
				1SS187 # 				HN1D01FE 	HN1D01FU # 	HN1D01F 
				1SS181 # 						
		3	-	1SS379 # 						
		Q1 / 2 = 0.9 Q3 / 4 = 2.2	1.6						HN1D03FU # 	HN1D03F 
200	100	1.5	10	1SS250 						
400	100	2.5	0.5	1SS398 						HN2D03F 
		4.3	0.5					HN1D05FE ☆ 		

☆ New Products
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TVS Diodes (ESD Protection Diodes)

Package Dimensions (unit: mm)

Application		Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)			SL2 (SOD-962)	CST2 (SOD-882)	SOD-923	ESC (SOD-523)
							Bottom View  0.62 x 0.32	Bottom View  1.0 x 0.6	 1.0 x 0.6	 1.6 x 0.8
		V_{ESD} IEC61000-4-2 (kV)	I_{PP} tp = 8 / 20 µs (A)	V_{RWM} max (V)	C_t typ. (pF)	R_{DYN} typ. (Ω)				
Bi-directional	USB3.1 / Thunderbolt™ / RF antenna	±20	2.5	3.3	0.3	0.5	DF2B5M5SL	DF2B5M5CT		
		±20	2.5	5	0.3	0.5	DF2B6M5SL	DF2B6M5CT		
		±20	2	3.6	0.2	0.5 to 0.8	DF2B5M4SL	DF2B5M4CT		
		±20	2	5.5	0.2	0.5 to 0.8	DF2B6M4SL	DF2B6M4CT		
		±16	2	3.6	0.15	0.7	DF2B5M4ASL			
		±15	2	5.5	0.15	0.7	DF2B6M4ASL			
		±15	1	11	0.2	0.65	DF2B12M4SL			
		±15	0.5	18.5	0.2	0.2	DF2B20M4SL			
		±15	0.5	24	0.2	0.2	DF2B26M4SL			
		±12	2.5	5.5	0.1	0.7	DF2B7M3SL			
		±12	2	5	0.2	1	DF2B7M2SL ●			
		±12	2.5	5	0.3	0.8		DF2B6.8M1ACT		
		±8	2	5.5	0.12	0.7	DF2B6M4BSL			
	General Purpose / Audio / SIM Card	±30	27	5.5	45	0.1		DF2B7PCT		
		±30	4	5.5	8.5	0.2	DF2B7ASL	DF2B7ACT	DF2B7AFS	DF2B7AE
		±30	7.3	5.5	12	0.2	DF2B7BSL			
		±30	27	3.6	41	0.1		DF2B5PCT		
		±23	8	3.3	11	0.2	DF2B5BSL			
		±17	3	5.3	6	0.3	DF2B7SL			
		±17	5.5	3.3	7.2	0.25	DF2B5SL			
		±8	-	5	15	-				DF2B6.8E #
Uni-directional	USB3.1 / Thunderbolt™ / RF antenna (NFC)	±20	2	3.6	0.35 to 0.45	0.3 to 0.35	DF2S5M4SL	DF2S5M4CT	DF2S5M4FS	
		±20	2	5.5	0.35 to 0.45	0.3 to 0.35	DF2S6M4SL	DF2S6M4CT	DF2S6M4FS	
		±20	2.5	3.3	0.6	0.3	DF2S5M5SL	DF2S5M5CT		
		±20	2.5	5	0.6	0.3	DF2S6M5SL	DF2S6M5CT		
	USB2.0	±12	3	5	to 0.5	0.35	DF2S7MSL ●		DF2S6.8MFS	
	General Purpose / Audio / SIM Card	±30	2.5	1.5	45	0.2	DF2S5.1ASL			
		±30	2.5	3.5	40	0.25	DF2S5.6ASL			
		±30	2.5	5	32	0.3	DF2S6.2ASL			
		±30	2.5	5	25	0.5	DF2S6.8ASL			
		±30	2.5	6.5	20	0.8	DF2S8.2ASL			
		±30	2.5	8	16	0.5	DF2S10ASL ☆			
		±20	2.5	9	13	1.5	DF2S12ASL ☆			
		±12	2.5	12	10	0.6	DF2S16ASL			
		±12	2.5	15	9.5	1.25	DF2S20ASL ☆			
		±10	2.5	19	8.5	1.5	DF2S24ASL ☆			
		±8	2.5	23	7.5	4	DF2S30ASL ☆			

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☆ New Products, # AEC-Q101 qualified
● Recommended Another New Product
DF2S7MSL → DF2S6M5SL , DF2B7M2SL → DF2B6M4SL

TVS Diodes (ESD Protection Diodes)

Package Dimensions (unit: mm)

Application		Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)			DFN10 Bottom View 2.5 x 1.0
		V_{ESD} IEC61000-4-2 (kV)	I_{PP} tp = 8 / 20 µs (A)	V_{RWM} max (V)	C_t typ. (pF)	R_{DYN} typ. (Ω)	G
Bi-directional	USB3.1 / Thunderbolt™ / RF antenna	±8	-	5	0.3	0.9	DF10G7M1N
		±20	2	3.6	0.2	0.5 to 0.8	DF10G5M4N
		±20	2	5.5	0.2	0.5 to 0.8	DF10G6M4N

Application		Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)			USC (SOD-323) 2.5 x 1.25	SSM (SOT-416) 1.6 x 1.6	USM (SOT-323) 2.0 x 2.1	UDFN6B (SOT-1220) Bottom View 2.0 x 2.0
		V_{ESD} IEC61000-4-2 (kV)	I_{PP} tp = 8 / 20 µs (A)	V_{RWM} max (V)	C_t typ. (pF)	R_{DYN} typ. (Ω)				
Bi-directional	General Purpose / Audio / SIM Card	±30	4	5.5	8.5	0.2	DF2B7AFU			
	Automotive's CAN/LIN	±30	2.5	12	9	0.8	DF2B18FU #		DF3D18FU #	
		±25	3	24	9	1.1	DF2B29FU #		DF3D29FU #	
		±20	2.5	28	6.5	1.5	DF2B36FU #		DF3D36FU #	
Uni-directional	USB2.0	±8	-	5	0.5	-		DF3D6.8MS		
	Power Supply USB_V_{BUS}	±30	80	5.5	600	0.08	DF2S6P2FU			
		±30	60	10	280	0.08	DF2S12P2FU			
		±30	50	12.6	270	0.08	DF2S14P2FU			
		±30	14	21	160	0.13	DF2S23P2FU			
		±30	110	22	-	0.01				DF6S25P3NU

Thunderbolt™ is a trademark of Intel Corporation or its subsidiaries.
AEC-Q101 qualified

TVS Diodes (ESD Protection Diodes)

Package Dimensions (unit: mm)

Application	Absolute Maximum Ratings	Electrical Characteristics (Ta = 25 °C)			CST2 (SOD-882)	SOD-923	USC (SOD-323)
					Bottom View		
					1.0 x 0.6	1.0 x 0.6	2.5 x 1.25
	V_{ESD} IEC61000-4-2 (kV)	V_Z min (V)	C_t typ. (pF)	Z_Z max (Ω)			
Uni-directional General-Purpose / SIM Card / Power-Supply	±30	4.8	45	70		DF2S5.1FS	
	±30	5.3	40	30	DF2S5.6CT	DF2S5.6FS	
	±30	5.8	32	30	DF2S6.2CT	DF2S6.2FS	
	±30	6.4	25	30	DF2S6.8CT	DF2S6.8FS	
	±30	7.7	20	30	DF2S8.2CT	DF2S8.2FS	
	±30	9.4	16	30		DF2S10FS	
	±20	11.4	15	10 (typ.)			DF2S12FU
	±20	11.4	15	25		DF2S12FS	
	±12	15.3	10	35	DF2S16CT	DF2S16FS	
	±12	18.8	9	to 55	DF2S20CT	DF2S20FS	
	±10	22.8	8.5	70		DF2S24FS	
	±8	28	7.2	75	DF2S30CT		
	±8	28	7	150		DF2S30FS	

Application	Absolute Maximum Ratings	Electrical Characteristics (Ta = 25 °C)			CST3 (SOT-883)	VESM (SOT-723)	USM (SOT-323)	S-Mini (SOT-346)	ESV (SOT-553)	USV (SOT-353)	SMV (SOT-25)	US6 (SOT-363)
					Bottom View							
					1.0 x 0.6	1.2 x 1.2	2.0 x 2.1	2.9 x 2.5	1.6 x 1.6	2.0 x 2.1	2.9 x 2.8	2.0 x 2.1
	V_{ESD} IEC61000-4-2 (kV)	V_Z min (V)	C_t typ. (pF)	Z_Z max (Ω)								
Uni-directional General-Purpose / SIM Card / Power-Supply	±30	5.3	65	40		DF3A5.6FV#	DF3A5.6FU	DF3A5.6F	DF5A5.6JE	DF5A5.6FU	DF5A5.6F	
	±30	5.8	55	30		DF3A6.2FV#	DF3A6.2FU	DF3A6.2F	DF5A6.2JE	DF5A6.2FU	DF5A6.2F	
	±30	6.4	45	25	DF3A6.8CT	DF3A6.8FV#	DF3A6.8FU	DF3A6.8F	DF5A6.8JE	DF5A6.8FU	DF5A6.8F	DF6A6.8FU
	±30	5.3	29	40					DF5A5.6CJE	DF5A5.6CFU		
	±30	5.8	25	30					DF5A6.2CJE	DF5A6.2CFU		
	±25	6.4	23	25					DF5A6.8CJE	DF5A6.8CFU		
	±8	5.3	8	50			DF3A5.6LFU		DF5A5.6LJE	DF5A5.6LFU		
	±8	5.3	8	3 (typ.)		DF3A5.6LFV#						
	±8	5.9	6.5	50		DF3A6.2LFV#	DF3A6.2LFU		DF5A6.2LJE	DF5A6.2LFU		
	±8	6.5	to 6	50	DF3A6.8LCT	DF3A6.8LFV#	DF3A6.8LFU		DF5A6.8LJE	DF5A6.8LFU	DF5A6.8LF	

AEC-Q101 qualified

Zener Diodes for Over Voltage Protection

Package Dimensions (unit: mm)

General type

Application	Electrical Characteristics (Ta = 25 °C)					CST2 (SOD-882)	ESC (SOD-523)	USC (SOD-323)	USM (SOT-323)
						Bottom View			
						1.0 x 0.6	1.6 x 0.8	2.5 x 1.25	2.0 x 2.1
						P_D = 150 mW*	P_D = 150 mW*	P_D = 200 mW*	P_D = 150 mW*
	V_Z typ. (V)	V_Z Range (V)	I_Z (mA)	I_R max (μA)	V_R (V)				
Uni-directional General-Purpose / SIM Card / Power-Supply	5.6	5.3 to 6	5	1	3.5	CTZ5V6 ★	CEZ5V6	CUZ5V6	MUZ5V6
	6.2	5.8 to 6.6	5	2.5	5	CTZ6V2 ★	CEZ6V2	CUZ6V2	MUZ6V2
	6.8	6.4 to 7.2	5	1.5	5.5	CTZ6V8 ★	CEZ6V8	CUZ6V8	MUZ6V8
	7.5	7 to 7.9	5	0.1	6	CTZ7V5 ★	CEZ7V5 ☆	CUZ7V5 ☆	MUZ7V5 ☆
	8.2	7.7 to 8.7	5	0.1	7	CTZ8V2 ★	CEZ8V2	CUZ8V2	MUZ8V2
	9.1	8.5 to 9.6	5	0.1	7.5	CTZ9V1 ★	CEZ9V1 ☆	CUZ9V1 ☆	MUZ9V1 ☆
	10	9.4 to 10.6	5	0.1	8	CTZ10V ★	CEZ10V ☆	CUZ10V ☆	MUZ10V ☆
	11	10.4 to 11.6	5	0.1	9	CTZ11V ★	CEZ11V ☆	CUZ11V ☆	MUZ11V ☆
	12	11.4 to 12.6	5	0.1	10	CTZ12V ★	CEZ12V	CUZ12V	MUZ12V
	13	12.4 to 14.1	5	0.1	11	CTZ13V ★	CEZ13V ☆	CUZ13V ☆	MUZ13V ☆
	15	13.8 to 15.6	5	0.1	12	CTZ15V ★	CEZ15V ☆	CUZ15V ☆	MUZ15V ☆
	16	15.3 to 17.1	5	0.1	14	CTZ16V ★	CEZ16V	CUZ16V	MUZ16V
	18	16.8 to 19.1	5	0.1	16	CTZ18V ★	CEZ18V ☆	CUZ18V ☆	MUZ18V ☆
	20	18.8 to 21.2	5	0.1	17.6	CTZ20V ★	CEZ20V	CUZ20V	MUZ20V
	22	20.8 to 23.3	5	0.1	18	CTZ22V ★	CEZ22V ☆	CUZ22V ☆	MUZ22V ☆
	24	22.8 to 25.6	5	0.1	19	CTZ24V ★	CEZ24V	CUZ24V	MUZ24V
	27	25.1 to 28.9	2	0.1	23	CTZ27V ★	CEZ27V ☆	CUZ27V ☆	MUZ27V ☆
	30	28 to 32	2	0.1	27	CTZ30V ★	CEZ30V	CUZ30V	MUZ30V
	33	31 to 35	2	0.1	30	CTZ33V ★	CEZ33V ☆	CUZ33V ☆	MUZ33V ☆
	36	34 to 38	2	0.1	32.5	CTZ36V ★	CEZ36V	CUZ36V	MUZ36V
	56	52 to 60	2	0.1	50			CUZ56V ☆	
	62	58 to 66	2	0.1	55			CUZ62V ☆	
	68	64 to 72	2	0.1	60			CUZ68V ☆	
	72	70 to 79	2	0.1	66			CUZ72V ☆	

Application	Electrical Characteristics (Ta = 25 °C)					S-Mini (SOT-346)	SOT23 (SOT-23)
						2.9 x 2.5	2.9 x 2.4
						P_D = 200 mW*	P_D = 320 mW*
	V_Z typ. (V)	V_Z Range (V)	I_Z (mA)	I_R max (μA)	V_R (V)		
Uni-directional General-Purpose / SIM Card / Power-Supply	5.6	5.3 to 6	5	1	3.5	MSZ5V6	MKZ5V6
	6.2	5.8 to 6.6	5	2.5	5	MSZ6V2	MKZ6V2
	6.8	6.4 to 7.2	5	1.5	5.5	MSZ6V8	MKZ6V8
	7.5	7 to 7.9	5	0.1	6	MSZ7V5 ☆	MKZ7V5 ☆
	8.2	7.7 to 8.7	5	0.1	7	MSZ8V2	MKZ8V2
	9.1	8.5 to 9.6	5	0.1	7.5	MSZ9V1 ☆	MKZ9V1 ☆
	10	9.4 to 10.6	5	0.1	8	MSZ10V ☆	MKZ10V ☆
	11	10.4 to 11.6	5	0.1	9	MSZ11V ☆	MKZ11V ☆
	12	11.4 to 12.6	5	0.1	10	MSZ12V	MKZ12V
	13	12.4 to 14.1	5	0.1	11	MSZ13V ☆	MKZ13V ☆
	15	13.8 to 15.6	5	0.1	12	MSZ15V ☆	MKZ15V ☆
	16	15.3 to 17.1	5	0.1	14	MSZ16V	MKZ16V
	18	16.8 to 19.1	5	0.1	16	MSZ18V ☆	MKZ18V ☆
	20	18.8 to 21.2	5	0.1	17.6	MSZ20V	MKZ20V
	22	20.8 to 23.3	5	0.1	18	MSZ22V ☆	MKZ22V ☆
	24	22.8 to 25.6	5	0.1	19	MSZ24V	MKZ24V
	27	25.1 to 28.9	2	0.1	23	MSZ27V ☆	MKZ27V ☆
	30	28 to 32	2	0.1	27	MSZ30V	MKZ30V
	33	31 to 35	2	0.1	30	MSZ33V ☆	MKZ33V ☆
	36	34 to 38	2	0.1	32.5	MSZ36V	MKZ36V

☆ New Products, ★ Under Development (The specification is subject to change without notice.)
* Please refer to the data sheet for the conditions of the measurement board. ,# AEC-Q101 qualified

General type (For Automotive)

Application	Electrical Characteristics (Ta = 25 °C)					ESC (SOD-523)	USC
						 1.6 x 0.8	 2.5 x 1.25
						P_D = 150 mW*	P_D = 200 mW*
	V_Z typ. (V)	V_Z Range (V)	I_Z (mA)	I_R max (μA)	V_R (V)		
Uni-directional General-Purpose / SIM Card / Power-Supply	5.6	5.3 to 6	5	1	2.5	XCEZ5V6 ☆ #	XCUZ5V6 ☆ #
	6.2	5.8 to 6.6	5	1	3	XCEZ6V2 ☆ #	XCUZ6V2 ☆ #
	6.8	6.4 to 7.2	5	0.5	3.5	XCEZ6V8 ☆ #	XCUZ6V8 ☆ #
	7.5	7 to 7.9	5	0.5	4	-	XCUZ7V5 ☆ #
	7.5	7 to 7.9	5	0.1	4	XCEZ7V5 ☆ #	-
	8.2	7.7 to 8.7	5	0.1	5	XCEZ8V2 ☆ #	XCUZ8V2 ☆ #
	9.1	8.5 to 9.6	5	0.1	6	XCEZ9V1 ☆ #	XCUZ9V1 ☆ #
	10	9.4 to 10.6	5	0.1	7	XCEZ10V ☆ #	XCUZ10V ☆ #
	11	10.4 to 11.6	5	0.1	8	XCEZ11V ☆ #	XCUZ11V ☆ #
	12	11.4 to 12.6	5	0.1	9	XCEZ12V ☆ #	XCUZ12V ☆ #
	13	12.4 to 14.1	5	0.1	10	XCEZ13V ☆ #	XCUZ13V ☆ #
	15	13.8 to 15.6	5	0.1	11	XCEZ15V ☆ #	XCUZ15V ☆ #
	16	15.3 to 17.1	5	0.1	12	XCEZ16V ☆ #	XCUZ16V ☆ #
	18	16.8 to 19.1	5	0.1	13	XCEZ18V ☆ #	XCUZ18V ☆ #
	20	18.8 to 21.2	5	0.1	15	XCEZ20V ☆ #	XCUZ20V ☆ #
	22	20.8 to 23.3	5	0.1	17	XCEZ22V ☆ #	XCUZ22V ☆ #
	24	22.8 to 25.6	5	0.1	19	XCEZ24V ☆ #	XCUZ24V ☆ #
	27	25.1 to 28.9	2	0.1	21	XCEZ27V ☆ #	XCUZ27V ☆ #
	30	28 to 32	2	0.1	23	XCEZ30V ☆ #	XCUZ30V ☆ #
	33	31 to 35	2	0.1	25	XCEZ33V ☆ #	XCUZ33V ☆ #
	36	34 to 38	2	0.1	27	XCEZ36V ☆ #	XCUZ36V ☆ #

☆ New Products
* Please refer to the data sheet for the conditions of the measurement board.
# AEC-Q101 qualified

Power type

Application	Electrical Characteristics (Ta = 25 °C)					US2H (SOD-323HE)
						 2.5 x 1.4
						P_D = 500 mW*
	V_Z typ. (V)	V_Z Range (V)	I_Z (mA)	I_R max (μA)	V_R (V)	
Uni-directional General-Purpose / SIM Card / Power-Supply	5.6	5.3 to 6	10	10	3.5	CUHZ5V6
	6.2	5.8 to 6.6	10	10	5	CUHZ6V2
	6.8	6.4 to 7.2	10	0.5	5.5	CUHZ6V8
	8.2	7.7 to 8.7	10	0.1	7	CUHZ8V2
	12	11.4 to 12.6	10	0.1	10	CUHZ12V
	16	15.3 to 17.1	10	0.1	14	CUHZ16V
	20	18.8 to 21.2	10	0.1	17.6	CUHZ20V
	24	22.8 to 25.6	10	0.1	19	CUHZ24V
	30	28 to 32	10	0.1	27	CUHZ30V
	36	34 to 38	9	0.1	32.5	CUHZ36V
	56	52 to 60	2	0.1	50	CUHZ56V ☆
	62	58 to 66	2	0.1	55	CUHZ62V ☆
	68	64 to 72	2	0.1	60	CUHZ68V ☆
	72	70 to 79	2	0.1	66	CUHZ72V ☆

Ultra Small type

Application	Electrical Characteristics (Ta = 25 °C)					SL2 (SOD-962)
						Bottom View  0.62 x 0.32
						P_D = 150 mW*
	V_Z typ. (V)	V_Z Range (V)	I_Z (mA)	I_R max (μA)	V_R (V)	
Uni-directional General-Purpose / SIM Card / Power-Supply	5.6	5.3 to 6	5	1	3.5	CSLZ5V6 ☆
	6.2	5.8 to 6.6	5	2.5	5	CSLZ6V2 ☆
	6.8	6.4 to 7.2	5	0.5	5	CSLZ6V8 ☆
	8.2	7.7 to 8.7	5	0.5	6.5	CSLZ8V2 ☆
	10	9.4 to 10.6	5	0.5	8	CSLZ10V ☆
	12	11.4 to 12.6	5	0.5	9	CSLZ12V ☆
	16	15.3 to 17.1	5	0.5	12	CSLZ16V ☆
	20	18.8 to 21.2	5	0.5	15	CSLZ20V ☆
	24	22.8 to 25.6	5	0.5	19	CSLZ24V ☆
	30	28 to 31.5	2	0.5	23	CSLZ30V ☆

☆ New Products
* Please refer to the data sheet for the conditions of the measurement board.

Part Naming Conventions

Diode (JEITA Registration Products)

1 S S 181

- Serial number : JEITA registration number.
- The kind of diode
  - S: Diode of general-purpose use, detection use, frequency conversion use, and switching use
  - V: Variable capacitance and PIN diode
- S stands for Semiconductor
- The value that subtracted 1 from the total number of terminals

Schottky Barrier Diodes

New Naming Conventions

CU S 05 F 30 A

- Revision or function category (A to Z)
- Voltage rating
  - Ex.) 30: 30 V
- Device type
  - Ex.) S: Super Low forward voltage F: Low forward voltage, R: Low leakage current
- Current rating
  - Ex.) 05: 0.5 A
- Pin count
  - Ex.) S: 2pin
- Package
  - Ex.) CU: USC, CE: ESC, CB: CST2B, CL: CL2E, CT: CST2

Old Naming Conventions

DS F 07 S 30 A U

- Package style : This letter shows the package style.
- Revision
- Voltage rating
  - Ex.) 30: 30 V, 15: 15 V
- Circuit configuration and number of pins
- Current rating
  - Ex.) 07: 0.7 A, 10: 1 A
- Device feature : This letter shows the feature of a device.
  - F: Low forward voltage type.
  - R: Low leakage current type.
- Schottky barrier diode.

TVS Diodes (ESD Protection Diodes)

DF 5 A 6.2 L FU

- Package suffix
- Series name
  - Ex.) L: Ultra-high-speed
- Reverse Breakdown Voltage (V_{BR})
- Internal configuration
  - Ex.) A: Common anode
- Pin count
- TVS Diodes (ESD Protection Diodes)

Zener Diodes for Over Voltage Protection

CU Z 6V8

- Zener voltage
  - Ex.) 6V8: 6.8 V
- The kind of diode
  - Z: Zener Diode (uni-directional type)
- Package
  - CU: USC
  - CUH: US2H
  - CE: ESC
  - MS: S-Mini
  - MU: USM
  - MK: SOT23
  - CSL: SL2

Note : The name of AEC-Q100 qualified product is XCUZxxx.

4. Power Management ICs

Low Dropout Regulators (LDO)

Package Dimensions (unit: mm)

WCSP4E	WCSP4F	SDFN4E	DFN4D	DFN4E	DFN4F	DFN5B	ESV (SOT-553)	UFV (SOT-353F)	SMV (SOT-25)	WCSP6F
Bottom View	Bottom View	Bottom View	Bottom View	Bottom View	Bottom View	Bottom View				Bottom View
										
0.645 x 0.645	0.645 x 0.645	0.8 x 0.8	1.0 x 1.0	1.0 x 1.0	1.0 x 1.0	1.2 x 1.2	1.6 x 1.6	2.0 x 2.1	2.9 x 2.8	1.2 x 0.8

CMOS LDO Regulators

Series Name / Part Number	Package	V_{OUT} typ. (V)	V_{IN} (V)	I_{OUT} (mA)	I_B typ. (μA)	Function							
						Over current protection	Auto discharge	Fast load transient response circuit	Thermal shutdown	Inrush current protection	Under voltage lockout	High PSRR	Control pin connection
TCR1HFxxB ☆	SMV	1.8 to 5	V_{OUT}+1 to 36	150	1	✓		✓	✓	✓			Pull up
TCR2ENxxx	SDFN4E	1 to 3.6	1.5 to 5.5	200	35	✓	✓						Pull down
TCR2LNxxx		0.8 to 3.6	1.5 to 5.5	200	1	✓	✓						Pull down
TCR2EExxx	ESV	1 to 5	1.5 to 5.5	200	35	✓	✓						Pull down
TCR2LExxx		0.8 to 3.6	1.5 to 5.5	200	1	✓	✓						Pull down
TCR2EFxxx	SMV	1 to 5	1.5 to 5.5	200	35	✓	✓						Pull down
TCR2LFxxx		0.8 to 3.6	1.5 to 5.5	200	1	✓	✓						Pull down
TCR3DGxxx	WCSP4E	1 to 4.5	1.75 to 5.5	300	65	✓	✓	✓	✓	✓			Pull down
TCR3LMxxA ☆	DFN4D	0.8 to 5	1.4 to 5.5	300	1.2	✓	✓	✓	✓				Pull down
TCR3DMxxA ☆		1 to 4.5	1.5 to 5.5	300	86	✓	✓	✓	✓	✓			Pull down
TCR3EMxxA ☆		0.8 to 5	1.3 to 5.5	300	35	✓	✓		✓				Pull down
TCR3DFxxx	SMV	1 to 4.5	1.8 to 5.5	300	65	✓	✓	✓	✓	✓			Pull down
TCR3UGxxxA	WCSP4F	0.8 to 5	1.5 to 5.5	300	0.34	✓	✓	✓	✓	✓			Pull down
TCR3UGxxxB			1.5 to 5.5	300	0.34	✓		✓	✓	✓			Pull down
TCR3UMxxxA	DFN4E	0.8 to 5	1.5 to 5.5	300	0.34	✓	✓	✓	✓	✓			Pull down
TCR3UFxxxA	SMV	0.8 to 5	1.5 to 5.5	300	0.34	✓	✓	✓	✓	✓			Pull down
TCR3UFxxxB			1.5 to 5.5	300	0.34	✓		✓	✓	✓			Pull down
TCR3RMxxxA	DFN4F	0.9 to 4.5	1.8 to 5.5	300	7	✓	✓	✓	✓	✓		✓	Pull down
TCR4DGxxx	WCSP4E	1 to 4.5	V_{OUT}+V_{DO} to 5.5	420	65	✓	✓	✓	✓	✓			Pull down
TCR5RGxxxA	WCSP4F	0.9 to 5	1.8 to 5.5	500	7	✓	✓	✓	✓	✓		✓	Pull down
TCR5FMxxA ☆	DFN4D	0.9 to 5	1.55 to 5.5	500	10	✓	✓	✓	✓	✓		✓	Pull down
TCR5BMxxxA	DFN5B	0.8 to 3.6	V_{OUT}+V_{DO} to V_{BIAS}	500	19	✓	✓	✓	✓	✓	✓	✓	Pull down
TCR8BMxxxA		0.8 to 3.6	V_{OUT}+V_{DO} to V_{BIAS}	800	20	✓	✓	✓	✓	✓	✓	✓	Pull down
TCR13AGADJ	WCSP6F	0.55 to 3.6 adjustable	V_{OUT}+0.1 V to V_{BIAS}	1300	56	✓	✓	✓	✓	✓	✓	✓	Pull down
TCR15AGxxx	WCSP6F	0.65 to 3.6	V_{OUT}+V_{DO} to V_{BIAS}	1500	25	✓	✓	✓	✓	✓	✓	✓	Pull down
TCR15AGADJ	WCSP6F	0.6 to 3.6 adjustable	V_{OUT}+V_{DO} to V_{BIAS}	1500	25	✓	✓	✓	✓	✓	✓	✓	Pull down

Bipolar LDO Regulators

Series Name	Package	V_{OUT} typ. (V)	V_{IN} (V)	I_{OUT} (mA)	I_B typ. (μA)	Function				
						Over current protection	Auto discharge	Fast load transient response circuit	Thermal shutdown	Control pin connection
TAR5SxxU	UFV	1.5 to 5	2.4 to 15	200	170	✓			✓	
TAR5Sxx	SMV	1.5 to 5	2.4 to 15	200	170	✓			✓	
TAR5SBxx						✓			✓	

☆ New Products

Load Switch ICs

Package Dimensions (unit: mm)

WCSP4D	WCSP4C	SMV (SOT-25)	WCSP6C	WCSP6E	DFN4A	WCSP4G
Bottom View	Bottom View		Bottom View	Bottom View	Bottom View	Bottom View
						
0.79 x 0.79	0.9 x 0.9	2.9 x 2.8	1.5 x 1.0	1.2 x 0.8	1.2 x 1.2	0.645 x 0.645

Part Number	Package	Operating voltage range (V)	Output current (A)	R_{ON} (1) typ. (mΩ)	R_{ON} (2) typ. (mΩ)	Function							Note
						Inrush current reduction (Slew Rate control)	Thermal shutdown	Over current protection	Auto discharge	Under voltage lockout	Reverse current block	Control pin connection (Active Level)	
TCK106AG	WCSP4D	1.1 to 5.5	1	176 @1.1 V, -0.2 A	34 @5 V, -0.5 A	✓						Pull down (H)	
TCK107AG						✓			✓			Pull down (H)	
TCK108AG						✓			✓			Open (L)	
TCK106AF	SMV		1	223 @1.1 V, -0.2 A	63 @5 V, -0.5 A	✓						Pull down (H)	
TCK107AF						✓			✓			Pull down (H)	
TCK108AF						✓			✓			Open (L)	
TCK111G	WCSP6C		3	8.5 @1.1 V, -1.5 A	8.3 @5 V, -1.5 A	✓	✓				True Reverse Current Blocking	Pull down (H)	
TCK112G						✓	✓		✓			Pull down (H)	
TCK126BG	WCSP4G	1 to 5.5	1	343 @1 V, -0.05 A	46 @5 V, -0.5 A	✓						Open (H)	Ultra small Iq 0.08 nA
TCK127BG						✓			✓			Open (H)	
TCK128BG						✓			✓			Open (L)	
TCK22921G	WCSP6E	1.1 to 5.5	2	136 @1.1 V, -0.5 A	25 @5 V, -0.5 A	4.5 µs			✓		✓	Pull down (H)	
TCK22922G						666 µs			✓		✓	Pull down (H)	
TCK22923G						1364 µs			✓		✓	Pull down (H)	
TCK22925G						3380 µs			✓		✓	Pull down (H)	
TCK22971G						4.5 µs					✓	Pull down (H)	
TCK22972G						666 µs					✓	Pull down (H)	
TCK22973G						1364 µs					✓	Pull down (H)	
TCK22974G						3380 µs					✓	Pull down (H)	
TCK22975G						666 µs					✓	Open (L)	
TCK22910G	WCSP6E	1.1 to 5.5	2	179 @1.1 V, -0.15 A	31 @5 V, -0.15 A	1400 µs	✓			✓	True Reverse Current Blocking	Open (L)	
TCK22911G						1400 µs	✓		✓	✓		Open (L)	
TCK22912G						1400 µs	✓			✓		Pull down (H)	
TCK22913G						1400 µs	✓		✓	✓		Pull down (H)	
TCK22946G	WCSP6E	1.1 to 5.5	0.4	179 @1.1 V, -0.15 A	31 @5 V, -0.15 A	50 µs	✓	400 mA	✓	✓	True Reverse Current Blocking	Pull down (H)	
TCK22951G			0.74			50 µs	✓	740 mA	✓	✓		Pull down (H)	
TCK2065G		1.4 to 5.5	1.11			50 µs	✓	1110 mA	✓	✓		Pull down (H)	
TCK1024G			1.54			50 µs	✓	1540 mA	✓	✓		Pull down (H)	
TCK22891G			0.4			50 µs	✓	400 mA	✓			Pull down (H)	
TCK22892G			0.74			50 µs	✓	740 mA	✓			Pull down (H)	
TCK22893G			1.11			50 µs	✓	1110 mA	✓			Pull down (H)	
TCK22894G			1.54			50 µs	✓	1540 mA	✓			Pull down (H)	
TCK206G	WCSP4C	0.75 to 3.6	2	18.4 @0.75 V, -1.5 A	18.1 @3.3 V, -1.5 A	✓					✓	Pull down (H)	
TCK207G						✓			✓		✓	Pull down (H)	
TCK208G						✓			✓		✓	Open (L)	
TCK207AN	DFN4A			21.5 @0.75 V, -1.5 A	21.5 @3.3 V, -1.5 A	✓			✓		✓	Pull down (H)	

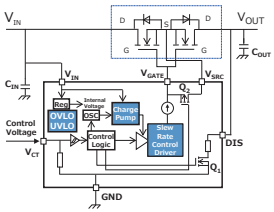
N-ch MOSFET Gate driver ICs with OVP function

Package Dimensions (unit: mm)

WCSP6E	WCSP6G
Bottom View  1.2 x 0.8	Bottom View  1.2 x 0.8

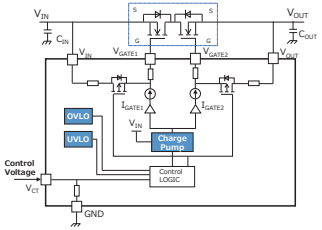
Part Number	Package	Operating voltage range (V)	Input quiescent current (ON state)	Gate drive voltage (1)	Gate drive voltage (2)	Function						Note
						Inrush current reduction	Under voltage lockout	Over voltage lock out (Typ.)	Auto discharge	Reverse current block	Control pin connection (Active Level)	
TCK401G	WCSP6E	2.7 to 28	121 µA typ. @V_{IN} = 5 V	4 V typ. @V_{IN} = 3 V	6.5 V typ. @V_{IN} = 5 V	✓	✓	✓ (28 V)	✓	Option (with external Back to Back MOSFET)	Pull down (H)	For N-ch Common Source MOSFET or Single High Side MOSFET
TCK402G											Pull down (L)	
TCK420G	WCSP6G	2.7 to 28	220 µA typ. @V_{IN} = 20 V	9.2 V typ. @V_{IN} = 2.7 V	10 V typ. @V_{IN} = 24 V	✓	✓	✓ (27.73 V)		Option (with external Back to Back MOSFET)	Pull down (H)	For N-ch Common Drain MOSFET or Single High Side MOSFET Recommended V_{IN} = 24 V
TCK421G	WCSP6G	2.7 to 28	220 µA typ. @V_{IN} = 20 V	9.2 V typ. @V_{IN} = 2.7 V	10 V typ. @V_{IN} = 20 V	✓	✓	✓ (23.26 V)		Option (with external Back to Back MOSFET)	Pull down (H)	For N-ch Common Drain MOSFET or Single High Side MOSFET Recommended V_{IN} = 20 V
TCK422G	WCSP6G	2.7 to 28	185 µA typ. @V_{IN} = 12 V	9.2 V typ. @V_{IN} = 2.7 V	10 V typ. @V_{IN} = 12 V	✓	✓	✓ (14.29 V)		Option (with external Back to Back MOSFET)	Pull down (H)	For N-ch Common Drain MOSFET or Single High Side MOSFET Recommended V_{IN} = 12 V
TCK423G	WCSP6G	2.7 to 28	140 µA typ. @V_{IN} = 12 V	5.6 V typ. @V_{IN} = 2.7 V	5.6 V typ. @V_{IN} = 12 V	✓	✓	✓ (14.29 V)		Option (with external Back to Back MOSFET)	Pull down (H)	For N-ch Common Drain MOSFET or Single High Side MOSFET Recommended V_{IN} = 12 V
TCK424G	WCSP6G	2.7 to 28	125 µA typ. @V_{IN} = 9 V	5.6 V typ. @V_{IN} = 2.7 V	5.6 V typ. @V_{IN} = 9 V	✓	✓	✓ (10.83 V)		Option (with external Back to Back MOSFET)	Pull down (H)	For N-ch Common Drain MOSFET or Single High Side MOSFET Recommended V_{IN} = 9 V
TCK425G	WCSP6G	2.7 to 28	100 µA typ. @V_{IN} = 5 V	5.6 V typ. @V_{IN} = 2.7 V	5.6 V typ. @V_{IN} = 5 V	✓	✓	✓ (6.31 V)		Option (with external Back to Back MOSFET)	Pull down (H)	For N-ch Common Drain MOSFET or Single High Side MOSFET Recommended V_{IN} = 5 V

Common Source



TCK40_G Application circuit example

Common Drain



TCK42_G Application circuit example

Power Multiplexer ICs

Package Dimensions (unit: mm)

WCSP9	WCSP16C
Bottom View  1.5 x 1.5	Bottom View  1.9 x 1.9

Part Number	Package	Operating voltage range (V)	Output current (A)	R_{ON} (1) typ. (mΩ) @Ta = 25 °C	R_{ON} (2) max (mΩ) @Ta = -40 to 85 °C	Function							FLAG monitored in auto selection mode	Note
						Inrush current reduction	Thermal shutdown	Under voltage lockout	Over voltage lockout	Auto discharge	Reverse current block	Control pin connection (Active Level)		
TCK301G	WCSP9	2.3 to 28	3	73 @4.5 V, -1 A	140 @4.5 V, -1 A	✓	✓	✓	6.6 V		✓	Pull up (H)	-	Single input Single output
TCK302G						✓	✓	✓	10.5 V		✓		-	
TCK303G						✓	✓	✓	15.5 V		✓		-	
TCK304G						✓	✓	✓	6.6 V		✓	Pull down (L)	-	
TCK305G						✓	✓	✓	10.5 V		✓		-	
TCK321G	WCSP16C	2.3 to 36	2	98 @4.5 V, -1 A	170 @4.5 V, -1 A	✓	✓	✓	V_{INA} = V_{INB} = 12 V		✓	Pull down	V_{INA}	Dual input Single output
TCK322G						✓	✓	✓	V_{INA} = V_{INB} = 15 V		✓		V_{INA}	
TCK323G						✓	✓	✓	V_{INA} = V_{INB} = 15 V		✓		V_{INB}	

eFuse ICs

WSON10B	WSON10	WSON8	TSOP6F
Bottom View	Bottom View	Bottom View	
			
3.0 x 3.0	3.0 x 3.0	2.0 x 2.0	2.9 x 2.8

Part Number	Package	Operating voltage range (V)	Output current (A)	R_{ON} typ. (mΩ) @Ta = 25 °C	R_{ON} max (mΩ) @Ta = -40 to 85 °C	Function								Note
						Inrush current reduction	Thermal shutdown	Over voltage Clamp	Auto discharge	Under voltage lockout	Reverse current blocking	Fault Response	Over current protection	
TCKE712BNL	WSON10	4.4 to 13.2	3.65	53 @12 V, -1 A	80 @12 V, -1 A	Slew rate control by External Capacitance	✓	Adjustable		✓	✓	Latched	Adjustable	FLAG Indicates
TCKE805NA	WSON10B	4.4 to 18	5	28 @5 V, -1.5 A	38 @5 V, -1.5 A		✓	6.04 V typ.	✓	✓	*	Auto-retry	Adjustable	
TCKE805NL							✓	6.04 V typ.	✓	✓	*	Latched	Adjustable	
TCKE812NA							✓	15.1 V typ.	✓	✓	*	Auto-retry	Adjustable	
TCKE812NL							✓	15.1 V typ.	✓	✓	*	Latched	Adjustable	
TCKE800NA							✓	None	✓	✓	*	Auto-retry	Adjustable	
TCKE800NL							✓	None	✓	✓	*	Latched	Adjustable	
TCKE903NA ☆	WSON8	2.7 to 23	4	34 @5 V, -1.5 A	52 @5 V, -1.5 A Ta = -40 to 125 °C	Slew rate control by External Capacitance	✓	3.87 V typ.	✓	✓		Auto-retry	Adjustable	FLAG Indicates
TCKE903NL ☆							✓	3.87 V typ.	✓	✓		Latched	Adjustable	
TCKE905ANA ☆							✓	5.7 V typ.	✓	✓		Auto-retry	Adjustable	
TCKE905NL ☆							✓	5.7 V typ.	✓	✓		Latched	Adjustable	
TCKE912NA ☆							✓	13.7 V typ.	✓	✓		Auto-retry	Adjustable	
TCKE912NL ☆							✓	13.7 V typ.	✓	✓		Latched	Adjustable	
TCKE920NA ☆							✓	22.2 V typ.	✓	✓		Auto-retry	Adjustable	
TCKE920NL ☆							✓	22.2 V typ.	✓	✓		Latched	Adjustable	
TCKE903QNA ☆							✓	3.87 V typ.	✓ (Quick Discharge)	✓		Auto-retry	Adjustable	
TCKE905QNA ☆							✓	5.7 V typ.	✓ (Quick Discharge)	✓		Auto-retry	Adjustable	
TCKE601RL ☆	TSOP6F	4.4 to 30	2.5	52 @24 V, -1.0 A	90 @24 V, -1.0 A	Slew rate control	✓	32 V typ.	✓	✓	Latched	Adjustable	FLAG Indicates	
TCKE601RA ☆							✓	32 V typ.	✓	✓	Auto-retry	Adjustable		
TCKE602RM ☆							✓	32 V typ.	✓	✓	Select MODE (Latched/ Auto-retry)	Adjustable	MODE	
TCKE603RL ☆							✓	32 V typ.	✓	✓	Latched	Adjustable	EN (Active H)	
TCKE603RA ☆							✓	32 V typ.	✓	✓	Auto-retry	Adjustable		

☆ New Products
* This function is supported when N-ch MOSFET is attached to the external terminal.

5. Linear ICs

Thermoflagger™ (Over Temperature Detection IC)

Package Dimensions (unit: mm)

ESV
(SOT-553)

1.6 x 1.6

	TCTH011AE ☆	TCTH012AE ☆	TCTH021AE ☆	TCTH022AE ☆	TCTH011BE ☆	TCTH012BE ☆	TCTH021BE ☆	TCTH022BE ☆
	Push-pull	Push-pull	Push-pull	Push-pull	Open-drain	Open-drain	Open-drain	Open-drain
Package	ESV	ESV	ESV	ESV	ESV	ESV	ESV	ESV
Supply Voltage	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V	1.7 to 5.5 V
Operation Temperature	-40 to 125 °C	-40 to 125 °C	-40 to 125 °C	-40 to 125 °C	-40 to 125 °C	-40 to 125 °C	-40 to 125 °C	-40 to 125 °C
PTCO output current (typ.)	1 µA	1 µA	10 µA	10 µA	1 µA	1 µA	10 µA	10 µA
FLAG signal latch function	-	included	-	included	-	included	-	included
Current Consumption (max)	2.6 µA	2.6 µA	16.5 µA	16.5 µA	2.6 µA	2.6 µA	16.5 µA	16.5 µA
High level output voltage @$I_{PTCGOOD}$ = -4 mA	3.03 V (min) @V_{DD} = 3.3 V	3.03 V (min) @V_{DD} = 3.3 V	3.03 V (min) @V_{DD} = 3.3 V	3.03 V (min) @V_{DD} = 3.3 V	-	-	-	-
Low level output voltage @$I_{PTCGOOD}$ = 4 mA	0.2 V (max) @V_{DD} = 3.3 V	0.2 V (max) @V_{DD} = 3.3 V	0.2 V (max) @V_{DD} = 3.3 V	0.2 V (max) @V_{DD} = 3.3 V	0.2 V (max) @V_{DD} = 3.3 V	0.2 V (max) @V_{DD} = 3.3 V	0.2 V (max) @V_{DD} = 3.3 V	0.2 V (max) @V_{DD} = 3.3 V

☆ New Products
"Thermoflagger™" is a trademark of Toshiba Electronic Devices & Storage Corporation.

Operational Amplifiers, Comparators

Package Dimensions (unit: mm)

MP6C	USV (SOT-353)	UFV (SOT-353F)	SMV (SOT-25)	US8 (SOT-765)	SM8 (SOT-505)
Bottom View 					
1.45 x 1.0	2.0 x 2.1	2.0 x 2.1	2.9 x 2.8	2.0 x 3.1	2.9 x 4.0

Operational Amplifiers

Type / Package		Bipolar	
		Standard	Low Noise Wide Band
Single	SMV	TA75S01F	TA75S558F
Dual	SM8	TA75W01FU	TA75W558FU
V_{CC}, V_{EE} / V_{DD}, V_{SS}		±6 or 12 V	±18 V
Test condition		V_{CC} = 5 V V_{EE} = GND	V_{CC} = 15 V V_{EE} = -15 V
I_{CC} / I_{DD} (max)		0.8 mA @Single 1.2 mA @Dual	4 mA @Single 6 mA @Dual
V_{IO} (max)		7 mV	6 mV
I_{sink} (typ.)		20 mA	40 mA
I_{source} (typ.)		40 mA	40 mA
G_V (typ.)		100 dB	100 dB
V_{NI} (typ.)			2.5 μVrms
SR (typ.)			1 V / μs
f_T (typ.)		0.3 MHz	3 MHz

Type / Package		CMOS						
		Low Voltage Operation	Standard	Low I_{DD}	Low I_{DD} I/O Full range	Ultra Low I_{DD} I/O Full range	Low Noise	Ultra Low Noise
Single	USV	TC75S51FU	TC75S54FU	TC75S55FU				
	UFV						TC75S63TU	TC75S67TU
	SMV	TC75S51F	TC75S54F	TC75S55F	TC75S103F	TC75S102F		
Dual	US8	TC75W51FK	TC75W54FK	TC75W55FK				
	SM8	TC75W51FU	TC75W54FU	TC75W55FU				
V_{CC}, V_{EE} / V_{DD}, V_{SS}		7 V	7 V	7 V	6 V	6 V	6 V	6 V
Test condition		V_{DD} = 3 V	V_{DD} = 3 V	V_{DD} = 3 V	V_{DD} = 3.3 V	V_{DD} = 1.5 V	V_{DD} = 3.3 V	V_{DD} = 3.3 V
I_{CC} / I_{DD} (max)		200 μA @Single 400 μA @Dual	200 μA @Single 400 μA @Dual	20 μA @Single 40 μA @Dual	165 μA	0.46 μA	650 μA	700 μA
V_{IO} (max)		10 mV	10 mV	10 mV	1.85 mV	1.3 mV	7 mV	3 mV
I_{sink} (typ.)			700 μA	450 μA	10 mA	0.4 mA	1.5 mA (min)	3.5 mA
I_{source} (typ.)			200 μA	20 μA	10 mA	0.6 mA	1.5 mA (min)	2.5 mA
G_V (typ.)		70 dB	70 dB	70 dB	125 dB	139 dB	100 dB	100 dB
V_{NI} (typ.)							7.8 nV / $\sqrt{Hz}$	6 nV / $\sqrt{Hz}$
SR (typ.)		0.5 V / μs	0.7 V / μs	0.08 V / μs	0.4 V / μs	0.37 V / ms	1 V / μs	1 V / μs
f_T (typ.)		0.6 MHz	0.9 MHz	0.16 MHz	0.36 MHz	0.5 kHz	3.5 MHz	3.5 MHz

Comparators

Type / Package		Bipolar	CMOS						
			Push pull				Open drain		
		Standard	Full-range input/output	Low I_{DD}	High speed	Ultra High speed	Low I_{DD}	High speed	Ultra High speed
Single	MP6C		TC75S70L6X						
	USV			TC75S56FU	TC75S57FU		TC75S58FU	TC75S59FU	
	SMV	TA75S393F		TC75S56F	TC75S57F		TC75S58F	TC75S59F	
Dual	US8			TC75W56FK	TC75W57FK	TC75W71FU ☆	TC75W58FK	TC75W59FK	TC75W73FU*★
	SM8	TA75W393FU		TC75W56FU	TC75W57FU	TC75W72FU* ★	TC75W58FU	TC75W59FU	
V_{CC}, V_{EE} / V_{DD}, V_{SS}		±18 or 36 V	±3 or 6 V	±3.5 or 7 V	±3.5 or 7 V	6 V	±3.5 or 7 V	±3.5 or 7 V	6 V
Test condition		V_{CC} = 5 V	V_{DD} = 3 V	V_{DD} = 5 V	V_{DD} = 5 V	V_{DD} = 5V	V_{DD} = 5 V	V_{DD} = 5 V	V_{DD} = 5V
I_{CC} / I_{DD} (max)		0.8 mA @ Single 2 mA @Dual	35 μA	22 μA @ Single 44 μA @Dual	220 μA @ Single 440 μA @Dual	508 μA @ V_{OUT}=High 761 μA @ V_{OUT}=Low	22 μA @ Single 44 μA @Dual	220 μA @ Single 440 μA @Dual	508 μA @ V_{OUT}=High 761 μA @ V_{OUT}=Low
I_{sink} (typ.)		16 mA	18 mA	25 mA	25 mA	18 mA	25 mA	25 mA	18 mA
I_{source} (typ.)			15 mA	21 mA	21 mA	16 mA			
G_V (typ.)		200 V / mV		94 dB	94 dB		94 dB	94 dB	66 dB
t_{rsp}, t_{PLH} (typ.)		1.3 μs	400 ns	680 ns	140 ns	23 ns	800 ns	200 ns	10 ns

☆ New Products
★ Under Development (The specification is subject to change without notice.)
* Input Hysteresis function

6. Sensors

Magnetic Sensors

Package Dimensions (unit: mm)

UFV (SOT-353F)	SOT-23F
	
2.0 x 2.1	2.9 x 2.4

			TCS40DPR	TCS40DLR	TCS30DPU	TCS30DLU	TCS30SPU	TCS30NPU
			Push pull	Open drain	Push pull	Open drain	Push pull	
Package			SOT-23F		UFV			
Detective Polarity			S&N		S&N		S	N
Electrical Characteristics	Supply Voltage		2.3 to 5.5 V		2.3 to 3.6 V			
	Magnetic Flux Density	Operating Point (V_{CC} = 2.3 to 3.6 V)	B_{ON} = 3.4 mT (typ.)		B_{ON} = 1.8 mT (typ.)			
		Releasing Point (V_{CC} = 2.3 to 3.6 V)	B_{OFF} = 2 mT (typ.)		B_{OFF} = 0.8 mT (typ.)			
		Hysteresis (V_{CC} = 2.3 to 5 V)	B_H = 1.4 mT (typ.)		B_H = 1 mT (typ.)			
	Supply Current *	Average Current (V_{CC} = 2.3 V)	7.3 µA (typ.)		8.5 µA (typ.)			
	Operating Frequency (V_{CC} = 2.3 to 5 V)		25 Hz (typ.)		25 Hz (typ.)			

* Supply current is pulsed periodically by internal circuit.

7. General Purpose Logic ICs

7-1 One-Gate Logic ICs (L-MOS)

Package Dimensions (unit: mm)

VHS Series

General Specification

Supply voltage range	: 2 to 5.5 V
Output current	: ± 8 mA ($@V_{CC}$ = 4.5 V)
Propagation delay time	: 3.7 nsec typ. ($@V_{CC}$ = 5 V)
Quiescent supply current	: 2 µA max ($@V_{CC}$ = 5.5 V, Ta = 25 °C)
Operating temperature	: T_{opr} = -40 to 125 °C

USV (SOT-353)	SMV (SOT-25)	US8 (SOT-765)	SM8 (SOT-505)
			
2.0 x 2.1	2.9 x 2.8	2.0 x 3.1	2.9 x 4.0

Function			Part Number					
			USV		SMV		US8	SM8
			-	TTL Input	-	TTL Input		
Gate / Buffer	NAND		TC7SH00FU #	TC7SET00FU #	TC7SH00F	TC7SET00F	TC7WH00FK # Dual-gate	TC7WH00FU Dual-gate
	AND		TC7SH08FU #	TC7SET08FU #	TC7SH08F	TC7SET08F	TC7WH08FK # Dual-gate	TC7WH08FU Dual-gate
		Open-drain	TC7SH09FU #		TC7SH09F			
	NOR		TC7SH02FU #	TC7SET02FU #	TC7SH02F	TC7SET02F	TC7WH02FK # Dual-gate	TC7WH02FU Dual-gate
	OR		TC7SH32FU #	TC7SET32FU #	TC7SH32F	TC7SET32F	TC7WH32FK # Dual-gate	TC7WH32FU Dual-gate
	Exclusive-OR		TC7SH86FU #		TC7SH86F			
	Inverter		TC7SH04FU #	TC7SET04FU #	TC7SH04F	TC7SET04F	TC7WH04FK # Triple-gate	TC7WH04FU Triple-gate
		Unbuffered	TC7SHU04FU #		TC7SHU04F		TC7WHU04FK # Triple-gate	TC7WHU04FU Triple-gate
		Schmitt	TC7SH14FU #	TC7SET14FU #	TC7SH14F	TC7SET14F	TC7WH14FK # Triple-gate	TC7WH14FU Triple-gate
	Buffer	Schmitt	TC7SH17FU #	TC7SET17FU #	TC7SH17F	TC7SET17F	TC7WH17FK # Triple-gate	TC7WH17FU Triple-gate
	Non-Inverter		TC7SH34FU #	TC7SET34FU #	TC7SH34F	TC7SET34F	TC7WH34FK # Triple-gate	TC7WH34FU Triple-gate
	3-state	Buffer	TC7SH125FU #	TC7SET125FU #	TC7SH125F	TC7SET125F	TC7WH125FK # Dual-gate	TC7WH125FU Dual-gate
			TC7SH126FU #	TC7SET126FU #	TC7SH126F	TC7SET126F	TC7WH126FK # Dual-gate	TC7WH126FU Dual-gate
D-Type Flip-Flop		Preset and Clear					TC7WH74FK #	TC7WH74FU
Multiplexers		Digital					TC7WH157FK #	TC7WH157FU

This device is compliant with the reliability requirements of AEC-Q100

Package Dimensions (unit: mm)

SHS Series

General Specification

Supply voltage range : 1.65 to 5.5 V
Output current : ± 24 mA (@V_{CC} = 3 V)
Propagation delay time : 2.4 nsec typ. (@V_{CC} = 3.3 V)
Quiescent supply current : 1 µA max (@V_{CC} = 5.5 V, Ta = 25 °C)
Operating temperature : T_{opr} = -40 to 125 °C

fSV (SOT-953)	ESV (SOT-553)	USV (SOT-353)	SMV (SOT-25)	US6 (SOT-363)	US8 (SOT-765)	SM8 (SOT-505)
						
1.0 x 1.0	1.6 x 1.6	2.0 x 2.1	2.9 x 2.8	2.0 x 2.1	2.0 x 3.1	2.9 x 4.0

Function			Part Number						
	Package		fSV	ESV	USV	SMV	US6	US8	SM8
Gate / Buffer	NAND		TC7SZ00AFS	TC7SZ00FE	TC7SZ00FU #	TC7SZ00F		TC7WZ00FK # Dual-gate	TC7WZ00FU Dual-gate
	AND		TC7SZ08AFS	TC7SZ08FE	TC7SZ08FU #	TC7SZ08F		TC7WZ08FK # Dual-gate	TC7WZ08FU Dual-gate
	NOR		TC7SZ02AFS	TC7SZ02FE	TC7SZ02FU #	TC7SZ02F		TC7WZ02FK # Dual-gate	TC7WZ02FU Dual-gate
	OR		TC7SZ32AFS	TC7SZ32FE	TC7SZ32FU #	TC7SZ32F		TC7WZ32FK # Dual-gate	TC7WZ32FU Dual-gate
	Exclusive-OR		TC7SZ86AFS	TC7SZ86FE	TC7SZ86FU #	TC7SZ86F		TC7WZ86FK # Dual-gate	TC7WZ86FU Dual-gate
	Inverter		TC7SZ04AFS	TC7SZ04FE	TC7SZ04FU #	TC7SZ04F	TC7PZ04FU # Dual-gate	TC7WZ04FK # Triple-gate	TC7WZ04FU Triple-gate
		Unbuffered	TC7SZU04AFS	TC7SZU04FE	TC7SZU04FU #	TC7SZU04F		TC7WZU04FK # Triple-gate	TC7WZU04FU Triple-gate
		Open-drain	TC7SZ05AFS	TC7SZ05FE	TC7SZ05FU #	TC7SZ05F	TC7PZ05FU # Dual-gate	TC7WZ05FK # Triple-gate	TC7WZ05FU Triple-gate
		Schmitt	TC7SZ14AFS	TC7SZ14FE	TC7SZ14FU #	TC7SZ14F	TC7PZ14FU # Dual-gate	TC7WZ14FK # Triple-gate	TC7WZ14FU Triple-gate
	Buffer	Open-drain	TC7SZ07AFS	TC7SZ07FE	TC7SZ07FU #	TC7SZ07F	TC7PZ07FU # Dual-gate	TC7WZ07FK # Triple-gate	TC7WZ07FU Triple-gate
		Schmitt	TC7SZ17AFS	TC7SZ17FE	TC7SZ17FU #	TC7SZ17F	TC7PZ17FU # Dual-gate	TC7WZ17FK # Triple-gate	TC7WZ17FU Triple-gate
	Non-Inverter		TC7SZ34AFS	TC7SZ34FE	TC7SZ34FU #	TC7SZ34F	TC7PZ34FU # Dual-gate	TC7WZ34FK # Triple-gate	TC7WZ34FU Triple-gate
	3-state	Buffer	TC7SZ125AFS	TC7SZ125FE	TC7SZ125FU #	TC7SZ125F		TC7WZ125FK # Dual-gate	TC7WZ125FU Dual-gate
			TC7SZ126AFS	TC7SZ126FE	TC7SZ126FU #	TC7SZ126F		TC7WZ126FK # Dual-gate	TC7WZ126FU Dual-gate
D-Type Flip-Flop		Preset and Clear						TC7WZ74FK #	TC7WZ74FU

This device is compliant with the reliability requirements of AEC-Q100

7UL1Gxx Series

General Specification

Supply voltage range	: 0.9 to 3.6 V
Output current	: ± 8 mA (@V_{CC} = 3 V)
Propagation delay time	: 2.5 nsec typ. (@V_{CC} = 3.3 V)
Quiescent supply current	: 1 µA max (@V_{CC} = 3.6 V, Ta = 25 °C)
Operating temperature	: T_{opr} = -40 to 125 °C

fSV (SOT-953)	USV (SOT-353)	US8 (SOT-765)	XSON6 (MP6D)
			Bottom View 
1.0 x 1.0	2.0 x 2.1	2.0 x 3.1	1.45 x 1.0

Function		Part Number			
	Package	fSV	USV	US8	XSON6 (MP6D)
Gate / Buffer	NAND Gate	7UL1G00FS	7UL1G00FU	7UL2G00FK	7UL1G00NX ☆
	NOR Gate	7UL1G02FS	7UL1G02FU	7UL2G02FK	7UL1G02NX ☆
	Inverter	7UL1G04FS	7UL1G04FU	7UL3G04FK	7UL1G04NX ☆
	Unbuffered	7UL1GU04FS	7UL1GU04FU	7UL3GU04FK	7UL1GU04NX ☆
	AND Gate	7UL1G08FS	7UL1G08FU	7UL2G08FK	7UL1G08NX ☆
	Schmitt Inverter	7UL1G14FS	7UL1G14FU	7UL3G14FK	7UL1G14NX ☆
	Schmitt Buffer	7UL1G17FS	7UL1G17FU	7UL3G17FK	7UL1G17NX ☆
	OR Gate	7UL1G32FS	7UL1G32FU	7UL2G32FK	7UL1G32NX ☆
	Buffer	7UL1G34FS	7UL1G34FU	7UL3G34FK	7UL1G34NX ☆
	Open drain		7UL1G07FU		
	Exclusive-OR	7UL1G86FS	7UL1G86FU	7UL2G86FK	7UL1G86NX ☆
	3-State Buffer(/G)	7UL1G125FS	7UL1G125FU	7UL2G125FK	7UL1G125NX ☆
	3-State Buffer(G)	7UL1G126FS	7UL1G126FU	7UL2G126FK	7UL1G126NX ☆

7UL1Txx Series

General Specification

Supply voltage range	: 2.3 to 3.6 V
Output level up to supply V_{CC} CMOS level	: 1.65 to 3.6 V (@V_{CC} = 3.6 V)
Output level down to supply V_{CC} CMOS level	: 3.6 to 2.3 V (@V_{CC} = 2.3 V)
Quiescent supply current	: 1 µA max (@V_{CC} = 3.6 V, Ta = 25 °C)
Operating temperature	: T_{opr} = -40 to 125 °C

fSV (SOT-953)	USV (SOT-353)	US8 (SOT-765)	XSON6 (MP6D)
			Bottom View 
1.0 x 1.0	2.0 x 2.1	2.0 x 3.1	1.45 x 1.0

Function		Part Number			
	Package	fSV	USV	US8	XSON6(MP6D)
Gate / Buffer	NAND Gate	7UL1T00FS	7UL1T00FU	7UL2T00FK	7UL1T00NX ☆
	NOR Gate	7UL1T02FS	7UL1T02FU	7UL2T02FK	7UL1T02NX ☆
	Inverter	7UL1T04FS	7UL1T04FU	7UL3T04FK	7UL1T04NX ☆
	AND Gate	7UL1T08FS	7UL1T08FU	7UL2T08FK	7UL1T08NX ☆
	OR Gate	7UL1T32FS	7UL1T32FU	7UL2T32FK	7UL1T32NX ☆
	Buffer	7UL1T34FS	7UL1T34FU	7UL3T34FK	7UL1T34NX ☆
	Exclusive-OR	7UL1T86FS	7UL1T86FU	7UL2T86FK	7UL1T86NX ☆
	3-State Buffer(/G)	7UL1T125FS	7UL1T125FU	7UL2T125FK	7UL1T125NX ☆
	3-State Buffer(G)	7UL1T126FS	7UL1T126FU	7UL2T126FK	7UL1T126NX ☆

☆ New Products

7-2 CMOS Logic ICs

Standard Logic 74VHC Series (TSSOP14B / 16B / 20B Package Products)

Package Dimensions (unit: mm)

TSSOP14B	TSSOP16B	TSSOP20B
		
5.0 x 6.4	5.0 x 6.4	6.5 x 6.4

Features
- Available -40 to 125 °C products
- Compatible standard TSSOP package

Series name					VHC	VHCT (TTL Input)	VHCV (Schmitt Input)	VHC9 (Schmitt Input)
Characteristics and Features		Supply voltage range			2 to 5.5 V	4.5 to 5.5 V	1.8 to 5.5 V	2 to 5.5 V 4.5 to 5.5 V (VHCT9)
		Output current @V_{CC} = 4.5 V			±8 mA		±16 mA	±8 mA
		Power down protection on inputs			Yes			
		Power down protection on outputs			No	Yes		
Function				Pin	-	-	-	-
Gate / Buffer	NAND	Quad		14	74VHC00FT	74VHCT00AFT		
			Open-drain	14	74VHC03FT			
			Schmitt	14	74VHC132FT			
		Dual	4-input	14	74VHC20FT			
	AND	Quad		14	74VHC08FT	74VHCT08AFT		
		Dual	4-input	14	74VHC21FT			
	NOR	Quad		14	74VHC02FT			
		Dual	4-input	14	74VHC27FT			
	OR	Quad		14	74VHC32FT	74VHCT32AFT		
	Exclusive-OR	Quad		14	74VHC86FT			
	Inverter	Hex		14	74VHC04FT	74VHCT04AFT		
			Open-drain	14	74VHC05FT		74VHCV05FT	
			Schmitt	14	74VHC14FT	74VHCT14AFT	74VHCV14FT	
		9-bit		20				74VHC9152FT
	Buffer	Hex		14			74VHCV17FT	
			Open-drain	14			74VHCV07FT	
		Dual 3-bit	Pull-down resistor	20				74VHC9363FT
			Pull-up resistor	20				74VHC9364FT
		9-bit		20				74VHC9151FT
	3-state Buffer	Quad		14	74VHC125FT	74VHCT125AFT		
				14	74VHC126FT	74VHCT126AFT		
		5-Bit Universal Schmitt Buffer		14				74VHC9125FT 74VHCT9125AFT
				14				74VHC9126FT 74VHCT9126AFT
		Octal	Inverted	20	74VHC240FT	74VHCT240AFT	74VHCV240FT	
				20	74VHC540FT	74VHCT540AFT	74VHCV540FT	
				20	74VHC244FT	74VHCT244AFT	74VHCV244FT	
				20	74VHC541FT	74VHCT541AFT	74VHCV541FT	
			Universal Schmitt Buffer	20				74VHC9541FT 74VHCT9541AFT
	Transceiver	Octal		20	74VHC245FT	74VHCT245AFT	74VHCV245FT	
Flip-Flop		Dual		14	74VHC74FT			
		Hex		16	74VHC174FT			
		Octal		20	74VHC273FT			74VHC9273FT 74VHCT9273FT
	3-state	Octal		20	74VHC374FT		74VHCV374FT	
				20	74VHC574FT	74VHCT574AFT	74VHCV574FT	
Latch	3-state	Octal		20	74VHC373FT		74VHCV373FT	
				20	74VHC573FT	74VHCT573AFT	74VHCV573FT	
Multi-vibrator		Dual		16	74VHC123AFT			
				16	74VHC221AFT			
Decoder	3 to 8 line	Single		16	74VHC138FT	74VHCT138AFT		
				16	74VHC238FT			
	2 to 4 line	Dual		16	74VHC139FT			
Shift Register	8bit	S-in / P-out		14	74VHC164FT			
		S-in / P-out, P-in / S-out		16				74VHC9164FT
		P-in / S-out		16	74VHC165FT			
		3-state		16	74VHC595FT			74VHC9595FT
Counter	Binary	Single 4bit with	Async. Clear	16	74VHC161FT			
			Sync. Clear	16	74VHC163FT			
		Dual	4bit	14	74VHC393FT			
		Single	14-stage	16	74VHC4020FT			
			12-stage	16	74VHC4040FT			
Multi-plexer	Digital	Dual-4ch.		16	74VHC153FT			
		Quad-2ch.		16	74VHC157FT			
	Analog	Single-8ch.		16	74VHC4051AFT			
		Dual-4ch.		16	74VHC4052AFT			
		Triple-2ch.		16	74VHC4053AFT			
Other	Analog switch Quad			14	74VHC4066AFT			

Standard Logic TC74VHC Series (TSSOP14 / 16 / 20 Package Products)

Package Dimensions (unit: mm)

TSSOP14	TSSOP16	TSSOP20
		
5.0 x 6.4	5.0 x 6.4	6.5 x 6.4

Features

- Compliant with the reliability requirements of AEC-Q100 Operating temperature: Available -40 to 125 °C products
- Compatible standard TSSOP package

Series name				Pin	VHC	VHCT (TTL Input)	VHCV (Schmitt Input)	VHC9 (Schmitt Input)
Characteristics and Features		Supply voltage range			2 to 5.5 V	4.5 to 5.5 V	1.8 to 5.5 V	2 to 5.5 V 4.5 to 5.5 V (VHCT9)
		Output current @V_{CC} = 4.5 V			±8 mA		±16 mA	±8 mA
		Power down protection on inputs			Yes			
		Power down protection on outputs			No	Yes		
Function					-	-	-	-
Gate / Buffer	NAND	Quad		14	TC74VHC00FT #	TC74VHCT00AFT #		
			Open-drain	14	TC74VHC03FT #			
			Schmitt	14	TC74VHC132FT #			
		Dual	4-input	14	TC74VHC20FT #			
	AND	Quad		14	TC74VHC08FT #	TC74VHCT08AFT #		
		Dual	4-input	14	TC74VHC21FT #			
	NOR	Quad		14	TC74VHC02FT #			
		Dual	4-input	14	TC74VHC27FT #			
	OR	Quad		14	TC74VHC32FT #	TC74VHCT32AFT #		
	Exclusive-OR	Quad		14	TC74VHC86FT #			
	Inverter	Hex		14	TC74VHC04FT #	TC74VHCT04AFT #		
			Open-drain	14	TC74VHC05FT #		TC74VHCV05FT #	
			Schmitt	14	TC74VHC14FT #	TC74VHCT14AFT #	TC74VHCV14FT #	
		9-bit		20				TC74VHC9152FT #
	Buffer	Hex		14			TC74VHCV17FT #	
			Open-drain	14			TC74VHCV07FT #	
		Dual 3-bit	Pull-down resistor	20				TC74VHC9363FT #
			Pull-up resistor	20				TC74VHC9364FT #
		9-bit		20				TC74VHC9151FT #
	3-state Buffer	Quad		14	TC74VHC125FT #	TC74VHCT125AFT #		
				14	TC74VHC126FT #	TC74VHCT126AFT #		
		5-Bit Universal Schmitt Buffer		14				TC74VHC9125FT # TC74VHCT9125AFT #
				14				TC74VHC9126FT # TC74VHCT9126AFT #
		Octal	Inverted	20	TC74VHC240FT #	TC74VHCT240AFT #	TC74VHCV240FT #	
				20	TC74VHC540FT #	TC74VHCT540AFT #	TC74VHCV540FT #	
				20	TC74VHC244FT #	TC74VHCT244AFT #	TC74VHCV244FT #	
				20	TC74VHC541FT #	TC74VHCT541AFT #	TC74VHCV541FT #	
			Universal Schmitt Buffer	20				TC74VHC9541FT # TC74VHCT9541AFT #
	Transceiver	Octal		20	TC74VHC245FT #	TC74VHCT245AFT #	TC74VHCV245FT #	
Flip-Flop		Dual		14	TC74VHC74FT #			
		Hex		16	TC74VHC174FT #			
		Octal		20	TC74VHC273FT #			TC74VHC9273FT # TC74VHCT9273FT #
	3-state	Octal		20	TC74VHC374FT #		TC74VHCV374FT #	
				20	TC74VHC574FT #	TC74VHCT574AFT #	TC74VHCV574FT #	
Latch	3-state	Octal		20	TC74VHC373FT #		TC74VHCV373FT #	
				20	TC74VHC573FT #	TC74VHCT573AFT #	TC74VHCV573FT #	
Multi-vibrator		Dual		16	TC74VHC123AFT #			
				16	TC74VHC221AFT #			
Decoder	3 to 8 line	Single		16	TC74VHC138FT #	TC74VHCT138AFT #		
				16	TC74VHC238FT #			
	2 to 4 line	Dual		16	TC74VHC139FT #			
Shift Register	8bit	S-in / P-out		14	TC74VHC164FT #			
		S-in / P-out, P-in / S-out		16				TC74VHC9164FT #
		P-in / S-out		16	TC74VHC165FT #			
		3-state		16	TC74VHC595FT #			TC74VHC9595FT #
Counter	Binary	Single 4bit with	Async. Clear	16	TC74VHC161FT #			
			Sync. Clear	16	TC74VHC163FT #			
		Dual	4bit	14	TC74VHC393FT #			
		Single	14-stage	16	TC74VHC4020FT #			
			12-stage	16	TC74VHC4040FT #			
Multi-plexer	Digital	Dual-4ch.		16	TC74VHC153FT #			
		Quad-2ch.		16	TC74VHC157FT #			
	Analog	Single-8ch.		16	TC74VHC4051AFT #			
		Dual-4ch.		16	TC74VHC4052AFT #			
		Triple-2ch.		16	TC74VHC4053AFT #			
Other	Analog switch Quad			14	TC74VHC4066AFT #			

This device is compliant with the reliability requirements of AEC-Q100

Standard Logic 74HC Series, 74LCX Series (TSSOP14B / 16B / 20B Package Products)

Package Dimensions (unit: mm)

TSSOP14B	TSSOP16B	TSSOP20B
		
5.0 x 6.4	5.0 x 6.4	6.5 x 6.4

Features

74LCX Series
- Available -40 to 125 °C products (‡ Operation temperature of this device is -40 to 85 °C.)
- Compatible standard TSSOP package

74HC/HCT Series
- Available -40 to 125 °C products, Compatible standard TSSOP package

Series name					HC	HCT (TTL Input)	LCX
Characteristics and Features		Supply voltage range			2 to 6 V	4.5 to 5.5 V	1.65 to 3.6 V to 5.5 V (05 and 07)
		Output current @V_{CC} = 4.5 V			±4 or ±6 mA		±24 mA (@V_{CC} = 3 V)
		Power down protection on inputs			No		Yes
		Power down protection on outputs			No		Yes
Function				Pin	-	-	-
Gate / Buffer	NAND	Quad		14			74LCX00FT
	AND	Quad		14			74LCX08FT
	NOR	Quad		14			74LCX02FT
	OR	Quad		14			74LCX32FT
	Exclusive-OR	Quad		14			74LCX86FT
	Inverter	Hex		14			74LCX04FT
				16	TC74HC4049AFT &		
			Unbuffer	14	TC74HCU04AFT &		
			Open-drain	14			74LCX05FT
			Schmitt	14			74LCX14FT
	Buffer	Hex		16	TC74HC4050AFT &		
			Open-drain	14			74LCX07FT
	3-state Buffer	Quad		14			74LCX125FT
				14			74LCX126FT
		Octal	Inverted	20			74LCX240FT ‡
				20			74LCX540FT ‡
				20			74LCX244FT ‡
				20			74LCX541FT ‡
	Transceiver	Octal		20			74LCX245FT ‡
Flip-Flop		Dual		14			74LCX74FT
		Octal		20			74LCX273FT
	3-state	Octal		20			74LCX374FT ‡
				20			74LCX574FT ‡
Latch	3-state	Octal		20			74LCX373FT ‡
				20			74LCX573FT ‡
Multivibrator		Dual	Retriggerable / Resettable	16	74HC4538FT		
Decoder	3 to 8 line	Single		16			74LCX138FT
Multiplexer	Digital	Quad-2ch.		16			74LCX157FT
			3-state	16			74LCX257FT
	Analog	Single-8ch.		16	74HC4051FT	74HCT4051FT	
		Dual-4ch.		16	74HC4052FT	74HCT4052FT	
		Triple-2ch.		16	74HC4053FT	74HCT4053FT	
Other	Analog switch Quad			14	74HC4066FT		

‡ Operation temperature is -40 to 85 °C
& The package for this product is TSSOP14 / 16.

Standard Logic TC74LCX Series (TSSOP14 / 16 / 20 Package Products)

Package Dimensions (unit: mm)

TSSOP14	TSSOP16	TSSOP20
		
5.0 x 6.4	5.0 x 6.4	6.5 x 6.4

Features

- Compliant with the reliability requirements of AEC-Q100 Operating temperature: Available -40 to 125 °C products (‡ Operation temperature of this device is -40 to 85 °C.)
- Compatible standard TSSOP package

Series name					LCX
Characteristics and Features		Supply voltage range			1.65 to 3.6 V to 5.5 V (05 and 07)
		Output current @V_{CC} = 4.5 V			±24 mA (@V_{CC} = 3 V)
		Power down protection on inputs			Yes
		Power down protection on outputs			Yes
Function				Pin	-
Gate / Buffer	NAND	Quad		14	TC74LCX00FT #
	AND	Quad		14	TC74LCX08FT #
	NOR	Quad		14	TC74LCX02FT #
	OR	Quad		14	TC74LCX32FT #
	Exclusive-OR	Quad		14	TC74LCX86FT #
	Inverter	Hex		14	TC74LCX04FT #
			Open-drain	14	TC74LCX05FT #
			Schmitt	14	TC74LCX14FT #
	Buffer	Hex	Open-drain	14	TC74LCX07FT #
	3-state Buffer	Quad		14	TC74LCX125FT #
				14	TC74LCX126FT #
		Octal	Inverted	20	TC74LCX240FT # ‡
				20	TC74LCX540FT # ‡
				20	TC74LCX244FT # ‡
				20	TC74LCX541FT # ‡
	Transceiver	Octal		20	TC74LCX245FT # ‡
Flip-Flop		Dual		14	TC74LCX74FT #
		Octal		20	TC74LCX273FT #
	3-state	Octal		20	TC74LCX374FT # ‡
				20	TC74LCX574FT # ‡
Latch	3-state	Octal		20	TC74LCX373FT # ‡
				20	TC74LCX573FT # ‡
Decoder	3 to 8 line	Single		16	TC74LCX138FT #
Multi-plexer	Digital	Quad-2ch.		16	TC74LCX157FT #
			3-state	16	TC74LCX257FT #

This device is compliant with the reliability requirements of AEC-Q100
‡ Operation temperature is -40 to 85 °C

Standard Logic 74VHC Series (US14 / 16 / 20 Package Products)

Package Dimensions (unit: mm)

US14	US16	US20
		
4.0 x 4.0	4.0 x 4.0	5.0 x 4.0

Features

- Small mounting area and thin package

Series name					VHC	VHCT (TTL Input)	VHCV (Schmitt Input)	VHC9 (Schmitt Input)
Characteristics and Features		Supply voltage range			2 to 5.5 V	4.5 to 5.5 V	1.8 to 5.5 V	2 to 5.5 V 4.5 to 5.5 V (VHCT9)
		Output current @V_{CC} = 4.5 V			±8 mA		±16 mA	±8 mA
		Power down protection on inputs			Yes			
		Power down protection on outputs			No	Yes		
Function				Pin	-	-	-	-
Gate / Buffer	NAND	Quad		14	TC74VHC00FK	TC74VHCT00AFK		
			Open-drain	14	TC74VHC03FK			
			Schmitt	14	TC74VHC132FK			
		Dual	4-input	14	TC74VHC20FK			
	AND	Quad		14	TC74VHC08FK	TC74VHCT08AFK		
		Dual	4-input	14	TC74VHC21FK			
	NOR	Quad		14	TC74VHC02FK			
		Dual	4-input	14	TC74VHC27FK			
	OR	Quad		14	TC74VHC32FK	TC74VHCT32AFK		
	Exclusive-OR	Quad		14	TC74VHC86FK			
	Inverter	Hex		14	TC74VHC04FK	TC74VHCT04AFK		
			Open-drain	14	TC74VHC05FK		TC74VHCV05FK	
			Schmitt	14	TC74VHC14FK	TC74VHCT14AFK	TC74VHCV14FK	
		9-bit		20				TC74VHC9152FK
	Buffer	Hex		14			TC74VHCV17FK	
			Open-drain	14			TC74VHCV07FK	
		9-bit		20				TC74VHC9151FK
	3-state Buffer	Quad		14	TC74VHC125FK	TC74VHCT125AFK		
				14	TC74VHC126FK	TC74VHCT126AFK		
		5-Bit Universal Schmitt Buffer		14				TC74VHC9125FK TC74VHCT9125AFK
				14				TC74VHC9126FK TC74VHCT9126AFK
		Octal	Inverted	20	TC74VHC240FK	TC74VHCT240AFK	TC74VHCV240FK	
				20	TC74VHC540FK	TC74VHCT540AFK	TC74VHCV540FK	
				20	TC74VHC244FK	TC74VHCT244AFK	TC74VHCV244FK	
				20	TC74VHC541FK	TC74VHCT541AFK	TC74VHCV541FK	
			Universal Schmitt Buffer	20				TC74VHC9541FK TC74VHCT9541AFK
	Transceiver	Octal		20	TC74VHC245FK	TC74VHCT245AFK	TC74VHCV245FK	
Flip-Flop		Dual		14	TC74VHC74FK			
		Hex		16	TC74VHC174FK			
		Octal		20	TC74VHC273FK			TC74VHC9273FK TC74VHCT9273FK
	3-state	Octal		20	TC74VHC374FK		TC74VHCV374FK	
				20	TC74VHC574FK	TC74VHCT574AFK	TC74VHCV574FK	
Latch	3-state	Octal		20	TC74VHC373FK		TC74VHCV373FK	
				20	TC74VHC573FK	TC74VHCT573AFK	TC74VHCV573FK	
Multi-vibrator		Dual		16	TC74VHC123AFK			
				16	TC74VHC221AFK			
Decoder	3 to 8 line	Single		16	TC74VHC138FK	TC74VHCT138AFK		
				16	TC74VHC238FK			
	2 to 4 line	Dual		16	TC74VHC139FK			
Shift Register	8bit	S-in / P-out		14	TC74VHC164FK			
		S-in / P-out,P-in / S-out		16				TC74VHC9164FK
		P-in / S-out		16	TC74VHC165FK			
		3-state		16	TC74VHC595FK			TC74VHC9595FK
Counter	Binary	Single 4bit with	Async. Clear	16	TC74VHC161FK			
			Sync. Clear	16	TC74VHC163FK			
		Dual	4bit	14	TC74VHC393FK			
		Single	14-stage	16	TC74VHC4020FK			
			12-stage	16	TC74VHC4040FK			
Multi-plexer	Digital	Dual-4ch.		16	TC74VHC153FK			
		Quad-2ch.		16	TC74VHC157FK			
	Analog	Single-8ch.		16	TC74VHC4051AFK			
		Dual-4ch.		16	TC74VHC4052AFK			
		Triple-2ch.		16	TC74VHC4053AFK			
Other	Analog switch Quad			14	TC74VHC4066AFK			

Standard Logic 74LCX Series, 74VCX Series (US14 / 16 / 20 Package Products)

Package Dimensions (unit: mm)

US14	US16	US20
		
4.0 x 4.0	4.0 x 4.0	5.0 x 4.0

Features

- Small mounting area and thin package

Series name					LCX	VCX
Characteristics and Features		Supply voltage range			1.65 to 3.6 V to 5.5 V (05 and 07)	1.2 to 3.6 V
		Output current @V_{CC} = 3 V			±24 mA	±24 mA
		Power down protection on inputs			Yes	Yes
		Power down protection on outputs			Yes	Yes
Function				Pin	-	-
Gate / Buffer	NAND	Quad		14	TC74LCX00FK	TC74VCX00FK
	AND	Quad		14	TC74LCX08FK	TC74VCX08FK
	NOR	Quad		14	TC74LCX02FK	TC74VCX02FK
	OR	Quad		14	TC74LCX32FK	TC74VCX32FK
	Exclusive-OR	Quad		14	TC74LCX86FK	
	Inverter	Hex		14	TC74LCX04FK	TC74VCX04FK
			Open-drain	14	TC74LCX05FK	
			Schmitt	14	TC74LCX14FK	TC74VCX14FK
	Buffer	Hex	Open-drain	14	TC74LCX07FK	
	3-state Buffer	Quad		14	TC74LCX125FK	TC74VCX125FK
				14	TC74LCX126FK	
			Series resistor	14		TC74VCX2125FK
		Octal	Inverted	20	TC74LCX240FK	
				20	TC74LCX540FK	
				20	TC74LCX244FK	TC74VCX244FK
				20	TC74LCX541FK	TC74VCX541FK
			Series resistor	20		TC74VCX2244FK
				20		TC74VCX2541FK
	Transceiver	Octal		20	TC74LCX245FK	TC74VCX245FK
Flip-Flop		Dual		14	TC74LCX74FK	
		Octal		20	TC74LCX273FK	
	3-state	Octal		20	TC74LCX374FK	
				20	TC74LCX574FK	TC74VCX574FK
Latch	3-state	Octal		20	TC74LCX373FK	
				20	TC74LCX573FK	
Decoder	3 to 8 line	Single		16	TC74LCX138FK	TC74VCX138FK
Multi-plexer	Digital	Quad-2ch.		16	TC74LCX157FK	TC74VCX157FK
			3-state	16	TC74LCX257FK	TC74VCX257FK

Standard Logic 74HC Series, TC4000B Series (SOP14 / 16 / 20 Package Products)

Package Dimensions (unit: mm)

SOP14	SOP16	SOP20
		
10.3 x 7.8	10.3 x 7.8	12.8 x 7.8

Series name				SOP Package		
				HC	HCT (TTL Input)	Standard series
Characteristics and Features		Supply voltage range		2 to 6 V	4.5 to 5.5 V	3 to 18 V
		Output current @V_{CC} = 4.5 V		±4 or ±6 mA	±4 or ±6 mA	±0.51 mA (@V_{CC} = 5 V)
		Power down protection on inputs		No		No
		Power down protection on outputs		No		No
Function				Pin	-	-	-
Gate / Buffer	NAND	Quad		14	TC74HC00AF		TC4011BF
			Schmitt	14	TC74HC132AF		TC4093BF
		Dual	4-input	14	TC74HC20AF		
	AND	Quad		14	TC74HC08AF		TC4081BF
		Dual	4-input	14	TC74HC21AF		
	NOR	Quad		14	TC74HC02AF		TC4001BF
	OR	Quad		14	TC74HC32AF		TC4071BF
	Exclusive-OR	Quad		14			TC4030BF
	Inverter	Hex		14	TC74HC04AF	TC74HCT04AF	
				16	TC74HC4049AF		TC4049BF
			Unbuffer	14	TC74HCU04AF		TC4069UBF
			Open-drain	14	TC74HC05AF		
			Schmitt	14	TC74HC14AF		TC4584BF
	Buffer	Hex		16	TC74HC4050AF		TC4050BF
			Open-drain	14	TC74HC07AF		
	3-state Buffer	Quad		14	TC74HC125AF		
				14	TC74HC126AF		
		Hex	Universal	14	TC74HC365AF		
				14	TC74HC366AF		
				14		TC74HCT7007AF	
		Octal	Inverted	20	TC74HC240AF	TC74HCT240AF	
				20	TC74HC540AF	TC74HCT540AF	
				20	TC74HC7240AF		
				20	TC74HC241AF TC74HC244AF	TC74HCT244AF	
				20	TC74HC7244AF		
				20	TC74HC541AF	TC74HCT541AF	
	Transceiver	Octal	Inverted	20	TC74HC640AF		
			Non-inverted	20	TC74HC245AF		
Flip-Flop		Dual		14	TC74HC74AF		TC4013BF
		Hex		16	TC74HC175AF		
		Octal		20	TC74HC273AF		
	3-state	Octal		20	TC74HC374AF		
				20	TC74HC574AF		
Latch	3-state	Octal		20	TC74HC373AF		
				20	TC74HC573AF		
Multi-vibrator	Dual Monostable			16	TC74HC123AF		
		Retriggerable		16	TC74HC423AF		
		Retriggerable/Resettable		16	TC74HC4538AF		TC4538BF
Decoder	3 to 8 line	Single		16	TC74HC42AF		
				16	TC74HC138AF		
	BCD-to-Seven Segment Latch / Decoder / Driver			16			TC4511BF
Shift Register	8bit	S-in / P-out		14			
		P-in / S-out		16	TC74HC165AF		TC4021BF
		Latch (3-state)		16	TC74HC595AF		
		8-Stage Shift-and-Store		16			TC4094BF
Counter	Binary	Single	14-stage	16	TC74HC4020AF		TC4020BF
			12-stage	16	TC74HC4040AF		TC4040BF
		Single 14-Stage / Oscillator		16	TC74HC4060AF		
		Single Decade Counter/Divider		16			TC4017BF
		Dual Binary Up Counter		16			TC4520BF
		Programmable Divider / Timer		16	TC74HC7292AF		
Multi-plexer	Digital	Single-8ch.		16	TC74HC151AF		
		Single-8ch.	3-state	16	TC74HC251AF		
		Dual-4ch.		16	TC74HC153AF		
		Dual-4ch.	3-state	16	TC74HC253AF		
		Quad-2ch.		16	TC74HC157AF		
	Analog	Single-8ch.		16	TC74HC4051AF		TC4051BF
		Dual-4ch.		16	TC74HC4052AF		TC4052BF
		Triple-2ch.		16	TC74HC4053AF	TC74HCT4053AF	TC4053BF
Other	Analog switch Quad			14	TC74HC4066AF		TC4066BF

Standard Logic TC74VCX Series, TC74LCX Series (TSSOP14 / 16 / 20 / 48 Package Products)

Package Dimensions (unit: mm)

TSSOP14	TSSOP16	TSSOP20	TSSOP48
			
5.0 x 6.4	5.0 x 6.4	6.5 x 6.4	12.5 x 8.1

Series name					TSSOP Package	
					TC74VCX	TC74LCX
Characteristics and Features		Supply voltage range			1.2 to 3.6 V	1.65 to 3.6 V
		Output current @V_{CC} = 3 V			±24 mA	±24 mA
		Power down protection on inputs			Yes	
		Power down protection on outputs			Yes	
Function				Pin	-	-
Gate / Buffer	NAND	Quad		14	TC74VCX00FT †	
	AND	Quad		14	TC74VCX08FT †	
	NOR	Quad		14	TC74VCX02FT †	
	OR	Quad		14	TC74VCX32FT †	
	Inverter	Hex		14	TC74VCX04FT †	
			Schmitt	14	TC74VCX14FT †	
	3-state Buffer	Quad		14	TC74VCX125FT †	
			Series resistor	14	TC74VCX2125FT †	
		Octal		20	TC74VCX244FT †	
				20	TC74VCX541FT †	
			Series resistor	20	TC74VCX2244FT †	
				20	TC74VCX2541FT †	
		16bit		48		TC74LCX16244 †
	Transceiver	Octal		20	TC74VCX245FT †	
		16bit		48	TC74VCX16245 †	TC74LCX16245 †
			Bus hold	48	TC74VCXH16245 †	
			Series resistor	48	TC74VCXR162245 †	
			Bus hold + Series resistor	48	T74VCXHR162245 †	
Flip-Flop	3-state	Octal		14	TC74VCX574FT †	
Decoder	3 to 8 line	Single		16	TC74VCX138FT †	
Multi-plexer	Digital	Quad-2ch.		16	TC74VCX157FT †	
			3-state	16	TC74VCX257FT †	

† Operating temperature: T_{opr} = -40 to 125 °C

7-3 Bus Switches

High-Speed Transmission Type

Package Dimensions (unit: mm)

High-Speed Transmission Type

XQFN16	TQFN20
Bottom View  2.4 x 1.6	Bottom View  4.5 x 2.5

Recommended application	Interface Speed	Part Number	Package	Number of lane	Specification: Supply Voltage Range	Specification: Band width @-3 dB (typ.)	Specification: Quiescent Supply Current (max)	Pin Assignment	Switch function
USB4® PCIe®-Gen6 Thunderbolt 4™ DP2.0™	to 64 GTs	TDS5B212MX ★	XQFN16	1 lane	1.6 to 3.6 V	34 GHz @V_{CC} = 1.6 to 3.6 V	150 µA @V_{CC} = 3.6 V		SPDT
		TDS5C212MX ★				29 GHz @V_{CC} = 1.6 to 3.6 V			
USB4® PCIe®-Gen5 Thunderbolt 4™ DP2.0™	to 32 Gbps	TDS4A212MX ☆	XQFN16	1 lane	1.6 to 3.6 V	26.2 GHz @V_{CC} = 1.6 to 3.6 V	150 µA @V_{CC} = 3.6 V		SPDT
		TDS4B212MX ☆				27.5 GHz @V_{CC} = 1.6 to 3.6 V			
USB3.1 PCIe®-Gen3	to 10 Gbps	TC7PCI3212MT	TQFN20	1 lane	3 to 3.6 V	11.5 GHz @V_{CC} = 3.3 V	500 µA @V_{CC} = 3.6 V		SPDT
		TC7PCI3215MT							

for USB2.0 and others

UQFN10B	TSSOP14
Bottom View  1.4 x 1.8	 5.0 x 6.4

Recommended application	Interface Speed	Part Number	Package	Number of circuit	Specification: Supply Voltage Range	Specification: Band width @-3 dB (typ.)	Specification: Quiescent Supply Current (max)	Pin Assignment	Switch function
USB2.0 PCIe®-Gen1 HDMI™1.4 SATA2.0 SAS1.0	to 3.4 Gbps	TC7USB40MU	UQFN10B	2	2.3 to 4.3 V	1.5 GHz @V_{CC} = 3.3 V	1 µA @V_{CC} = 4.3 V		SPDT
		TC7USB42MU							
		TC7USB40FT	TSSOP14						
		TC7USB42FT							

☆ New Products
★ Under Development (The specification is subject to change without notice.)
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General Purpose Bus Switches

Package Dimensions (unit: mm)

USV (SOT-353)	XSON6 (MP6D)	US6 (SOT-363)	US8 (SOT-765)	US14	US16	US20	TSSOP14B	TSSOP16B	TSSOP20B
	Bottom View 								
2.0 x 2.1	1.45 x 1.0	2.0 x 2.1	2.0 x 3.1	4.0 x 4.0	4.0 x 4.0	5.0 x 4.0	5.0 x 6.4	5.0 x 6.4	6.5 x 6.4

5 V Bus Switch

Switch function	Part Number	Package	Number of circuit	Switch type	Specification			
					Supply Voltage Range	Switch I/O Capacitance @Switch OFF (typ.)	Switch ON Resistance @V_{CC} = 4.5 V, V_{IS} = 0 V (typ.)	Quiescent Supply Current (max)
SPST	TC7SB66CFU #†	USV	1	P-ch + N-ch	1.65 to 5.5 V	5 pF @V_{CC} = 5 V	4 Ω @I_{IS} = 30 mA	10 μA @V_{CC} = 5.5 V
	TC7SB67CFU #†							
	TC7WB66CFK #†	US8	2					
	TC7WB67CFK #†							
SPDT	TC7SB3157CFU #†	US6	1	P-ch + N-ch	1.65 to 5.5 V	5 pF @V_{CC} = 5 V	4 Ω @I_{IS} = 30 mA	10 μA @V_{CC} = 5.5 V
	TC7SB3157DL6X	XSON6 (MP6D)						

Low-Voltage Bus Switch

Switch function	Part Number	Package	Number of circuit	Switch type	Specification			
					Supply Voltage Range	Switch I/O Capacitance	Switch ON Resistance @V_{CC} = 3 V, V_{IS} = 0 V (typ.)	Quiescent Supply Current
SPST	TC7SBL66CFU #†	USV	1	P-ch + N-ch	1.65 to 3.6 V	3.5 pF @V_{CC} = 3 V	5.5 Ω @I_{IS} = 30 mA	10 μA @V_{CC} = 3.6 V
	TC7SBL384CFU #†							
	TC7WBL3305CFK #†	US8	2				6 Ω @I_{IS} = 30 mA	
	TC7WBL3306CFK #†							
	TC7MBL3125CFK	US14	4				6.5 Ω @I_{IS} = 30 mA	
	TC7MBL3125CFT #†	TSSOP14B						
	TC7MBL3126CFK	US14						
	TC7MBL3126CFT #†	TSSOP14B						
	TC7MBL3245CFK	US20	8					
	TC7MBL3245CFT #†	TSSOP20B						
SPDT	TC7MBL3257CFK	US16	4	P-ch + N-ch	1.65 to 3.6 V	5 pF @V_{CC} = 3 V, A-port	8.5 Ω @I_{IS} = 30 mA	10 μA @V_{CC} = 3.6 V
	TC7MBL3257CFT #†	TSSOP16B						
SP4T	TC7MBL3253CFK	US16	2	P-ch + N-ch	1.65 to 3.6 V	9 pF @V_{CC} = 3 V, A-port	9 Ω @I_{IS} = 30 mA	10 μA @V_{CC} = 3.6 V
	TC7MBL3253CFT #†	TSSOP16B						

This device is compliant with the reliability requirements of AEC-Q100
† Operation temperature is -40 to 125 °C

7-4 Level Shifters

Package Dimensions (unit: mm)

fSV (SOT-953)	XSON6 (MP6D)	UF6 (SOT-363F)	US6 (SOT-363)	US8 (SOT-765)	US16	TSSOP16B	TSSOP48
							
1.0 x 1.0	1.45 x 1.0	2.0 x 2.1	2.0 x 2.1	2.0 x 3.1	4.0 x 4.0	5.0 x 6.4	12.5 x 8.1

Bus Buffer Type

Direction	Part Number	Package	Bit Count	Control Input (Output Enable)	Function					
					Supply Voltage Range		Gate or Buffer	Sleep Mode	Low Noise	Series Resistor or Bus Hold
					V_{CCA} (V)	V_{CCB} (V)				
Bidirectional	TC7MP3125FK	US16	4	Active-Low (A side)	1.1 to 2.7	1.65 to 3.6	3-State Buffer	✓		
	TC7MP3125FT # †	TSSOP16B						✓		
	TC7MPN3125FK	US16						✓	✓	
	TC7MPN3125FT # †	TSSOP16B						✓	✓	
	74LVC2T45FK ☆ †	US8	2	None	1.65 to 5.5		Buffer			
	74AVC1T45FU ☆ †	US6	1		0.8 to 3.6					
	74AVC1T45NX ☆ †	XSON6	1							
	74AVCH1T45FU ☆ †	US6	1							Bus Hold
	74AVCH1T45NX ☆ †	XSON6	1							Bus Hold
	74AVC2T45FK ☆ †	US8	2							
	74AVCH2T45FK ☆ †	US8	2							Bus Hold
	74AVC4T245FT ☆ †	TSSOP16B	4	Active-Low (A side)	0.8 to 3.6		3-State Buffer			
	74AVCH4T245FT ☆ †									Bus Hold
	74AVC4T345FT ☆ †									
	TC74VCX163245 †	TSSOP48	16	Active-Low (B side)	2.3 to 3.6	1.65 to 2.7				
	TC74VCX164245 †				1.65 to 2.7	2.3 to 3.6				
	TC74LCX163245 †				4.5 to 5.5	2.3 to 3.6				
	TC74LCXR163245 †									Series Resistor
	TC74LCX164245 †				2.3 to 3.6	4.5 to 5.5				
	TC74LCXR164245 †									Series Resistor
Unidirectional	TC7SP3125TU	UF6	1	Active-Low (A side)	1.1 to 2.7	1.65 to 3.6	3-State Buffer	✓		
	TC7SPN3125TU							✓	✓	
	TC7WP3125FK # †	US8	2	Active-Low (A side)				✓		
	TC7WPN3125FK # †							✓	✓	
	74LV4T125FT # †	TSSOP16B	4	Active-Low	1.65 to 5.5	- (Single Supply)	3-State Buffer			
	74LV4T125FK †	US16								
	74LV4T126FT # †	TSSOP16B		Active-High						
	74LV4T126FK †	US16								
	7UL1T00FS †	fSV	1	None	2.3 to 3.6	- (Single Supply)	NAND			
	7UL1T02FS †						NOR			
	7UL1T04FS †						Inverter			
	7UL1T08FS †						AND			
	7UL1T32FS †						OR			
	7UL1T34FS †						Buffer			
	7UL1T86FS †						Exclusive-OR			
	7UL1T125FS †			Active-Low			3-State Buffer			
	7UL1T126FS †			Active-High						

☆ New Products
This device is compliant with the reliability requirements of AEC-Q100
† Operation temperature is -40 to 125 °C

XSON6 (MP6D)	USV (SOT-353)	US8 (SOT-765)
Bottom View 		
1.45 x 1.0	2.0 x 2.1	2.0 x 3.1

Bus Buffer Type

Direction	Part Number	Package	Bit Count	Control Input	Function					
					Supply Voltage Range		Gate or Buffer	Sleep Mode	Low Noise	Series Resistor or Bus Hold
					V_{CCA} (V)	V_{CCB} (V)				
Unidirectional	7UL1T00FU †	USV	1	None	2.3 to 3.6	- (Single Supply)	NAND			
	7UL1T02FU †						NOR			
	7UL1T04FU †						Inverter			
	7UL1T08FU †						AND			
	7UL1T32FU †						OR			
	7UL1T34FU †						Buffer			
	7UL1T86FU †						Exclusive-OR			
	7UL1T125FU †			Active-Low			3-State Buffer			
	7UL1T126FU †			Active-High						
	7UL1T00NX ☆ †	XSON6 (MP6D)	1	None			NAND			
	7UL1T02NX ☆ †						NOR			
	7UL1T04NX ☆ †						Inverter			
	7UL1T08NX ☆ †						AND			
	7UL1T32NX ☆ †						OR			
	7UL1T34NX ☆ †						Buffer			
	7UL1T86NX ☆ †						Exclusive-OR			
	7UL1T125NX ☆ †			Active-Low			3-State Buffer			
	7UL1T126NX ☆ †			Active-High						
	7UL2T00FK †	US8	2	None	2.3 to 3.6	- (Single Supply)	NAND			
	7UL2T02FK †						NOR			
	7UL3T04FK †		3				Inverter			
	7UL2T08FK †		2				AND			
	7UL2T32FK †						OR			
	7UL3T34FK †		3				Buffer			
	7UL2T86FK †		2				Exclusive-OR			
	7UL2T125FK †		2	Active-Low			3-State Buffer			
	7UL2T126FK †			Active-High						

☆ New Products
This device is compliant with the reliability requirements of AEC-Q100
† Operation temperature is -40 to 125 °C

Package Dimensions (unit: mm)

UF6 (SOT-363F)	US8 (SOT-765)	US14	US20	TSSOP14B	TSSOP20B
					
2.0 x 2.1	2.0 x 3.1	4.0 x 4.0	5.0 x 4.0	5.0 x 6.4	6.5 x 6.4

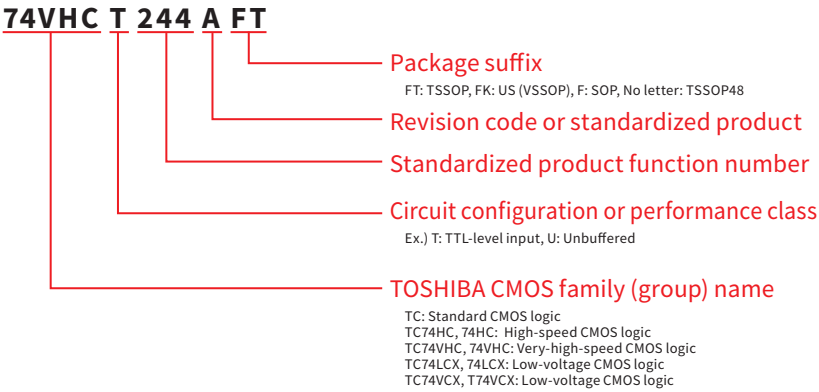
Bus Switch Type

Switch function	Part Number	Package	Bit Count	Control Input	Specification			
					Supply Voltage Range		Switch I/O Capacitance @Switch OFF (typ.)	Switch ON Resistance @V_{CCA} = 3 V, V_{CCB} = 4.5 V, V_{IS} = 0 V (max)
					V_{CCA} (V)	V_{CCB} (V)		
SPST	TC7SPB9306TU	UF6	1	Active-High (A side)	1.65 to 5	2.3 to 5.5	7 pF @$V_{CCA/B}$ = 3.3 V	8 Ω @I_{IS} = 30 mA
	TC7SPB9307TU			Active-Low (A side)				
	TC7WPB9306FK # †	US8	2	Active-High (A side)				
	TC7WPB9307FK # †			Active-Low (A side)				
	TC7QPB9306FK	US14	4	Active-High (A side)				
	TC7QPB9306FT # †	TSSOP14B						
	TC7QPB9307FK	US14		Active-Low (A side)				
	TC7QPB9307FT # †	TSSOP14B						
	TC7MPB9307FK	US20	8	Active-Low (A side)				
	TC7MPB9307FT # †	TSSOP20B						
SPDT	TC7MPB9326FK	US14	2	Active-High (A side)	1.65 to 5	2.3 to 5.5	7 pF @$V_{CCA/B}$ = 3.3 V	8 Ω @I_{IS} = 30 mA
	TC7MPB9326FT # †	TSSOP14B						
	TC7MPB9327FK	US14		Active-Low (A side)				
	TC7MPB9327FT # †	TSSOP14B						

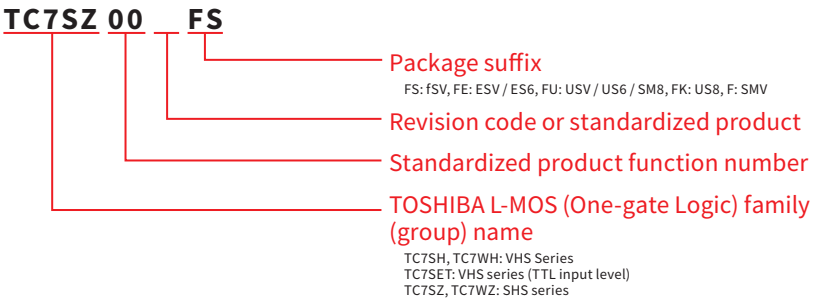
This device is compliant with the reliability requirements of AEC-Q100
† Operation temperature is -40 to 125 °C

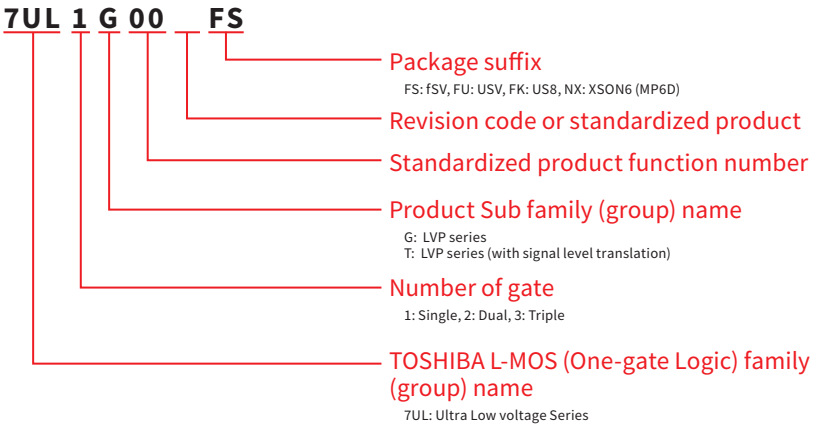
7-5 Part Naming Conventions

Standard Logic



One-Gate Logic





8. Radio-Frequency Devices

RF Diodes

Package Dimensions (unit: mm)

SOD-923	ESC (SOD-523)	USC (SOD-323)
		
1.0 x 0.6	1.6 x 0.8	2.5 x 1.25

Variable Capacitance Diodes

Application	Part Number	Structure	Package	Absolute Maximum Ratings	Electrical Characteristics (Ta = 25 °C)						
				V_R (V)	C_T upper (pF)	@V_R (V)	C_T lower (pF)	@V_R (V)	C_T upper / C_T lower	rs typ. (Ω)	@V_R (V)
VCO	1SV285	Single	ESC	10	4.5	1	2	4	2.3	0.42	1
	1SV277	Single	USC	10	4.5	1	2	4	2.3	0.42	1
	1SV311	Single	ESC	10	9.7 to 11.1	1	4.45 to 5.45	4	2.1	0.28	1
	1SV310	Single	USC	10	9.7 to 11.1	1	4.45 to 5.45	4	2.1	0.28	1
	1SV281	Single	ESC	10	16	1	8	4	2	0.28	1
	1SV270	Single	USC	10	16	1	8	4	2	0.28	1
	1SV305	Single	ESC	10	18.3	1	6.1	4	3	0.27	1
	1SV304	Single	USC	10	18.3	1	6.1	4	3	0.27	1
	1SV323	Single	ESC	10	26.5 to 29.5	1	6 to 7.1	4	4.3	0.4	4
	1SV322	Single	USC	10	26.5 to 29.5	1	6 to 7.1	4	4.3	0.4	4
	1SV325	Single	ESC	10	44 to 49.5	1	9.2 to 12	4	4.3	0.4	4
	1SV324	Single	USC	10	44 to 49.5	1	9.2 to 12	4	4.3	0.4	4
	JDV2S36E	Single	ESC	10	44 to 49.5	1	5.4 to 7.3	6	7.5	0.4	4
	1SV280	Single	ESC	15	3.8 to 4.7	2	1.5 to 2	10	2.4	0.44	1
	JDV2S42FS ☆	Single	SOD-923	15	3.8 to 4.7	2	1.5 to 2	10	2.4	0.44	1
	1SV239	Single	USC	15	4.25	2	1.75	10	2.4	0.44	1
	1SV279	Single	ESC	15	14 to 16	2	5.5 to 6.5	10	2.5	0.2	5
	1SV229	Single	USC	15	14 to 16	2	5.5 to 6.5	10	2.5	0.2	5
	JDV2S41AFS ☆	Single	SOD-923	15	14 to 16	2	5.5 to 6.5	10	2.5	0.2	5

☆ New Products

RF Diodes

Package Dimensions (unit: mm)

SL2 (SOD-962)	SOD-923	ESC (SOD-523)	USC (SOD-323)	VESM (SOT-723)	SSM (SOT-416)	USM (SOT-323)	S-Mini (SOT-346)
Bottom View							
							
0.62 x 0.32	1.0 x 0.6	1.6 x 0.8	2.5 x 1.25	1.2 x 1.2	1.6 x 1.6	2.0 x 2.1	2.9 x 2.5

Schottky Barrier Diodes

Feature	Part Number	Structure	Package	Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)					
				V_R (V)	I_F (mA)	V_F typ. (V)	@I_F (mA)	I_R max (μA)	@V_R (V)	C_T typ. (pF)	@V_R (V)
Low V_F	JDH2S02SL	Single	SL2	10	10	0.24	1	25	0.5	0.25	0.2
	JDH2S02FS ☆	Single	SOD-923	10	10	0.24	1	25	0.5	0.25	0.2
Standard	1SS315	Single	USC	5	30	0.25	2	25	0.5	0.6	0.2
	1SS154	Single	S-Mini	6	30	0.5	10	0.5	5	0.8	0
	JDH3D01FV	Series	VESM	4	25	0.25	2	25	0.5	0.6	0.2
	JDH3D01S	Series	SSM	4	25	0.25	2	25	0.5	0.6	0.2
	1SS295	Series	S-Mini	4	30	0.25	2	25	0.5	0.6	0.2
	1SS271	Series	S-Mini	6	30	0.5	10	0.5	5	0.8	0

☆ New Products

Switching Diodes

Feature	Part Number	Structure	Package	Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)					
				V_R (V)	I_F (mA)	V_F typ. (V)	@I_F (mA)	C_T typ. (pF)	@V_R (V)	rs typ. (Ω)	@I_F (mA)
Standard PIN diode	1SV308	Single	ESC	30	50	0.95	50	0.3	1	1	10
	1SV307	Single	USC	30	50	0.95	50	0.3	1	1	10
	JDP3C02AU	Cathode com.	USM	30	50	0.89	50	0.28	1	1	10
RF switching diode	1SS381	Single	ESC	30	100	0.85 (max)	2	0.7	6	0.6	2
	1SS314	Single	USC	30	100	0.85 (max)	2	0.7	6	0.5	2
	1SS364	Cathode com.	SSM	30	50	0.85 (max)	2	0.85	6	0.6	2
	1SS312	Cathode com.	USM	30	50	0.85 (max)	2	0.8	6	0.6	2
	1SS313	Anode com.	USM	30	50	0.85 (max)	2	0.8	6	0.6	2
	1SS268	Cathode com.	S-Mini	30	50	0.85 (max)	2	0.8	6	0.6	2
	1SS269	Anode com.	S-Mini	30	50	0.85 (max)	2	0.8	6	0.6	2

Part Naming Conventions

Radio-Frequency Diode (EIAJ registration products)

Ex.) 1 S S 381
①②③ ④

① The value that subtracted 1 from the total number of terminals
② S stands for Semiconductor
③ The kind of diode
This section shows the kind of the Radio Frequency diode being used.
(It is omitted in certain cases.)
S: detection use, Frequency conversion use, and switching use
V: variable capacitance diode, PIN diode
④ Serial number

Radio-Frequency Diode (EIAJ un-registration products)

Ex.) JD V 2 S 36 E
① ② ③ ④ ⑤ ⑥

① JD means High-frequency diode
② The kind of devices
This section shows the kind of the devices being used.
It is classified into H, P, S, and V by the devices being loaded.
H: schottky barrier diode
P: PIN diode
S: band switching diode
V: variable capacitance diode
③ The number of terminals
④ Internal connection
This section shows the kind of the internal connection of a product.
S: single
C: cathode common
P: parallel
⑤ Serial number
⑥ Package type

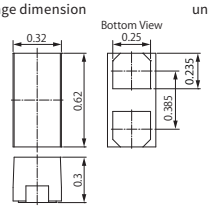
AU	USM
S	SSM
E	ESC
SL	SL2
FV	VESM
FS, AFS	SOD-923

9. Device Packages

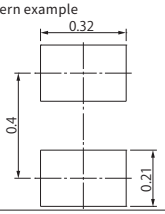
2 Pin packages

SL2 (SOD-962) (0.62 x 0.32)

Package dimension unit: mm

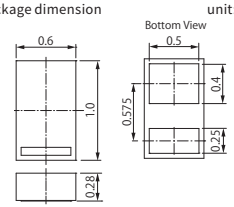


Land pattern example unit: mm

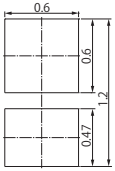


CL2E (1.0 x 0.6)

Package dimension unit: mm

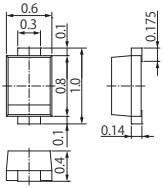


Land pattern example unit: mm

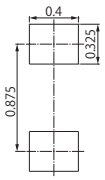


SOD-923 (1.0 x 0.6)

Package dimension unit: mm

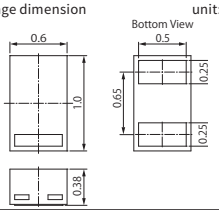


Land pattern example unit: mm

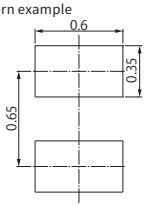


CST2 (SOD-882) (1.0 x 0.6)

Package dimension unit: mm

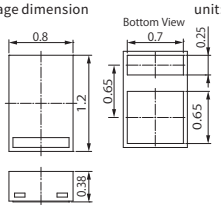


Land pattern example unit: mm

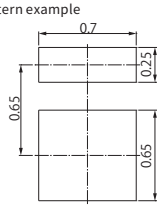


CST2B (1.2 x 0.8)

Package dimension unit: mm

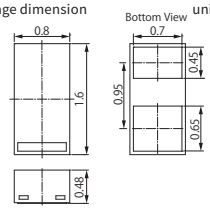


Land pattern example unit: mm

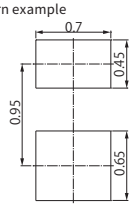


CST2C (SOD-963) (1.6 x 0.8)

Package dimension unit: mm

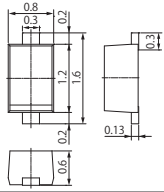


Land pattern example unit: mm

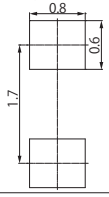


ESC (SOD-523) (1.6 x 0.8)

Package dimension unit: mm

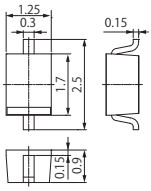


Land pattern example unit: mm

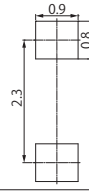


USC (SOD-323) (2.5 x 1.25)

Package dimension unit: mm

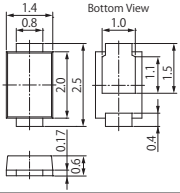


Land pattern example unit: mm

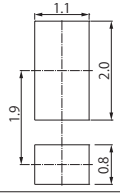


US2H (SOD-323HE) (2.5 x 1.4)

Package dimension unit: mm



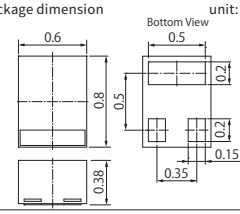
Land pattern example unit: mm



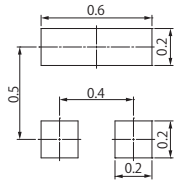
3 Pin packages

CST3C (0.8 x 0.6)

Package dimension unit: mm

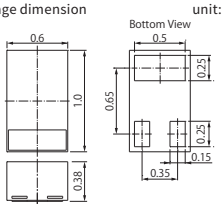


Land pattern example unit: mm

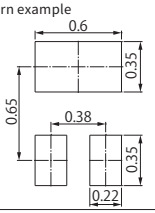


CST3 (SOT-883) (1.0 x 0.6)

Package dimension unit: mm

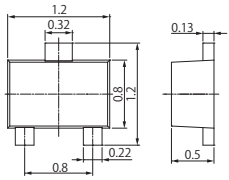


Land pattern example unit: mm

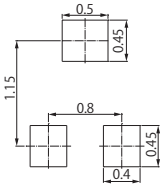


VESM (SOT-723) (1.2 x 1.2)

Package dimension unit: mm

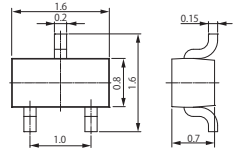


Land pattern example unit: mm

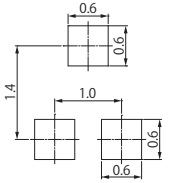


SSM (SOT-416) (1.6 x 1.6)

Package dimension unit: mm

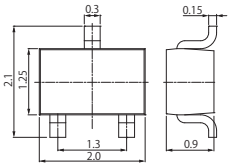


Land pattern example unit: mm

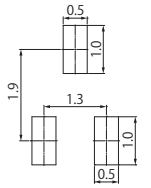


USM (SOT-323) (2.0 x 2.1)

Package dimension unit: mm

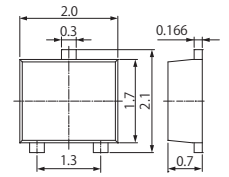


Land pattern example unit: mm

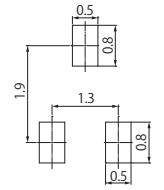


UFM (SOT-323F) (2.0 x 2.1)

Package dimension unit: mm

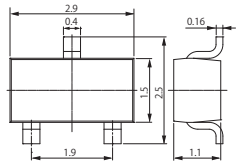


Land pattern example unit: mm

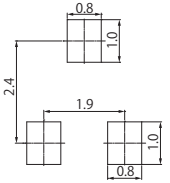


S-Mini (SOT-346) (2.9 x 2.5)

Package dimension unit: mm

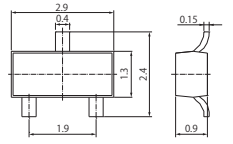


Land pattern example unit: mm

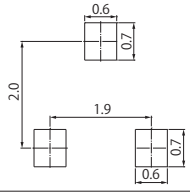


SOT23 (SOT-23) (2.9 x 2.4)

Package dimension unit: mm

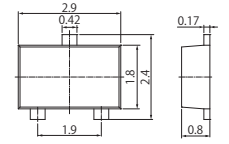


Land pattern example unit: mm

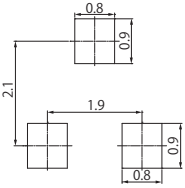


SOT-23F (2.9 x 2.4)

Package dimension unit: mm



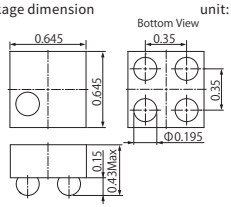
Land pattern example unit: mm



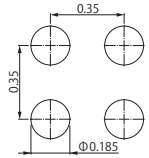
4 Pin packages

WCSP4E (0.645 x 0.645)

Package dimension unit: mm

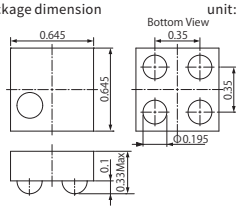


Land pattern example unit: mm

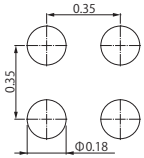


WCSP4F (0.645 x 0.645)

Package dimension unit: mm

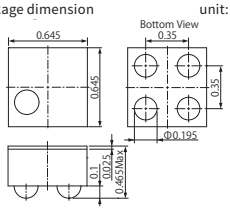


Land pattern example unit: mm

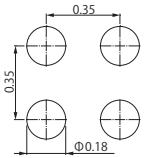


WCSP4G (0.645 x 0.645)

Package dimension unit: mm

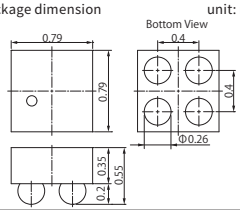


Land pattern example unit: mm

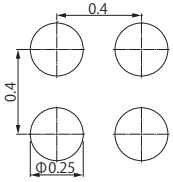


WCSP4D (0.79 x 0.79)

Package dimension unit: mm

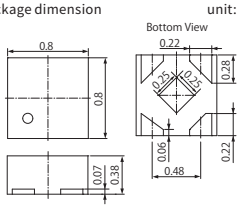


Land pattern example unit: mm

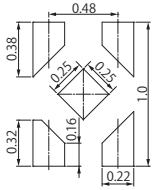


SDFN4E (0.8 x 0.8)

Package dimension unit: mm

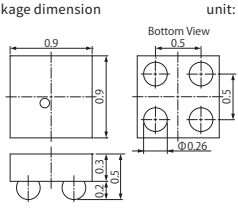


Land pattern example unit: mm

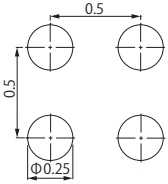


WCSP4C (0.9 x 0.9)

Package dimension unit: mm

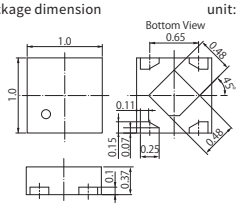


Land pattern example unit: mm

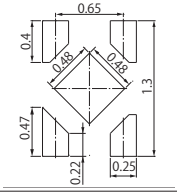


DFN4D (1.0 x 1.0)

Package dimension unit: mm

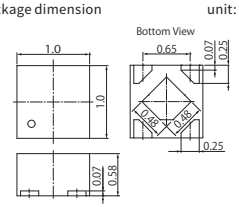


Land pattern example unit: mm

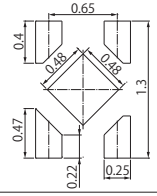


DFN4E (1.0 x 1.0)

Package dimension unit: mm

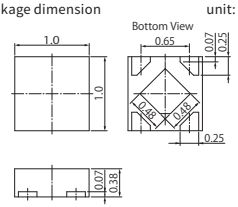


Land pattern example unit: mm

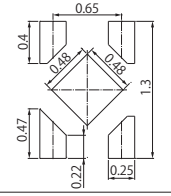


DFN4F (1.0 x 1.0)

Package dimension unit: mm



Land pattern example unit: mm

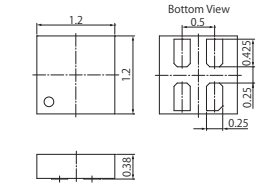


4 Pin packages

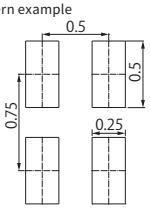
5 Pin packages

DFN4A (1.2 x 1.2)

Package dimension unit: mm

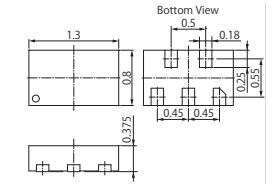


Land pattern example unit: mm

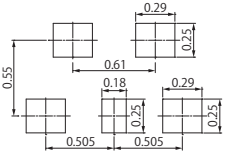


DFN5 (1.3 x 0.8)

Package dimension unit: mm

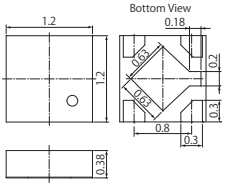


Land pattern example unit: mm

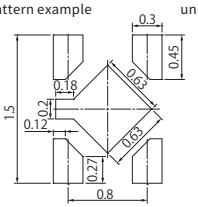


DFN5B (1.2 x 1.2)

Package dimension unit: mm

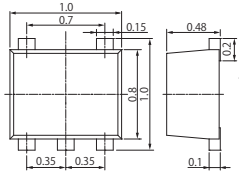


Land pattern example unit: mm

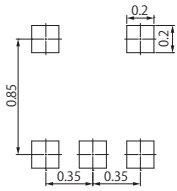


fSV (SOT-953) (1.0 x 1.0)

Package dimension unit: mm

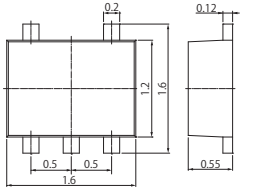


Land pattern example unit: mm

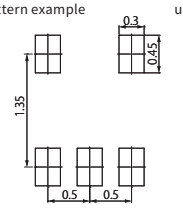


ESV (SOT-553) (1.6 x 1.6)

Package dimension unit: mm

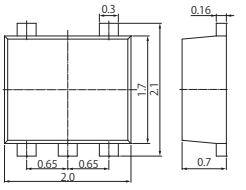


Land pattern example unit: mm

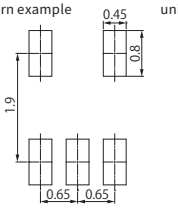


UFV (SOT-353F) (2.0 x 2.1)

Package dimension unit: mm



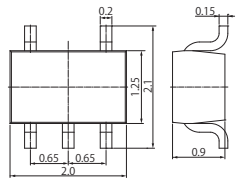
Land pattern example unit: mm



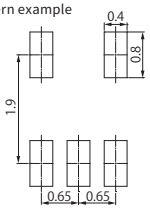
6 Pin packages

USV (SOT-353) (2.0 x 2.1)

Package dimension unit: mm

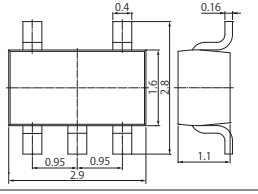


Land pattern example unit: mm

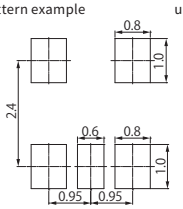


SMV (SOT-25) (2.9 x 2.8)

Package dimension unit: mm

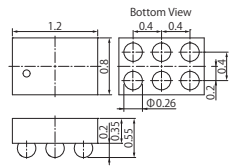


Land pattern example unit: mm

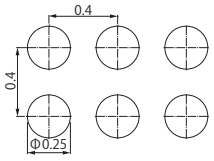


WCSP6E (1.2 x 0.8)

Package dimension unit: mm



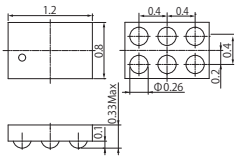
Land pattern example unit: mm



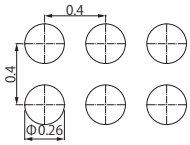
6 Pin packages

WCSP6F (1.2 x 0.8)

Package dimension unit: mm

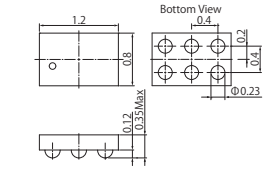


Land pattern example unit: mm

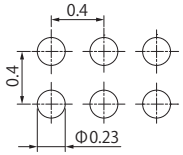


WCSP6G (1.2 x 0.8)

Package dimension unit: mm

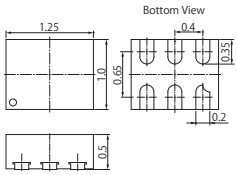


Land pattern example unit: mm

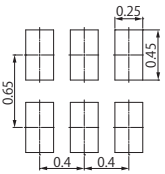


DFN6 (1.25 × 1.0)

Package dimension unit: mm

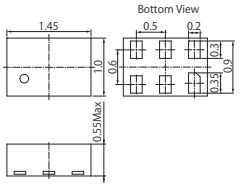


Land pattern example unit: mm

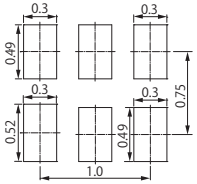


MP6C (1.45 × 1.0)

Package dimension unit: mm

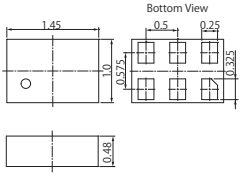


Land pattern example unit: mm

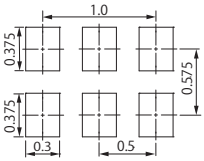


XSON6(MP6D) (1.45 × 1.0)

Package dimension unit: mm

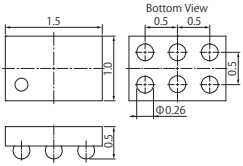


Land pattern example unit: mm

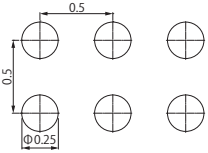


WCSP6C (1.5 x 1.0)

Package dimension unit: mm

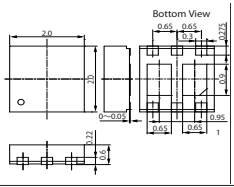


Land pattern example unit: mm

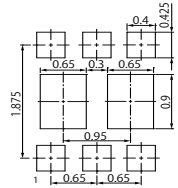


DFN2020(WF) (2.0 x 2.0)

Package dimension unit: mm

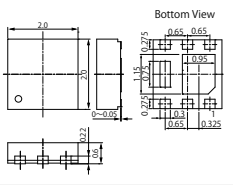


Land pattern example unit: mm

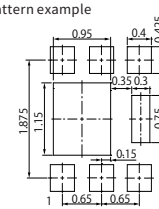


DFN2020B(WF) (2.0 x 2.0)

Package dimension unit: mm

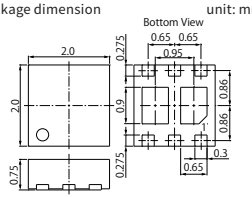


Land pattern example unit: mm

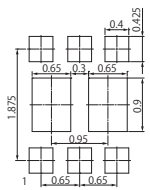


UDFN6 (SOT-1118) (2.0 x 2.0)

Package dimension unit: mm



Land pattern example unit: mm

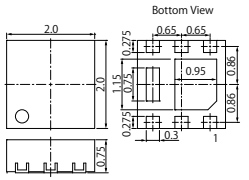


Gere, vid iam mortala confica estium labus corum terioculis. Ad mere, cerei se nocum aciam sendienatus, sistrum remnini hilium inte co conc is cus, et abem cononendit nostari pero vilin serentis, peconsimus hucon is, que cone cus; numus? P. Marit antis fachuid essicideni pra nique publictabus et verit audem achus; elum Romnihilin dieneris adhuid rem inguloc ulistest dit; nihin tum, condum acienatum tium omnihil capecup iendescrum oruntem unihilibus, derfectum maxim tum huiusperis mus, efectu macchilne faces ses poravolutus non vissigna, moenimilica; hocum et vives intiam. Nost? Ahabut furs perebatuam. C. Caturem nonsuli conost vidiusque tem sereo hor la sulosul vocaper fectus artu convocupim consulem in pota,

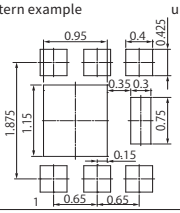
6 Pin packages

UDFN6B (SOT-1220) (2.0 x 2.0)

Package dimension unit: mm

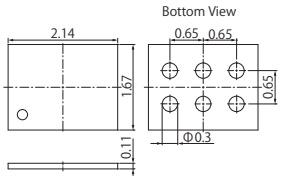


Land pattern example unit: mm

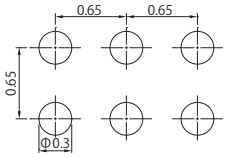


TCSP6A-172101 (2.14 x 1.67)

Package dimension unit: mm

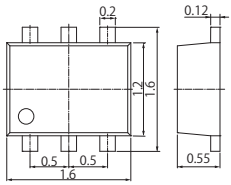


Land pattern example unit: mm

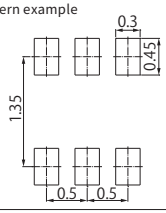


ES6 (SOT-563) (1.6 x 1.6)

Package dimension unit: mm

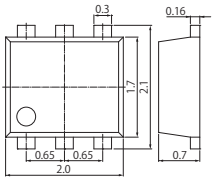


Land pattern example unit: mm

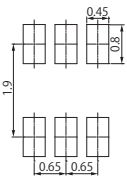


UF6 (SOT-363F) (2.0 x 2.1)

Package dimension unit: mm

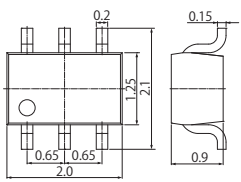


Land pattern example unit: mm

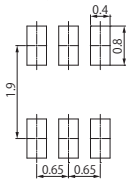


US6 (SOT-363) (2.0 x 2.1)

Package dimension unit: mm

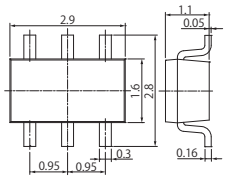


Land pattern example unit: mm

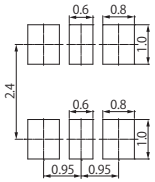


SM6 (SOT-26) (2.9 x 2.8)

Package dimension unit: mm



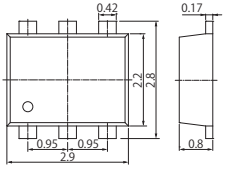
Land pattern example unit: mm



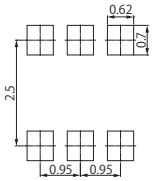
8 Pin packages

TSOP6F (2.9 x 2.8)

Package dimension unit: mm

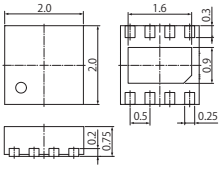


Land pattern example unit: mm

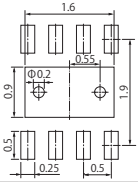


WSON8 (2.0 x 2.0)

Package dimension unit: mm

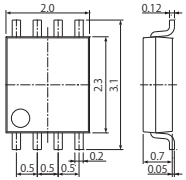


Land pattern example unit: mm

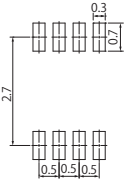


US8 (SOT-765) (2.0 x 3.1)

Package dimension unit: mm



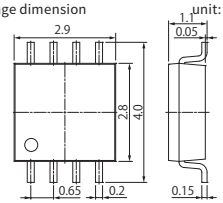
Land pattern example unit: mm



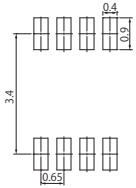
8 Pin packages

SM8 (SOT-505) (2.9 x 4.0)

Package dimension unit: mm

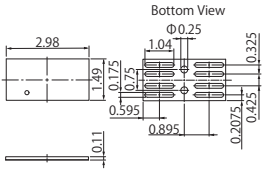


Land pattern example unit: mm

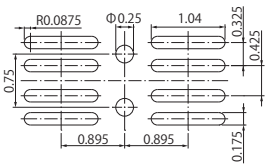


TCSPAC-153001 (2.98 x 1.49)

Package dimension unit: mm



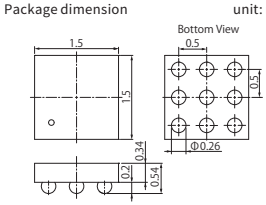
Land pattern example unit: mm



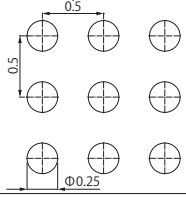
9 Pin packages

WCSP9 (1.5 x 1.5)

Package dimension unit: mm

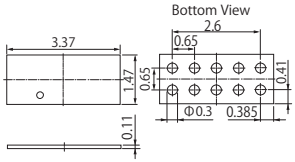


Land pattern example unit: mm

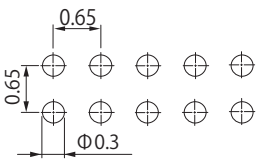


TCSPAG-341501 (3.37 x 1.47)

Package dimension unit: mm



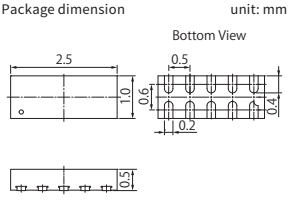
Land pattern example unit: mm



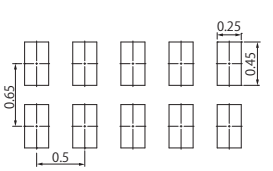
10 Pin packages

DFN10 (2.5 x 1.0)

Package dimension unit: mm

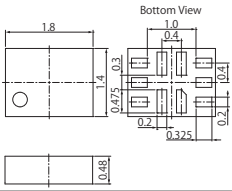


Land pattern example unit: mm

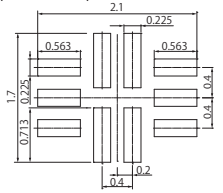


UQFN10B (1.4 x 1.8)

Package dimension unit: mm



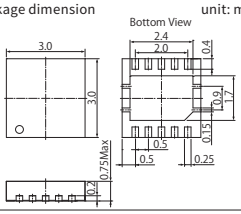
Land pattern example unit: mm



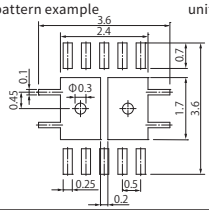
14 Pin packages

WSON10 (3.0 x 3.0)

Package dimension unit: mm

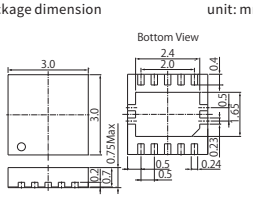


Land pattern example unit: mm

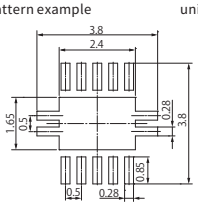


WSON10B (3.0 x 3.0)

Package dimension unit: mm

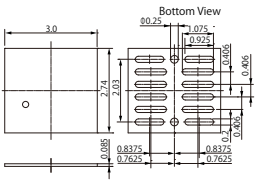


Land pattern example unit: mm

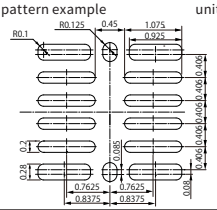


TCSPED-302701 (3.0 x 2.74)

Package dimension unit: mm



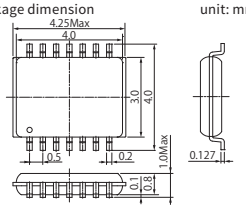
Land pattern example unit: mm



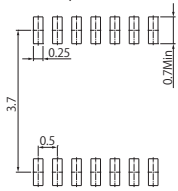
14 Pin packages

US14 (4.0 x 4.0)

Package dimension unit: mm

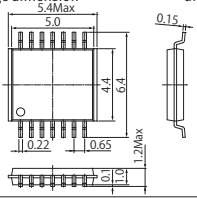


Land pattern example unit: mm

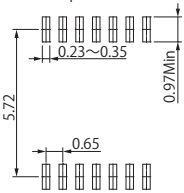


TSSOP14 (5.0 x 6.4)

Package dimension unit: mm

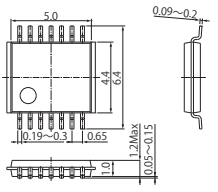


Land pattern example unit: mm

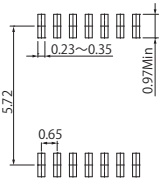


TSSOP14B (5.0 x 6.4)

Package dimension unit: mm



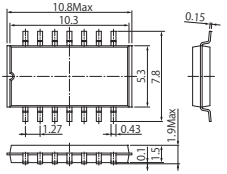
Land pattern example unit: mm



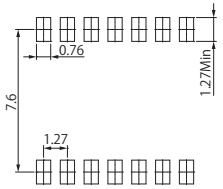
16 Pin packages

SOP14 (10.3 x 7.8)

Package dimension unit: mm

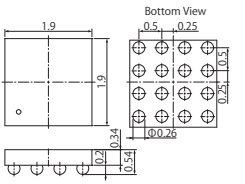


Land pattern example unit: mm

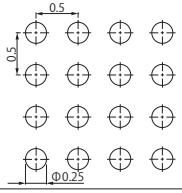


WCSP16C (1.9 x 1.9)

Package dimension unit: mm

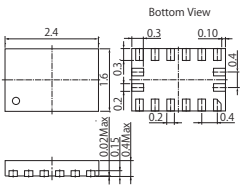


Land pattern example unit: mm

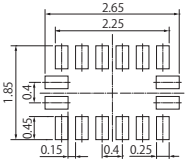


XQFN16 (2.4 x 1.6)

Package dimension unit: mm

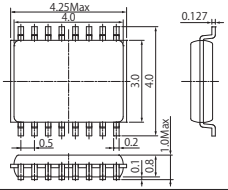


Land pattern example unit: mm

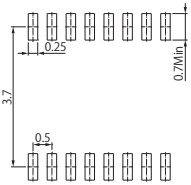


US16 (4.0 x 4.0)

Package dimension unit: mm

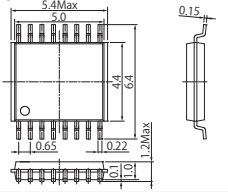


Land pattern example unit: mm

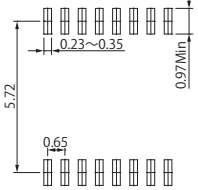


TSSOP16 (5.0 x 6.4)

Package dimension unit: mm

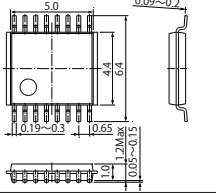


Land pattern example unit: mm

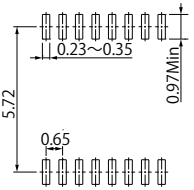


TSSOP16B (5.0 x 6.4)

Package dimension unit: mm



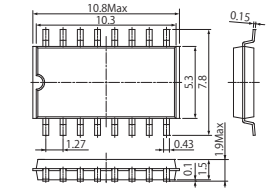
Land pattern example unit: mm



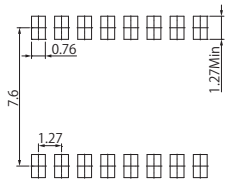
16 Pin packages

SOP16 (10.3 x 7.8)

Package dimension unit: mm

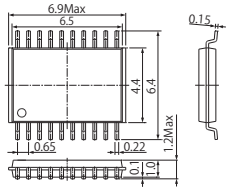


Land pattern example unit: mm

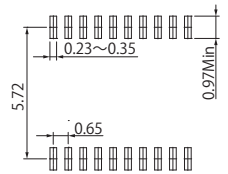


TSSOP20 (6.5 x 6.4)

Package dimension unit: mm



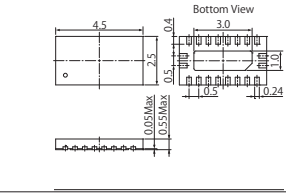
Land pattern example unit: mm



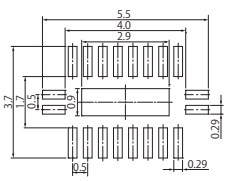
20 Pin packages

TQFN20 (4.5 x 2.5)

Package dimension unit: mm

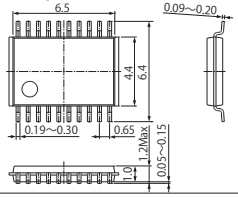


Land pattern example unit: mm

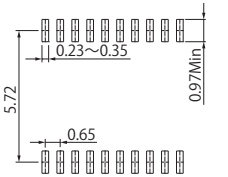


TSSOP20B (6.5 x 6.4)

Package dimension unit: mm

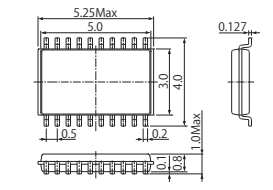


Land pattern example unit: mm

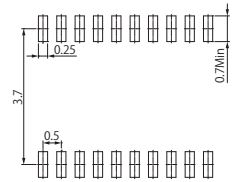


US20 (5.0 x 4.0)

Package dimension unit: mm

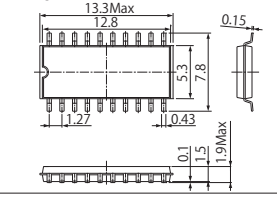


Land pattern example unit: mm

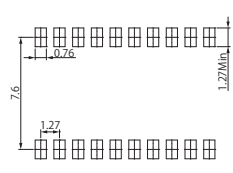


SOP20 (12.8 x 7.8)

Package dimension unit: mm



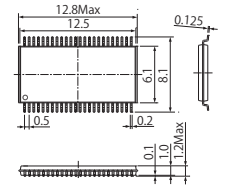
Land pattern example unit: mm



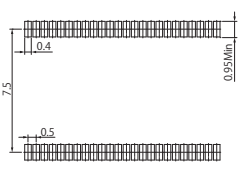
48 Pin package

TSSOP48 (12.5 x 8.1)

Package dimension unit: mm



Land pattern example unit: mm



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