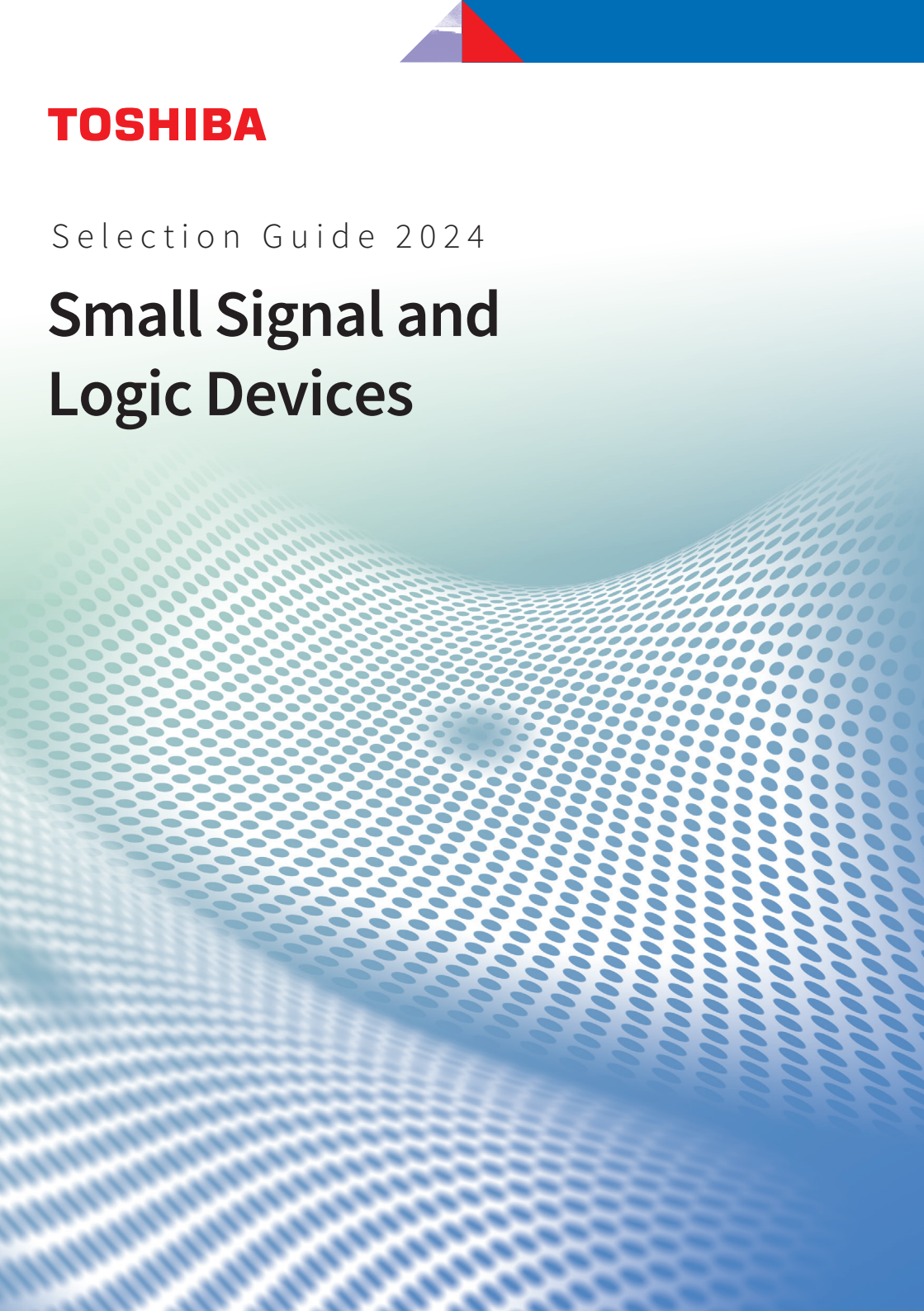
TOSHIBA

Selection Guide 2024

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  0.8 x 0.6	Bottom View  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	Bottom View  1.5 x 1.0

P-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			
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	
VESM	SSM3J66MFV	# $	-20	+6/-8	-0.8	4000	900	660	480	-	390	-	1.6	100	
	SSM3J56MFV	$	-20	+/-8	-0.8	4000	900	660	480	-	390	-	1.6	100	
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	+6/-8	-3	-	260	180	132	-	103	-	4.6	270	
	SSM3J134TU	$	-20	+/-8	-3.2	-	240	168	123	-	93	-	4.7	290	
	SSM3J144TU	# $	-20	+6/-8	-3.2	-	240	168	123	-	93	-	4.7	290	
	SSM3J120TU ●	$	-20	+/-8	-4	-	140	78	49	38	-	-	22.3	1484	⇒ SSM3J133TU
	SSM3J130TU	$	-20	+/-8	-4.4	-	63.2	41.1	31	-	25.8	-	24.8	1800	
	SSM3J140TU	# $	-20	+6/-8	-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	+6/-8	-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	SSM6J50TU ●	$	-20	+/-10	-2.5	-	-	205 (@-2 V)	100	-	64	-	-	800	⇒ SSM6J422TU
	SSM6J422TU	# $	-20	+6/-8	-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	+6/-8	-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	

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

Package Dimensions (unit: mm)

UDFN6B (SOT-1220)	SOT-23F	S-Mini (SOT-346)	TSOP6F
Bottom View 			
2.0 x 2.0	2.9 x 2.4	2.9 x 2.5	2.9 x 2.8

P-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			
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	+20/-25	-10	-	-	-	-	32	28	20	13.6	1150	
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	+6/-8	-3.9	-	240	168	123	-	93	-	4.6	290	
	SSM3J331R $	-20	+/-8	-4	-	150	100	75	-	55	-	10.4	630	
	SSM3J371R # $	-20	+6/-8	-4	-	150	100	75	-	55	-	10.4	630	
	SSM3J328R $	-20	+/-8	-6	-	88.4	56	39.7	-	29.8	-	12.8	840	
	SSM3J378R # $	-20	+6/-8	-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	+10/-20	-4	-	-	-	-	136	105	71	5.9	280	
	SSM3J340R $	-30	+20/-25	-4	-	-	-	-	86	73	45	6.2	492	
	SSM3J332R $	-30	+/-12	-6	-	-	144	72	-	50	42	8.2	560	
	SSM3J372R # $	-30	+6/-12	-6	-	-	144	72	-	50	42	8.2	560	
	SSM3J356R # $	-60	+10/-20	-2	-	-	-	-	400	360	300	8.3	330	
	SSM3J351R # $	-60	+10/-20	-3.5	-	-	-	-	184	164	134	15.1	660	
S-Mini	SSM3J325F $	-20	+/-8	-2	-	311	231	179	-	150	-	4.6	270	
	SSM3J375F # $	-20	+6/-8	-2	-	311	231	179	-	150	-	4.6	270	
	SSM3J352F $	-20	+/-12	-2	-	-	443	199	-	136	110	5.1	210	
	SSM3J353F $	-30	+20/-25	-2	-	-	-	-	274	232	150	3.4	159	
TSOP6F	SSM6J801R $	-20	+6/-8	-6	-	88.4	56	39.7	-	32.5	-	12.8	840	
	SSM6J825R ☆ $	-30	+10/-20	-4	-	-	-	-	86	73	45	6.2	492	
	SSM6J808R #	-40	+10/-20	-7	-	-	-	-	52	48	35	24.2	1020	

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

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  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	Bottom View  1.5 x 1.0

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			
CST3	SSM3K56CT	$	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	
	SSM3K56ACT	$	20	+/-8	1.4	-	840	480	300	-	235	-	1	55	
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	
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	
	SSM3K43FS	● $	20	+/-10	0.5	-	1520	1140	850	-	660	630 (@5 V)	1.23	46	⇒ SSM3K56FS
	SSM3K56FS	$	20	+/-8	0.8	-	840	480	300	-	235	-	1	55	
ES6	SSM6K204FE	● $	20	+/-10	2	-	307	214	164	126	-	-	3.4	195	⇒ SSM3K122TU
	SSM6K211FE	● $	20	+/-10	3.2	-	118	82	59	-	47	-	10.8	510	⇒ SSM3K121TU
	SSM6K24FE	● $	30	+/-12	0.5	-	-	-	180	-	145	-	-	245	⇒ SSM3K127TU
	SSM6K208FE	● $	30	+/-12	1.9	-	-	296	177	133	-	-	1.9	123	⇒ SSM3K127TU
	SSM6K202FE	● $	30	+/-12	2.3	-	-	145	101	85	-	-	-	270	⇒ SSM3K116TU
	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	

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

Package Dimensions (unit: mm)

SOT-23F	TSOP6F	UDFN6B (SOT-1220)
		Bottom View 
2.9 x 2.4	2.9 x 2.8	2.0 x 2.0

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			
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	
	SSM6K341NU $	60	+/-20	6	-	-	-	-	69	51	36	9.3	550	
	SSM6K361NU $	100	+/-20	3.5	-	-	-	-	-	92	69	3.2	430	
SOT-23F	SSM3K344R $	20	+/-8	3	-	232	139	91	-	71	-	2	153	
	SSM3K345R $	20	+/-8	4	-	108	74	45	-	33	-	3.6	410	
	SSM3K329R ● $	30	+/-12	3.5	-	-	289	170	126	-	-	1.5	123	⇒ SSM3K376R
	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	
	SSM3K318R # $	60	+/-20	2.5	-	-	-	-	-	145	107	7	235	
	SSM3K341R # $	60	+/-20	6	-	-	-	-	69	51	36	9.3	550	T_{ch} = 175 °C
	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	
	SSM6K809R # $	60	+/-20	6	-	-	-	-	69	51	36	9.3	550	T_{ch} = 175 °C
	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, ● Recommended Another New Product
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 MOSFET

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	
	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	
	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	+6/-12	-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	-	2.5	280	Automotive equipment
		XSM6N67NW ★ # $	30	+12/-8	4	-	-	82	53	-	39.1	-	3.2	310	
UF6	P-ch x 2	SSM6P54TU ● $	-20	+/-8	-1.2	-	555	350	228	-	-	-	7.7	331	⇒ SSM6P39TU
		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	

● Recommended Another New Product
★ 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 MOSFET

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)							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			
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	+6/-12	-4	-	-	157	76	-	56	45	6.7	480	
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
AEC-Q101 qualified, $ 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 MOSFET

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	-	
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 (General purpose) ⇒ SSM3J35MFV,L3XGF(T (Automotive equipment)
	SSM3J36MFV # $	-20	+/-8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	⇒ SSM3J56MFV (General purpose) ⇒ SSM3J36MFV,LXGF(T (Automotive equipment)
	SSM3J16FV ● $	-20	+/-10	-0.1	-	45	-	12	8	-	-	⇒ SSM3J35MFV
	SSM3J35AMFV $	-20	+/-10	-0.25	20	4	2.9	2.1	-	1.4	-	
	SSM3J15FV # $	-30	+/-20	-0.1	-	-	-	32	12	-	-	
SSM	SSM3J35FS # $	-20	+/-10	-0.1	44	22	-	11	8	-	-	⇒ SSM3J35AFS (General purpose) ⇒ SSM3J35FS,LXGF(T (Automotive equipment)
	SSM3J35AFS $	-20	+/-10	-0.25	20	4	2.9	2.1	-	1.4	-	
	SSM3J36FS # $	-20	+/-8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	
	SSM3J16FS ● $	-20	+/-10	-0.1	-	45	-	12	8	-	-	⇒ SSM3J35FS
	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	SSM3J16FU ● $	-20	+/-10	-0.1	-	45	-	12	8	-	-	⇒ SSM3J35FS
	SSM3J15FU # $	-30	+/-20	-0.1	-	-	-	32	12	-	-	
	SSM3J09FU ● $	-30	+/-20	-0.2	-	-	-	6 (@-3.3 V)	4.2	-	2.7	⇒ SSM3J15FU
S-Mini	SSM3J15F # $	-30	+/-20	-0.1	-	-	-	32	12	-	-	
	2SJ305 $	-30	+/-20	-0.2	-	-	-	4	-	-	-	
	2SJ168 ● $	-60	+/-20	-0.2	-	-	-	-	-	-	2	⇒ SSM3J168F
	SSM3J168F # $	-60	+10/-20	-0.4	-	-	-	-	2	1.9	1.55	

● 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 MOSFET

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	SSM3K16CTC ● $	20	+/-10	0.2	-	5.6	4	3	-	2.2	-	-	⇒ SSM3K16CT
	SSM3K35CTC $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
	SSM3K15ACTC $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	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	-	-	
	SSM3K15CT ● $	30	+/-20	0.1	-	-	-	7	4	-	-	-	⇒ SSM3K15ACT
	SSM3K15ACT $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	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 (General purpose) ⇒ SSM3K35MFV,L3XGF(T (Automotive equipment)
	SSM3K37MFV $	20	+/-10	0.25	-	5.6	4.05	3.02	-	2.2	-	-	
	SSM3K35AMFV $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
	SSM3K15AMFV $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	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 (General purpose) ⇒ SSM3K35FS,LXGF(T (Automotive equipment)
	SSM3K37FS $	20	+/-10	0.2	-	5.6	4.05	3.02	-	2.2	-	-	
	SSM3K35AFS $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
	SSM3K15FS ● # $	30	+/-20	0.1	-	-	-	7	4	-	-	-	⇒ SSM3K15AFS (General purpose) ⇒ SSM3K44FS,LXGF(T (Automotive equipment)
	SSM3K44FS # $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
	SSM3K15AFS $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	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 (General purpose) ⇒ SSM3K15FU,LXGF(T (Automotive equipment)
	SSM3K15AFU $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
	SSM3K48FU ● $	30	+/-20	0.1	-	-	-	5.4	3.2	-	-	-	⇒ SSM3K15AFU
	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	

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

Package Dimensions (unit: mm)

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 MOSFET

Package	Polarity	Part Number	V_{DSS} (V)	V_{GSS} (V)	I_D (A)	$R_{DS(ON)}$ max (Ω) $\lvert V_{GS}\rvert$ = 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	$\lvert V_{GS}\rvert$ = 5 V	$\lvert V_{GS}\rvert$ = 10 V	Note
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 (General purpose) ⇒ SSM6P35FE,LXGM(T (Automotive equipment)
		SSM6P35AFE $	-20	+/-10	-0.25	20	4	2.9	2.1	-	1.4	-	-	
		SSM6P36FE # $	-20	+/-8	-0.33	-	3.6	2.7	1.6 (@-2.8 V)	-	1.31	-	-	
		SSM6P16FE ● $	-20	+/-10	-0.1	-	45	-	12	8	-	-	-	⇒ SSM6P35AFE
		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 (General purpose) ⇒ SSM6N35FE,LXGM(T (Automotive equipment)
		SSM6N37FE $	20	+/-10	0.25	-	5.6	4.05	3.02	-	2.2	-	-	
		SSM6N35AFE $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
		SSM6N44FE # $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
		SSM6N15AFE $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
		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	-	-	

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

Package Dimensions (unit: mm)

US6
(SOT-363)

2.0 x 2.1

Dual MOSFET

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 (General purpose) ⇒ SSM6P35FU,LXGF(T (Automotive equipment)
		SSM6P35AFU $	-20	+/-10	-0.25	20	4	2.9	2.1	-	1.4	-	-	
		SSM6P16FU ● $	-20	+/-10	-0.1	-	45	-	12	8	-	-	-	⇒ SSM6P35AFU
		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 (General purpose) ⇒ SSM6N35FU,LXGF(T (Automotive equipment)
		SSM6N35AFU $	20	+/-10	0.25	9	3.1	2.4	1.6	-	1.1	-	-	
		SSM6N37FU $	20	+/-10	0.25	-	5.6	4.05	3.02	-	2.2	-	-	
		SSM6N48FU ● $	30	+/-20	0.1	-	-	-	5.4	3.2	-	-	-	⇒ SSM6N15AFU
		SSM6N44FU # $	30	+/-20	0.1	-	-	-	7	4	-	-	-	
		SSM6N15FU ● $	30	+/-20	0.1	-	-	-	7	4	-	-	-	⇒ SSM6N15AFU
		SSM6N15AFU $	30	+/-20	0.1	-	-	-	6	3.6	-	-	-	
		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	-	-	-	
		SSM6L09FU ● $	30	+/-20	0.4	-	-	-	1.7 (@3.3 V)	1.2	-	-	0.7	⇒ SSM6L40TU
			-30	+/-20	-0.2	-	-	-	6 (@-3.3 V)	4.2	-	-	2.7	

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

MOSFET 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	SSM5H08TU ● $	20	+/-12	1.5	-	-	220	160	-	-	-	125	20	0.5	0.43 (typ.)	0.5	⇒ SSM3K122TU+ CUS05F30
		SSM5H01TU ● $	30	+/-20	1.4	-	-	-	450	-	-	200	106	20	0.5	0.43 (typ.)	0.5	⇒ SSM3K131TU+ CUS05F30
		SSM5H11TU ● $	30	+/-20	1.6	-	-	-	182	-	-	122	180	30(¥)	0.7(¥¥)	0.44	0.7	⇒ SSM3K131TU+ CUS08F30
		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	

● Recommended Another New Product
$ 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)
		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 		

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Bias Resistor Built-in Transistors (BRTs)

Package Dimensions (unit: mm)

|V_{CEO}| (V)	|I_C| (mA)	Resistance		VESM (SOT-723)		SSM (SOT-416)		USM (SOT-323)		S-Mini (SOT-346)	
				1.2 x 1.2		1.6 x 1.6		2.0 x 2.1		2.9 x 2.5	
											
		R1 typ. (kΩ)	R2 typ. (kΩ)	NPN	PNP	NPN	PNP	NPN	PNP	NPN	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 #	-	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		SOT23 (SOT-23)	
				2.9 x 2.4	
					
		R1 typ. (kΩ)	R2 typ. (kΩ)	NPN	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		S-Mini (SOT-346)	
				2.9 x 2.5	
					
		R1 typ. (kΩ)	R2 typ. (kΩ)	NPN	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

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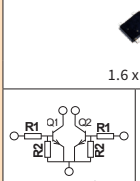
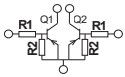
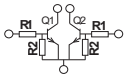
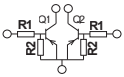
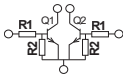
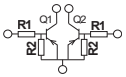
Package Dimensions (unit: mm)

$\|V_{CEO}\|$ (V)	$\|I_C\|$ (mA)	Resistance R1 typ. (kΩ)	Resistance R2 typ. (kΩ)	ESV (SOT-553) 1.6 x 1.6		USV (SOT-353) 2.0 x 2.1		SMV (SOT-25) 2.9 x 2.8	
				 Common emitter	 Common emitter	 Common emitter	 Common emitter	 Common emitter	 Common emitter
				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 R1 typ. (kΩ)	Resistance R2 typ. (kΩ)	ES6 (SOT-563) 1.6 x 1.6			
				 Point symmetrical	 Point symmetrical	 Point symmetrical	 Point symmetrical
				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 R1 typ. (kΩ)	Resistance R2 typ. (kΩ)	US6 (SOT-363) 2.0 x 2.1 Point symmetrical	US6 (SOT-363) 2.0 x 2.1 Point symmetrical	US6 (SOT-363) 2.0 x 2.1 Point symmetrical	US6 (SOT-363) 2.0 x 2.1 Point symmetrical
				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 R1 typ. (kΩ)	Resistance R2 typ. (kΩ)	SM6 (SOT-26) 2.9 x 2.8 Point symmetrical	SM6 (SOT-26) 2.9 x 2.8 Point symmetrical	SM6 (SOT-26) 2.9 x 2.8 Point symmetrical
				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			
														
									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
	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)						
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		

☆ New Products

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_F			I_R max (μA)		C_t typ. (pF)	Bottom View	Bottom View			
	V_R (V)	I_O (A)	typ. (V)	max (V)	@I_F (A)		@V_R (V)		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_F			I_R max (μA)		C_t typ. (pF)	2.9 x 2.5	2.0 x 2.1
	V_R (V)	I_O (A)	typ. (V)	max (V)	@I_F (A)		@V_R (V)			
Low-I_R High Speed	20	0.1	0.5	0.55	0.1	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_F			I_R max (μA)		C_t typ. (pF)	Bottom View	Bottom View			
	V_R (V)	I_O (A)	typ. (V)	max (V)	@I_F (A)		@V_R (V)		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 ☆		

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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	CST2C (SOD-963)	ESC (SOD-523)
							Bottom View  0.62 x 0.32	Bottom View  1.0 x 0.6	 1.0 x 0.6	Bottom View  1.6 x 0.8	 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				
	USB2.0	±10	1.5	5.5	1.5	0.25	DF2B6USL				
	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	9	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 ☆				
	Power Supply USB_V_{BUS}	±30	80	5.5	600	0.08				DF2S6P2CTC	
		±30	60	10	280	0.08				DF2S12P2CTC ☆	
		±30	14	21	160	0.13				DF2S23P2CTC	

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● 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)			DFN5 Bottom View 1.3 x 0.8	DFN6 Bottom View 1.25 x 1.0	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)			
Bi-directional	USB3.1 / Thunderbolt™ / RF antenna	±20	2	3.6	0.2	0.5 to 0.8	DF5G5M4N ☆	DF6D5M4N ☆	DF10G5M4N ☆
		±20	2	5.5	0.2	0.5 to 0.8	DF5G6M4N ☆	DF6D6M4N ☆	DF10G6M4N ☆

Application		Absolute Maximum Ratings		Electrical Characteristics (Ta = 25 °C)			DFN5 Bottom View 1.3 x 0.8	DFN6 Bottom View 1.25 x 1.0	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)			
Bi-directional	USB3.1 / Thunderbolt™ / RF antenna	±12	2.5	5.5	0.2	1	DF5G7M2N ☆		
		±8	-	5	0.3	0.9		DF6D7M1N ☆	
		±8	-	5	0.3	0.9			DF10G7M1N ☆

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 ☆

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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	

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Zener Diodes for Over Voltage Protection

Package Dimensions (unit: mm)

General type

Application	Electrical Characteristics (Ta = 25 °C)					ESC (SOD-523)	USC (SOD-323)	USM (SOT-323)	S-Mini (SOT-346)	SOT23 (SOT-23)
										
						1.6 x 0.8	2.5 x 1.25	2.0 x 2.1	2.9 x 2.5	2.9 x 2.4
						P_D = 150 mW*	P_D = 200 mW*	P_D = 150 mW*	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	CEZ5V6 ☆	CUZ5V6 ☆	MUZ5V6 ☆	MSZ5V6 ☆	MKZ5V6 ☆
	6.2	5.8 to 6.6	5	2.5	5	CEZ6V2 ☆	CUZ6V2 ☆	MUZ6V2 ☆	MSZ6V2 ☆	MKZ6V2 ☆
	6.8	6.4 to 7.2	5	1.5	5.5	CEZ6V8 ☆	CUZ6V8 ☆	MUZ6V8 ☆	MSZ6V8 ☆	MKZ6V8 ☆
	8.2	7.7 to 8.7	5	0.1	7	CEZ8V2 ☆	CUZ8V2 ☆	MUZ8V2 ☆	MSZ8V2 ☆	MKZ8V2 ☆
	12	11.4 to 12.6	5	0.1	10	CEZ12V ☆	CUZ12V ☆	MUZ12V ☆	MSZ12V ☆	MKZ12V ☆
	16	15.3 to 17.1	5	0.1	14	CEZ16V ☆	CUZ16V ☆	MUZ16V ☆	MSZ16V ☆	MKZ16V ☆
	20	18.8 to 21.2	5	0.1	17.6	CEZ20V ☆	CUZ20V ☆	MUZ20V ☆	MSZ20V ☆	MKZ20V ☆
	24	22.8 to 25.6	5	0.1	19	CEZ24V ☆	CUZ24V ☆	MUZ24V ☆	MSZ24V ☆	MKZ24V ☆
	30	28 to 32	2	0.1	27	CEZ30V ☆	CUZ30V ☆	MUZ30V ☆	MSZ30V ☆	MKZ30V ☆
	36	34 to 38	2	0.1	32.5	CEZ36V ☆	CUZ36V ☆	MUZ36V ☆	MSZ36V ☆	MKZ36V ☆

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 ☆

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, CE: CL2E

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

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  0.645 x 0.645	Bottom View  0.645 x 0.645	Bottom View  0.8 x 0.8	Bottom View  1.0 x 1.0	Bottom View  1.0 x 1.0	Bottom View  1.0 x 1.0	Bottom View  1.2 x 1.2	 1.6 x 1.6	 2.0 x 2.1	 2.9 x 2.8	Bottom View  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	✓	✓ (A version)	✓	✓	✓			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
TCR3DMxxx	DFN4E	1 to 4.5	1.75 to 5.5	300	65	✓	✓	✓	✓	✓			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
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
★ Under development (The specification is subject to change without notice.)

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	✓						Pull down (H)	Ultra small Iq 0.08 nA
TCK127BG ☆						✓			✓			Pull down (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)	

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

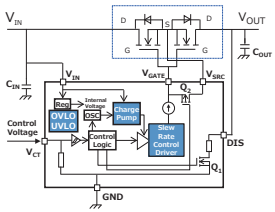
N-ch MOSFET Gate driver ICs with OVP function

Package Dimensions (unit: mm)

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

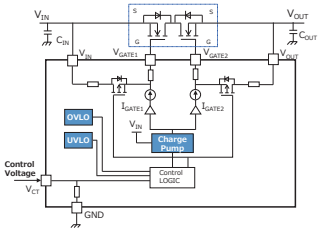
Part Number	Package	Operating voltage range (V)	Input quiescent current (ON state)	Gate drive voltage (1)	Gate drive voltage (2)	Function						Note
						Inrush current reduction	Under voltage lockout	Over voltage lock out (Typ.)	Auto discharge	Reverse current block	Control pin connection (Active Level)	
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

☆ New Products

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 Operation Monitored input	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
Bottom View  3.0 x 3.0	Bottom View  3.0 x 3.0	Bottom View  2.0 x 2.0

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	

☆ New Products
★ Under development (The specification is subject to change without notice.)
* 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	ESV (SOT-553)	USV (SOT-353)	UFV (SOT-353F)	SMV (SOT-25)	US8 (SOT-765)	SM8 (SOT-505)
Bottom View 						
1.45 x 1.0	1.6 x 1.6	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	ESV				TC75S103FE ★	TC75S102FE ★		
	USV	TC75S51FU	TC75S54FU	TC75S55FU				
	UFV				TC75S103TU ★	TC75S102TU ★	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				
		Standard	Push pull			Open drain	
			Full-range input/output	Low I_{DD}	High speed	Low I_{DD}	High speed
Single	MP6C		TC75S70L6X				
	USV			TC75S56FU	TC75S57FU	TC75S58FU	TC75S59FU
	SMV	TA75S393F		TC75S56F	TC75S57F	TC75S58F	TC75S59F
Dual	US8			TC75W56FK	TC75W57FK	TC75W58FK	TC75W59FK
	SM8	TA75W393FU		TC75W56FU	TC75W57FU	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	±3.5 or 7 V	±3.5 or 7 V
Test condition		V_{CC} = 5 V	V_{DD} = 3 V	V_{DD} = 5 V	V_{DD} = 5 V	V_{DD} = 5 V	V_{DD} = 5 V
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	22 μA @Single 44 μA @Dual	220 μA @Single 440 μA @Dual
I_{sink} (typ.)		16 mA	18 mA	25 mA	25 mA	25 mA	25 mA
I_{source} (typ.)			15 mA	21 mA	21 mA		
G_V (typ.)		200 V / mV		94 dB	94 dB	94 dB	94 dB
t_{rsp}, t_{PLH} (typ.)		1.3 μs	400 ns	680 ns	140 ns	800 ns	200 ns

☆ New Products, ★ Under Development (The specification is subject to change without notice.)

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. Logic Devices

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 ☆	
	NOR Gate		7UL1G02FS ☆	7UL1G02FU	7UL2G02FK ☆	
	Inverter		7UL1G04FS ☆	7UL1G04FU	7UL3G04FK ☆	7UL1G04NX ☆
		Unbuffered	7UL1GU04FS ☆	7UL1GU04FU	7UL3GU04FK ☆	7UL1GU04NX ★
	AND Gate		7UL1G08FS ☆	7UL1G08FU	7UL2G08FK ☆	
	Schmitt Inverter		7UL1G14FS ☆	7UL1G14FU	7UL3G14FK ☆	7UL1G14NX ★
	Schmitt Buffer		7UL1G17FS ☆	7UL1G17FU	7UL3G17FK ☆	7UL1G17NX ★
	OR Gate		7UL1G32FS ☆	7UL1G32FU	7UL2G32FK ☆	
	Buffer		7UL1G34FS ☆	7UL1G34FU	7UL3G34FK ☆	7UL1G34NX ★
		Open drain		7UL1G07FU		
	Exclusive-OR		7UL1G86FS ☆	7UL1G86FU	7UL2G86FK ☆	
	3-State Buffer(/G)		7UL1G125FS ☆	7UL1G125FU	7UL2G125FK ☆	7UL1G125NX ☆
	3-State Buffer(G)		7UL1G126FS ☆	7UL1G126FU	7UL2G126FK ☆	

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)
		
1.0 x 1.0	2.0 x 2.1	2.0 x 3.1

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

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

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

- 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					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 †			

†‡ 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

- 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				Pin	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					-	-	-
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 ‡
Multivi-brator		Dual	Retriggerable / Resettable	16	74HC4538FT		
Decoder	3 to 8 line	Single		16			74LCX138FT †
Multi-plexer	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		

†‡ This device is compliant with the reliability requirements of AEC-Q100
‡ Operation temperature is -40 to 85 °C
& The package for this product is TSSOP14 / 16.

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 (SOIC14 / 16 / 20, SOP14 / 16 / 20 Package Products)

Package Dimensions (unit: mm)

SOIC14	SOIC16	SOIC20	SOP14	SOP16	SOP20
					
8.65 x 6.0	9.9 x 6.0	12.8 x 10.3	10.3 x 7.8	10.3 x 7.8	12.8 x 7.8

Series name					SOIC Package		SOP Package		
					HC	HCT (TTL Input)	HC	HCT (TTL Input)	Standard series
Characteristics and Features		Supply voltage range			2 to 6 V	4.5 to 5.5 V	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	±4 or ±6 mA	±4 or ±6 mA	±0.51 mA (@V_{CC} = 5 V)
		Power down protection on inputs			No		No		No
		Power down protection on outputs			No		No		No
Function				Pin	-	-	-	-	-
Gate / Buffer	NAND	Quad		14	74HC00D †		TC74HC00AF		TC4011BF
			Open-drain	14	74HC03D †				
			Schmitt	14			TC74HC132AF		TC4093BF
		Dual	4-input	14			TC74HC20AF		
	AND	Quad		14	74HC08D †		TC74HC08AF		TC4081BF
		Dual	4-input	14			TC74HC21AF		
	NOR	Quad		14			TC74HC02AF		TC4001BF
	OR	Quad		14	74HC32D †		TC74HC32AF		TC4071BF
	Exclusive-OR	Quad		14	74HC86D †				TC4030BF
	Inverter	Hex		14	74HC04D †	74HCT04D †	TC74HC04AF	TC74HCT04AF	TC4069UBF
				16			TC74HC4049AF		TC4049BF
			Unbuffer	14			TC74HCU04AF		
			Open-drain	14	74HC05D †		TC74HC05AF		
			Schmitt	14	74HC14D †	74HCT14D †	TC74HC14AF		TC4584BF
	Buffer	Hex		16			TC74HC4050AF		TC4050BF
			Open-drain	14			TC74HC07AF		
	3-state Buffer	Quad		14	74HC125D †		TC74HC125AF		
				14	74HC126D †		TC74HC126AF		
		Hex	Universal	14			TC74HC365AF		
				14			TC74HC366AF		
				14				TC74HCT7007AF	
		Octal	Inverted	20		74HCT240D †	TC74HC240AF	TC74HCT240AF	
				20		74HCT540D †	TC74HC540AF	TC74HCT540AF	
				20			TC74HC7240AF		
				20		74HCT244D †	TC74HC241AF TC74HC244AF	TC74HCT244AF	
				20			TC74HC7244AF		
				20		74HCT541D	TC74HC541AF	TC74HCT541AF	
	Transceiver	Octal	Inverted	20			TC74HC640AF		
			Non-inverted	20	74HC245D †	74HCT245D †	TC74HC245AF		
Flip-Flop		Dual		14			TC74HC74AF		TC4013BF
		Hex		16	74HC175D †		TC74HC175AF		
		Octal		20	74HC273D †		TC74HC273AF		
	3-state	Octal		20	74HC374D †		TC74HC374AF		
				20	74HC574D †		TC74HC574AF		
Latch	8-Bit Addressable Latch			16	74HC259D †				
	3-state	Octal		20	74HC373D †		TC74HC373AF		
				20	74HC573D †		TC74HC573AF		
Multi-vibrator	Dual Monostable			16			TC74HC123AF		
		Retriggerable		16			TC74HC423AF		
		Retriggerable/Resettable		16	74HC4538D †		TC74HC4538AF		TC4538BF
Decoder	3 to 8 line	Single		16			TC74HC42AF		
				16	74HC138D †		TC74HC138AF		
				16	74HC238D †				
	3 to 8 line / Latch			16	74HC237D †				
	BCD-to-Seven Segment Latch / Decoder / Driver			16					TC4511BF
Shift Register	8bit	S-in / P-out		14	74HC164D †				
		P-in / S-out		16			TC74HC165AF		TC4021BF
		P-in / S-out with Clear		16	74HC166D †				
		With Output Register		16	74HC594D †				
		Latch (3-state)		16	74HC595D †		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	74HC151D †		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	74HC4051D †	74HCT4051D †	TC74HC4051AF		TC4051BF
		Dual-4ch.		16	74HC4052D †	74HCT4052D †	TC74HC4052AF		TC4052BF
		Triple-2ch.		16	74HC4053D †	74HCT4053D †	TC74HC4053AF	TC74HCT4053AF	TC4053BF
Other	Analog switch Quad			14	74HC4066D †		TC74HC4066AF		TC4066BF

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

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

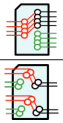
7-3 Bus Switches

High-Speed Transmission Type

Package Dimensions (unit: mm)

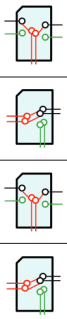
High-Speed Transmission Type

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®-Gen4 Thunderbolt 4™ DP2.0™	to 20 Gbps	TDS4A212MX ★	XQFN16	1 lane	1.6 to 3.6 V	26.2 GHz @V_{CC} = 1.6 to 3.3 V	150 µA @V_{CC} = 3.6 V		SPDT
		TDS4B212MX ★				27.5 GHz @V_{CC} = 1.6 to 3.3 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							

★ Under Development (The specification is subject to change without notice.)

General Purpose Bus Switches

Package Dimensions (unit: mm)

USV (SOT-353)	XSON6 (MP6D)	US6 (SOT-363)	US8 (SOT-765)	US14	US16	US20	TSSOP14	TSSOP16	TSSOP20
	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 †	TSSOP14						
	TC7MBL3126CFK	US14						
	TC7MBL3126CFT †	TSSOP14						
	TC7MBL3245CFK	US20	8					
	TC7MBL3245CFT †	TSSOP20						
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 †	TSSOP16						
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 †	TSSOP16						

† This device is compliant with the reliability requirements of AEC-Q100 (Operating temperature: T_{opr} = -40 to 125 °C)
‡ Operation temperature is -40 to 125 °C

7-4 Level Shifters

Package Dimensions (unit: mm)

fSV (SOT-953)	UF6 (SOT-363F)	USV (SOT-353)	US8 (SOT-765)	US16	TSSOP16	TSSOP20	TSSOP48
							
1.0 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	6.5 x 6.4	12.5 x 8.1

Bus Buffer Type

Direction	Part Number	Package	Bit Count	Control Input	Function					
					Supply Voltage Range		Gate or Buffer	Sleep Mode	Low Noise	Series Resistor
					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 †	TSSOP16						✓		
	TC7MPN3125FK	US16						✓	✓	
	TC7MPN3125FT †	TSSOP16						✓	✓	
	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 ‡									✓
	TC74LCX164245 ‡				2.3 to 3.6	4.5 to 5.5				
	TC74LCXR164245 ‡									✓
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 †	TSSOP16	4	Active-Low	1.65 to 5.5	- (Single Supply)	3-State Buffer			
	74LV4T125FK ‡	US16								
	74LV4T126FT †	TSSOP16		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						
	7UL1T00FU ☆ ‡	USV	1	None			NAND			
	7UL1T02FU ☆ ‡						NOR			
	7UL1T04FU ☆ ‡						Inverter			
	7UL1T08FU ☆ ‡						AND			
	7UL1T32FU ☆ ‡						OR			
	7UL1T34FU ☆ ‡						Buffer			
	7UL1T86FU ☆ ‡						Exclusive-OR			
	7UL1T125FU ☆ ‡			Active-Low			3-State Buffer			
	7UL1T126FU ☆ ‡			Active-High						

☆ New Products
† This device is compliant with the reliability requirements of AEC-Q100 (Operating temperature: T_{opr} = -40 to 125 °C)
‡ Operation temperature is -40 to 125 °C

Package Dimensions (unit: mm)

UF6 (SOT-363F)	US8 (SOT-765)	US14	US20	TSSOP14	TSSOP20
					
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 Buffer Type

Direction	Part Number	Package	Bit Count	Control Input	Function					
					Supply Voltage Range		Gate or Buffer	Sleep Mode	Low Noise	Series Resistor
					V_{CCA} (V)	V_{CCB} (V)				
Unidirectional	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						

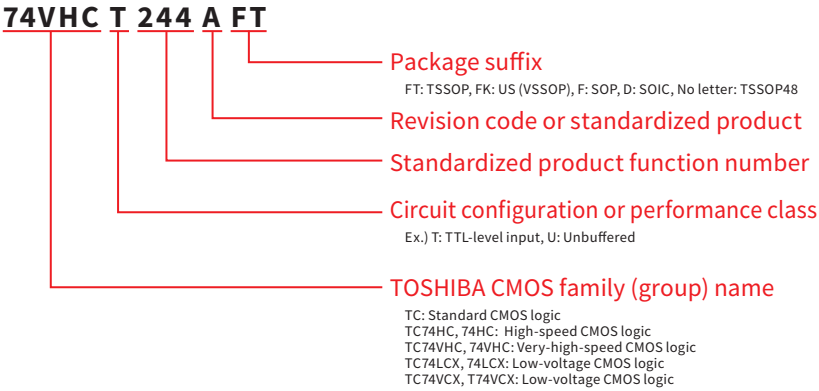
Bus Switch Type

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 †	TSSOP14						
	TC7QPB9307FK	US14		Active-Low (A side)				
	TC7QPB9307FT †	TSSOP14						
	TC7MPB9307FK	US20	8	Active-Low (A side)				
	TC7MPB9307FT †	TSSOP20						
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 †	TSSOP14						
	TC7MPB9327FK	US14		Active-Low (A side)				
	TC7MPB9327FT †	TSSOP14						

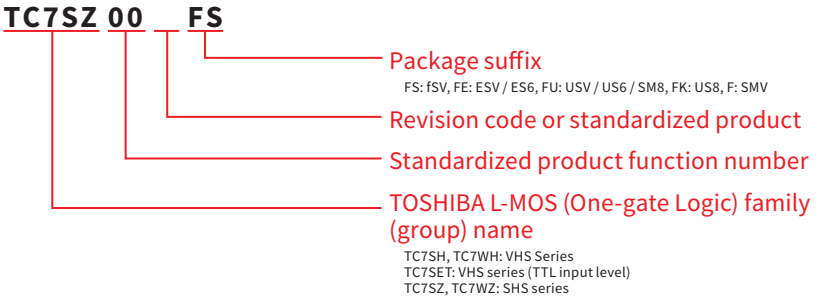
☆ New Products
† This device is compliant with the reliability requirements of AEC-Q100 (Operating temperature: T_{opr} = -40 to 125 °C)
‡ Operation temperature is -40 to 125 °C

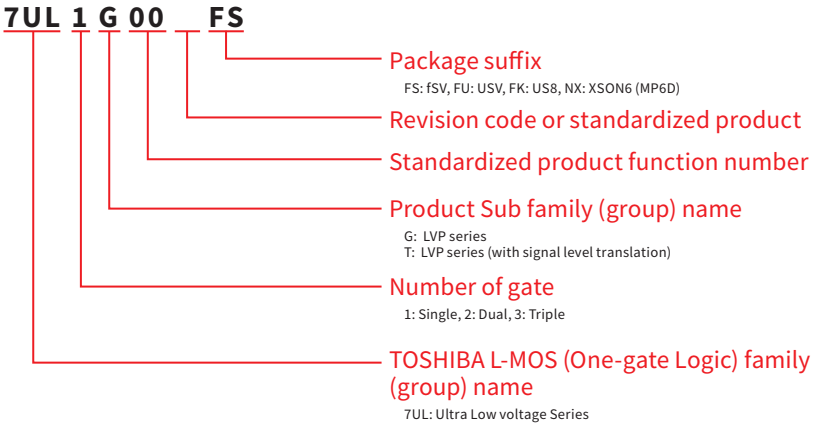
7-5 Part Naming Conventions

Standard Logic



One-Gate Logic





8. Radio-Frequency Devices

RF Diodes

Package Dimensions (unit: mm)

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

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)	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	1.6 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
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

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

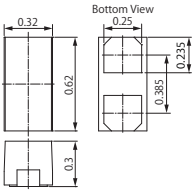
(No mark)	S-Mini
U	USC, USM
S	SSM
E	ESC
SL	SL2
FV	VESM
AFS	SOD-923

9. Device Packages

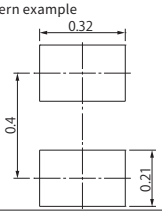
2 Pin packages

SL2 (SOD-962) (0.62 x 0.32)

Package dimension unit : mm

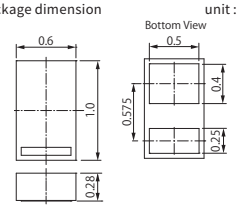


Land pattern example unit : mm

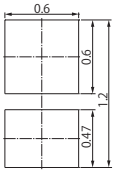


CL2E (1.0 x 0.6)

Package dimension unit : mm

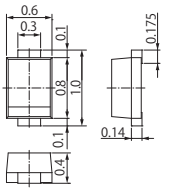


Land pattern example unit : mm

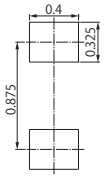


SOD-923 (1.0 x 0.6)

Package dimension unit : mm

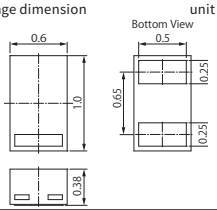


Land pattern example unit : mm

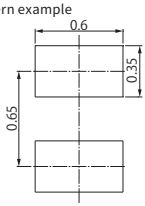


CST2 (SOD-882) (1.0 x 0.6)

Package dimension unit : mm

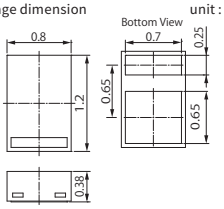


Land pattern example unit : mm

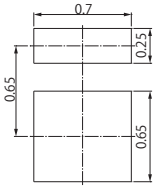


CST2B (1.2 x 0.8)

Package dimension unit : mm

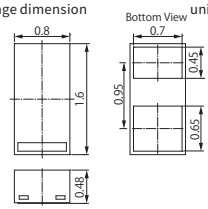


Land pattern example unit : mm

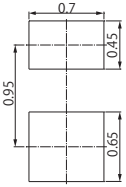


CST2C (SOD-963) (1.6 x 0.8)

Package dimension unit : mm

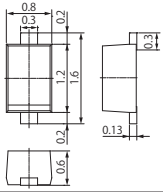


Land pattern example unit : mm

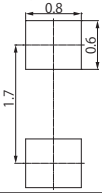


ESC (SOD-523) (1.6 x 0.8)

Package dimension unit : mm

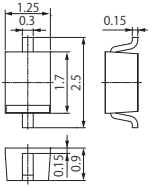


Land pattern example unit : mm

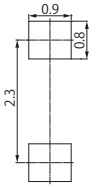


USC (SOD-323) (2.5 x 1.25)

Package dimension unit : mm

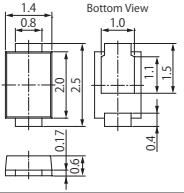


Land pattern example unit : mm

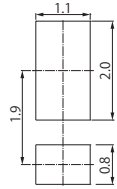


US2H (SOD-323HE) (2.5 x 1.4)

Package dimension unit : mm



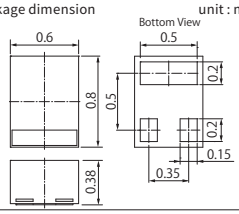
Land pattern example unit : mm



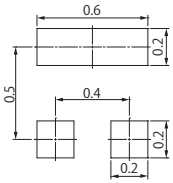
3 Pin packages

CST3C (0.8 x 0.6)

Package dimension unit : mm

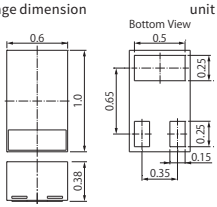


Land pattern example unit : mm

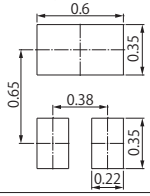


CST3 (SOT-883) (1.0 x 0.6)

Package dimension unit : mm

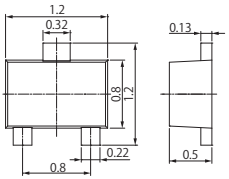


Land pattern example unit : mm

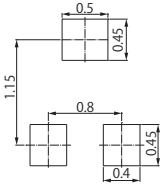


VESM (SOT-723) (1.2 x 1.2)

Package dimension unit : mm

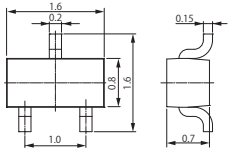


Land pattern example unit : mm

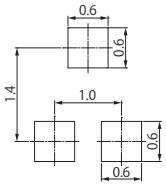


SSM (SOT-416) (1.6 x 1.6)

Package dimension unit : mm

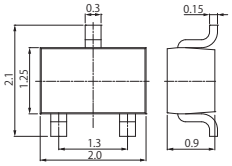


Land pattern example unit : mm

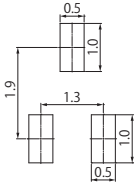


USM (SOT-323) (2.0 x 2.1)

Package dimension unit : mm

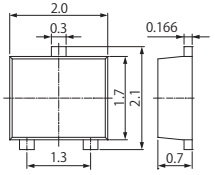


Land pattern example unit : mm

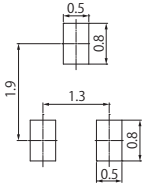


UFM (SOT-323F) (2.0 x 2.1)

Package dimension unit : mm

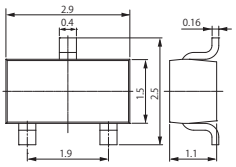


Land pattern example unit : mm

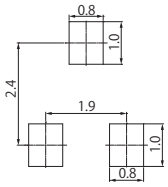


S-Mini (SOT-346) (2.9 x 2.5)

Package dimension unit : mm

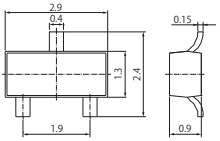


Land pattern example unit : mm

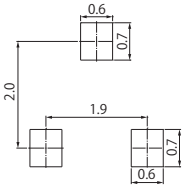


SOT23 (SOT-23) (2.9 x 2.4)

Package dimension unit : mm

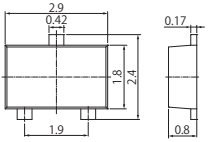


Land pattern example unit : mm

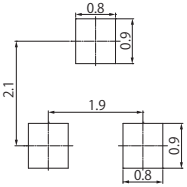


SOT-23F (2.9 x 2.4)

Package dimension unit : mm



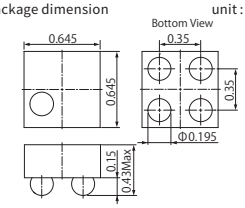
Land pattern example unit : mm



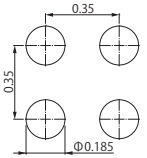
4 Pin packages

WCSP4E (0.645 x 0.645)

Package dimension unit : mm

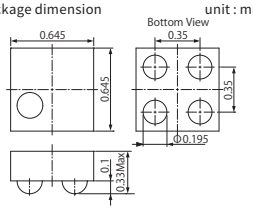


Land pattern example unit : mm

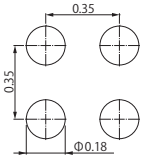


WCSP4F (0.645 x 0.645)

Package dimension unit : mm

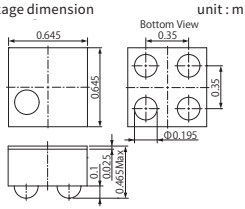


Land pattern example unit : mm

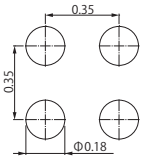


WCSP4G (0.645 x 0.645)

Package dimension unit : mm

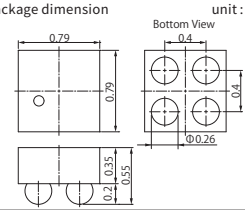


Land pattern example unit : mm

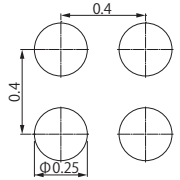


WCSP4D (0.79 x 0.79)

Package dimension unit : mm

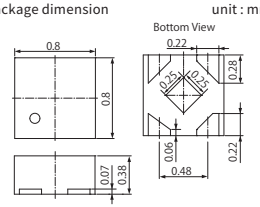


Land pattern example unit : mm

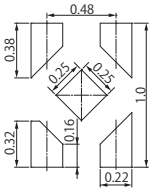


SDFN4E (0.8 x 0.8)

Package dimension unit : mm

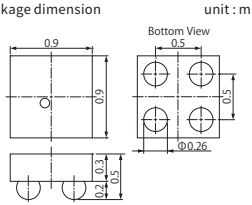


Land pattern example unit : mm

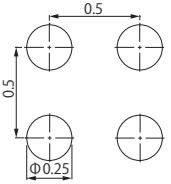


WCSP4C (0.9 x 0.9)

Package dimension unit : mm

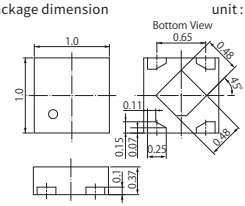


Land pattern example unit : mm

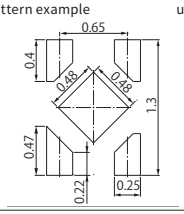


DFN4D (1.0 x 1.0)

Package dimension unit : mm

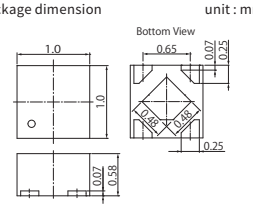


Land pattern example unit : mm

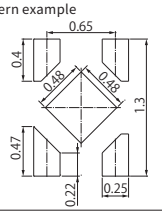


DFN4E (1.0 x 1.0)

Package dimension unit : mm

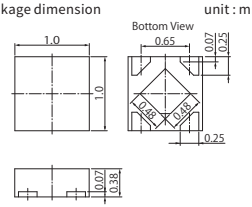


Land pattern example unit : mm

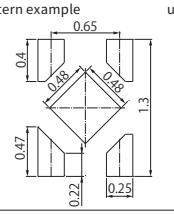


DFN4F (1.0 x 1.0)

Package dimension unit : mm



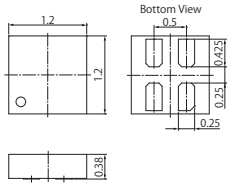
Land pattern example unit : mm



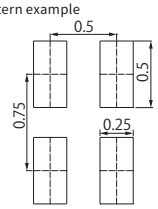
4 Pin packages

DFN4A (1.2 x 1.2)

Package dimension unit : mm

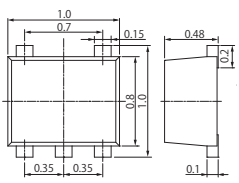


Land pattern example unit : mm

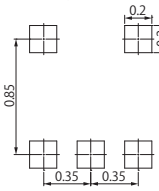


fSV (SOT-953) (1.0 x 1.0)

Package dimension unit : mm



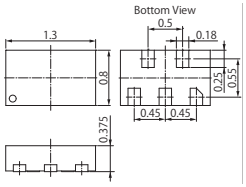
Land pattern example unit : mm



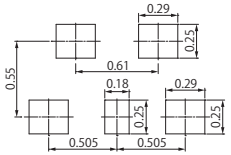
5 Pin packages

DFN5 (1.3 x 0.8)

Package dimension unit : mm

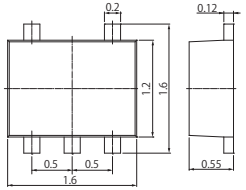


Land pattern example unit : mm

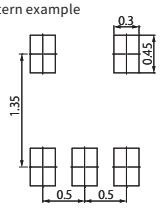


ESV (SOT-553) (1.6 x 1.6)

Package dimension unit : mm

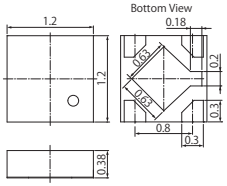


Land pattern example unit : mm

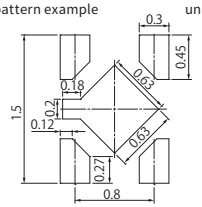


DFN5B (1.2 x 1.2)

Package dimension unit : mm

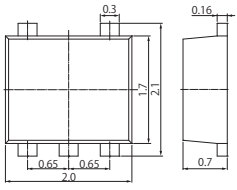


Land pattern example unit : mm



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

Package dimension unit : mm

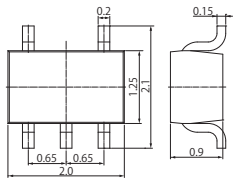


Land pattern example unit : mm

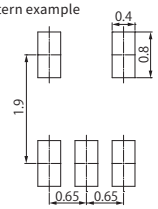
6 Pin packages

USV (SOT-353) (2.0 x 2.1)

Package dimension unit : mm

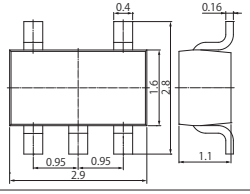


Land pattern example unit : mm

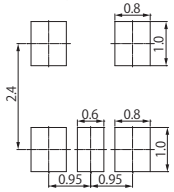


SMV (SOT-25) (2.9 x 2.8)

Package dimension unit : mm

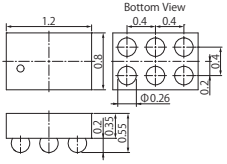


Land pattern example unit : mm

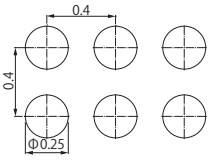


WCSP6E (1.2 x 0.8)

Package dimension unit : mm

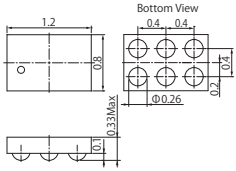


Land pattern example unit : mm

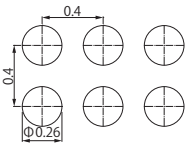


WCSP6F (1.2 x 0.8)

Package dimension unit : mm

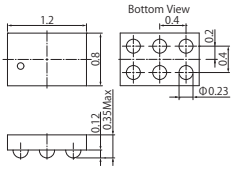


Land pattern example unit : mm

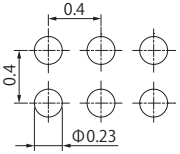


WCSP6G (1.2 x 0.8)

Package dimension unit : mm

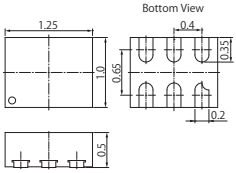


Land pattern example unit : mm

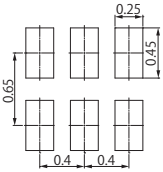


DFN6 (1.25 × 1.0)

Package dimension unit : mm

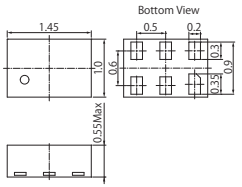


Land pattern example unit : mm

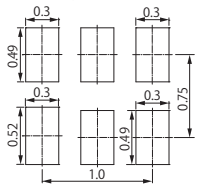


MP6C (1.45 × 1.0)

Package dimension unit : mm

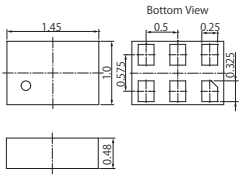


Land pattern example unit : mm

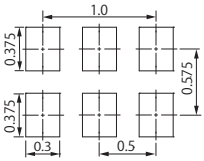


XSON6(MP6D) (1.45 × 1.0)

Package dimension unit : mm

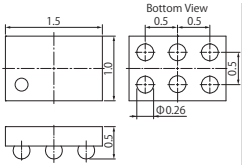


Land pattern example unit : mm

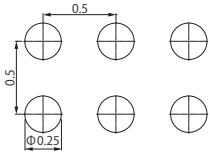


WCSP6C (1.5 x 1.0)

Package dimension unit : mm

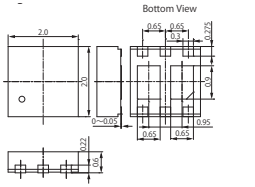


Land pattern example unit : mm

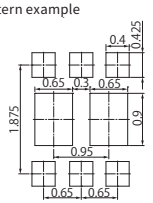


DFN2020(WF) (2.0 x 2.0)

Package dimension unit : mm

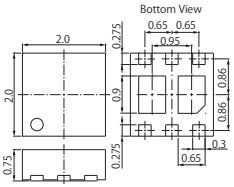


Land pattern example unit : mm

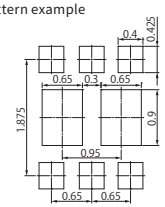


UDFN6 (SOT-1118) (2.0 x 2.0)

Package dimension unit : mm

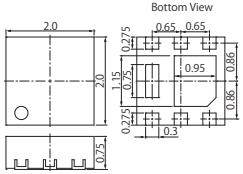


Land pattern example unit : mm

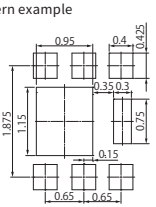


UDFN6B (SOT-1220) (2.0 x 2.0)

Package dimension unit : mm



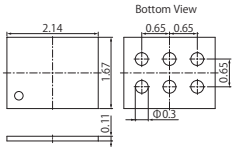
Land pattern example unit : mm



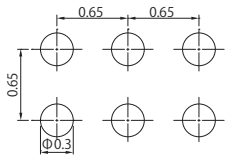
6 Pin packages

TCSP6A-172101 (2.14 x 1.67)

Package dimension unit : mm

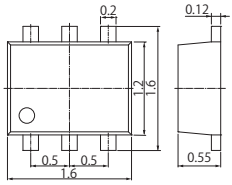


Land pattern example unit : mm

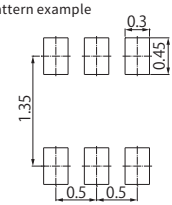


ES6 (SOT-563) (1.6 x 1.6)

Package dimension unit : mm

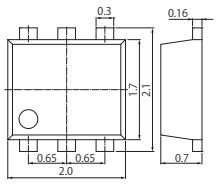


Land pattern example unit : mm

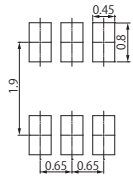


UF6 (SOT-363F) (2.0 x 2.1)

Package dimension unit : mm

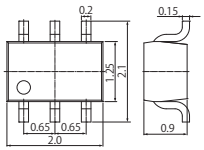


Land pattern example unit : mm

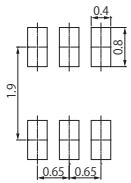


US6 (SOT-363) (2.0 x 2.1)

Package dimension unit : mm

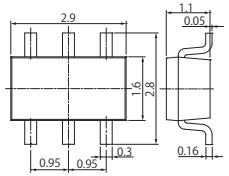


Land pattern example unit : mm

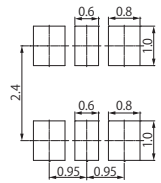


SM6 (SOT-26) (2.9 x 2.8)

Package dimension unit : mm

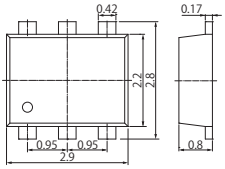


Land pattern example unit : mm

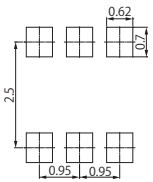


TSOP6F (2.9 x 2.8)

Package dimension unit : mm



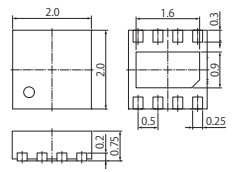
Land pattern example unit : mm



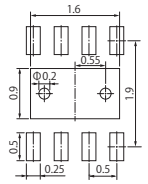
8 Pin packages

WSON8 (2.0 x 2.0)

Package dimension unit : mm

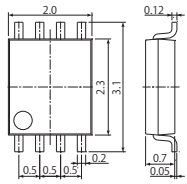


Land pattern example unit : mm

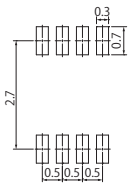


US8 (SOT-765) (2.0 x 3.1)

Package dimension unit : mm

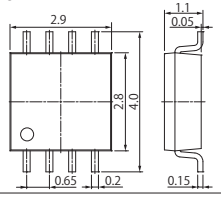


Land pattern example unit : mm

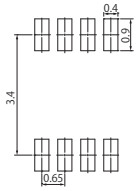


SM8 (SOT-505) (2.9 x 4.0)

Package dimension unit : mm



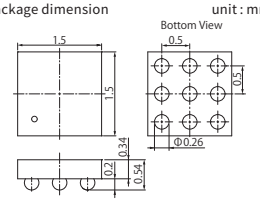
Land pattern example unit : mm



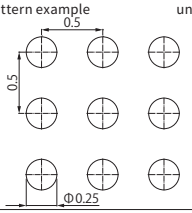
9 Pin packages

WCSP9 (1.5 x 1.5)

Package dimension unit : mm

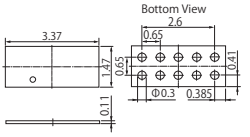


Land pattern example unit : mm

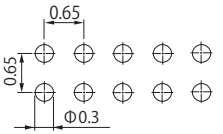


TCSPAG-341501 (3.37 x 1.47)

Package dimension unit : mm



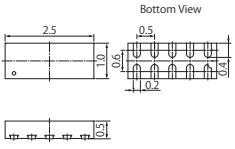
Land pattern example unit : mm



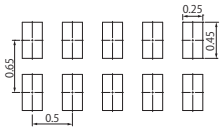
10 Pin packages

DFN10 (2.5 x 1.0)

Package dimension unit : mm

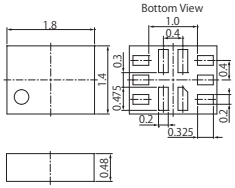


Land pattern example unit : mm

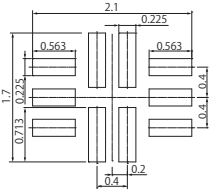


UQFN10B (1.4 x 1.8)

Package dimension unit : mm

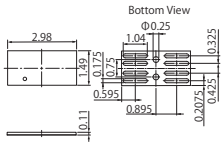


Land pattern example unit : mm

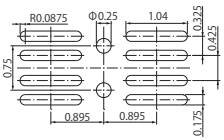


TCSPAC-153001 (2.98 x 1.49)

Package dimension unit : mm

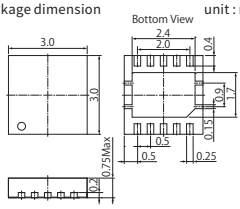


Land pattern example unit : mm

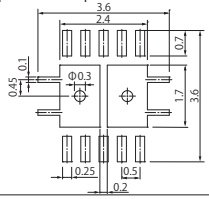


WSON10 (3.0 x 3.0)

Package dimension unit : mm



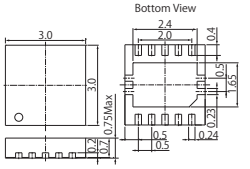
Land pattern example unit : mm



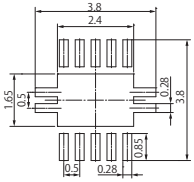
14 Pin packages

WSON10B (3.0 x 3.0)

Package dimension unit : mm

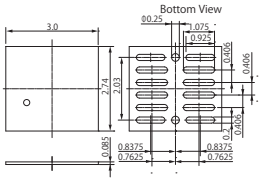


Land pattern example unit : mm

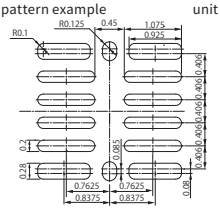


TCSPED-302701 (3.0 x 2.74)

Package dimension unit : mm

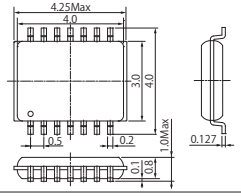


Land pattern example unit : mm

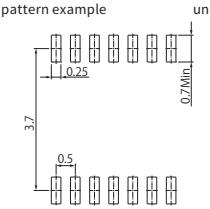


US14 (4.0 x 4.0)

Package dimension unit : mm



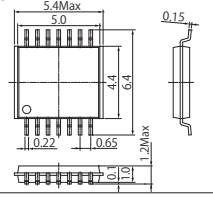
Land pattern example unit : mm



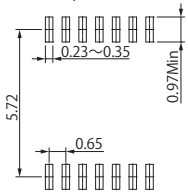
14 Pin packages

TSSOP14 (5.0 x 6.4)

Package dimension unit : mm

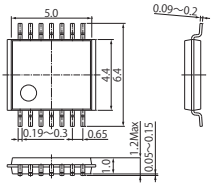


Land pattern example unit : mm

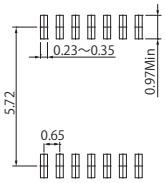


TSSOP14B (5.0 x 6.4)

Package dimension unit : mm

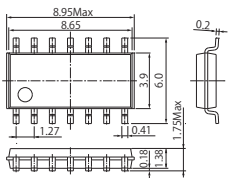


Land pattern example unit : mm

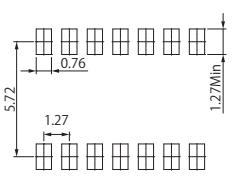


SOIC14 (8.65 x 6.0)

Package dimension unit : mm



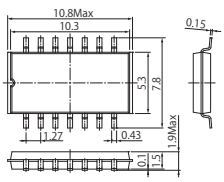
Land pattern example unit : mm



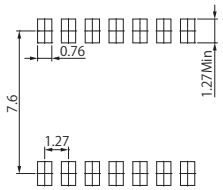
16 Pin packages

SOP14 (10.3 x 7.8)

Package dimension unit : mm

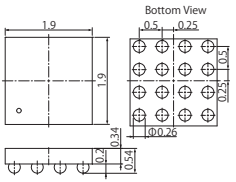


Land pattern example unit : mm

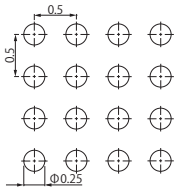


WCSP16C (1.9 x 1.9)

Package dimension unit : mm

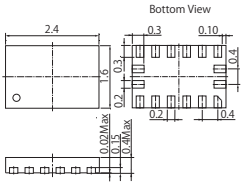


Land pattern example unit : mm

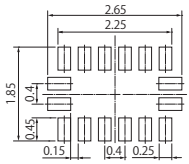


XQFN16 (2.4 x 1.6)

Package dimension unit : mm

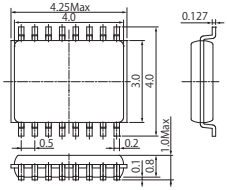


Land pattern example unit : mm

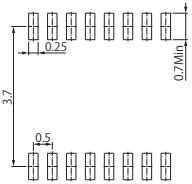


US16 (4.0 x 4.0)

Package dimension unit : mm

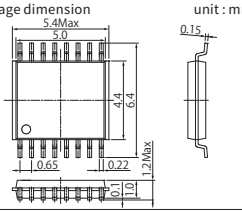


Land pattern example unit : mm

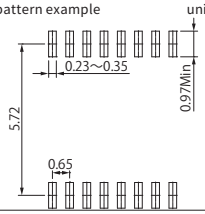


TSSOP16 (5.0 x 6.4)

Package dimension unit : mm

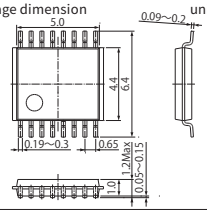


Land pattern example unit : mm

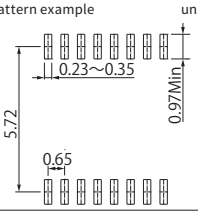


TSSOP16B (5.0 x 6.4)

Package dimension unit : mm



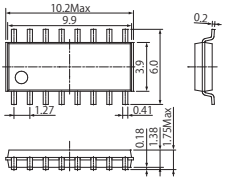
Land pattern example unit : mm



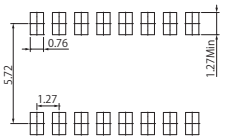
16 Pin packages

SOIC16 (9.9 x 6.0)

Package dimension unit : mm

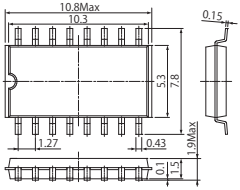


Land pattern example unit : mm

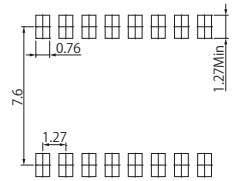


SOP16 (10.3 x 7.8)

Package dimension unit : mm

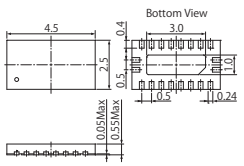


Land pattern example unit : mm

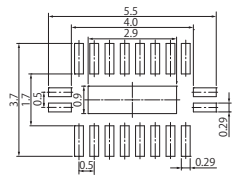


TQFN20 (4.5 x 2.5)

Package dimension unit : mm

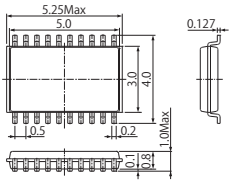


Land pattern example unit : mm

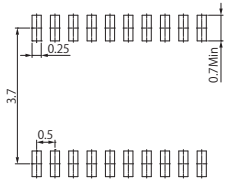


US20 (5.0 x 4.0)

Package dimension unit : mm

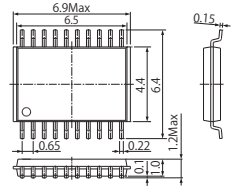


Land pattern example unit : mm

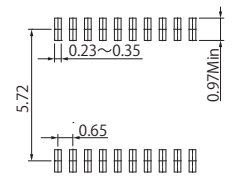


TSSOP20 (6.5 x 6.4)

Package dimension unit : mm

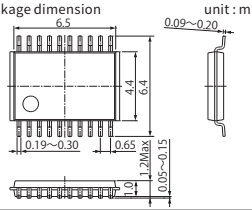


Land pattern example unit : mm

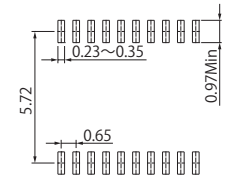


TSSOP20B (6.5 x 6.4)

Package dimension unit : mm



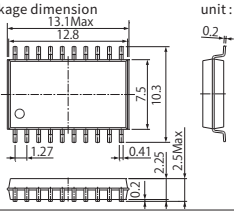
Land pattern example unit : mm



48 Pin packages

SOIC20 (12.8 x 10.3)

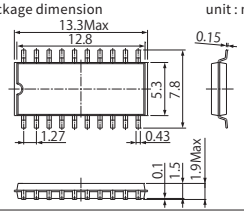
Package dimension unit : mm



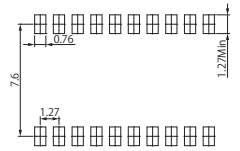
Land pattern example unit : mm

SOP20 (12.8 x 7.8)

Package dimension unit : mm

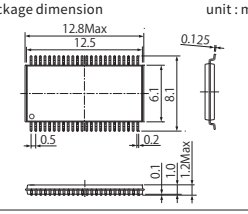


Land pattern example unit : mm

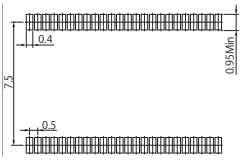


TSSOP48 (12.5 x 8.1)

Package dimension unit : mm



Land pattern example unit : mm



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