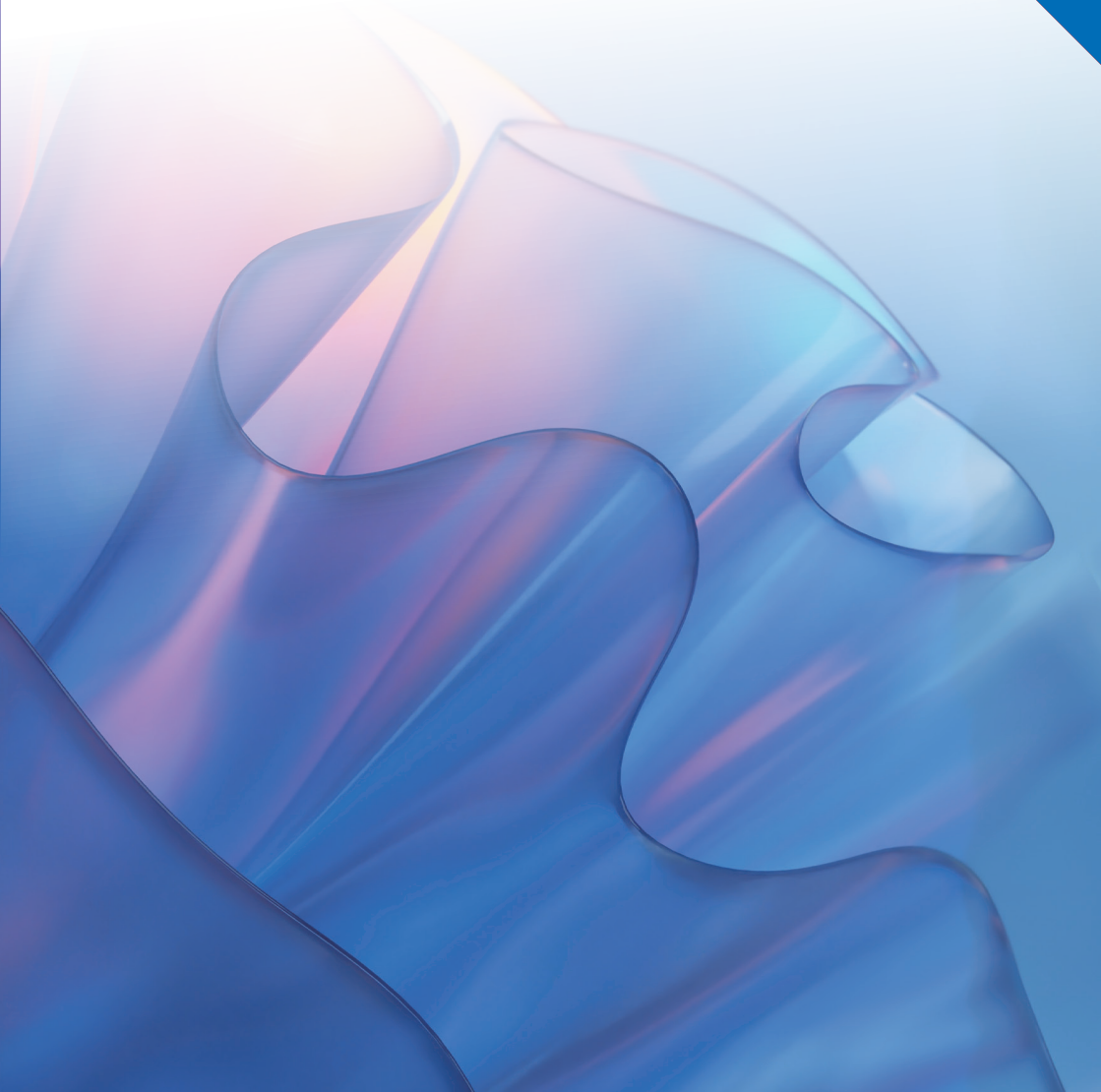
TOSHIBA

Selection Guide 2025

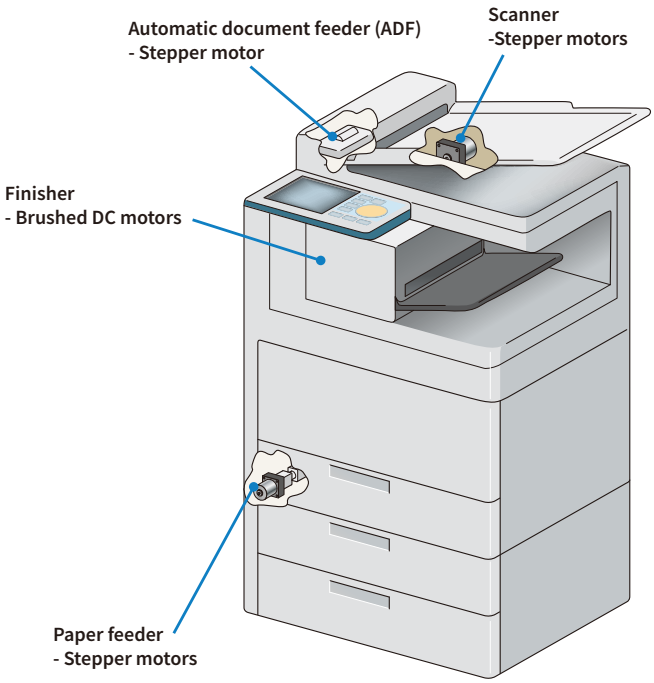
Motor Driver ICs



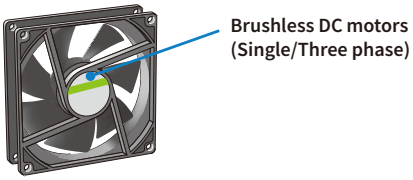
Contents

1. Applications

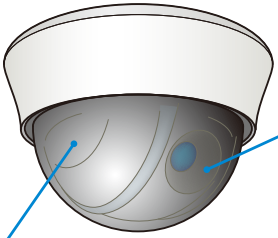
For multi-function printers



For fans (cooling fan, blower, etc.)



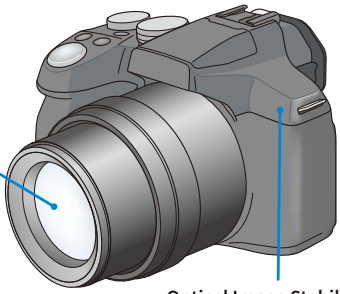
For surveillance cameras and digital cameras



Optical Image Stabilizer
- Voice coil motors
- Stepper motors

Lens
- Stepper motors

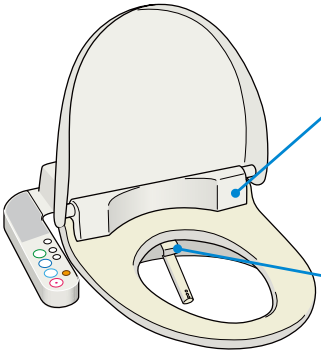
Pan/Tilt
- Stepper motors



Lens
- Stepper motors
- Brushed DC motors

Optical Image Stabilizer
- Voice coil motors
- Stepper motors

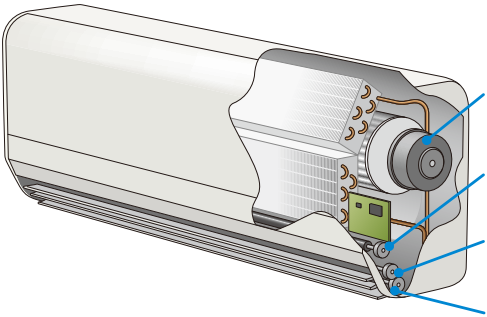
For bidet toilet seats etc.

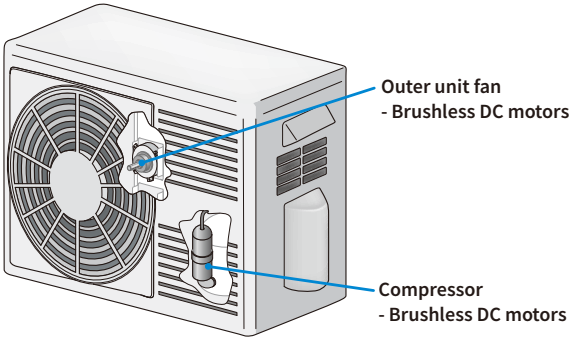


Toilet lid lifter
- Brushed DC motors
- Stepper motors

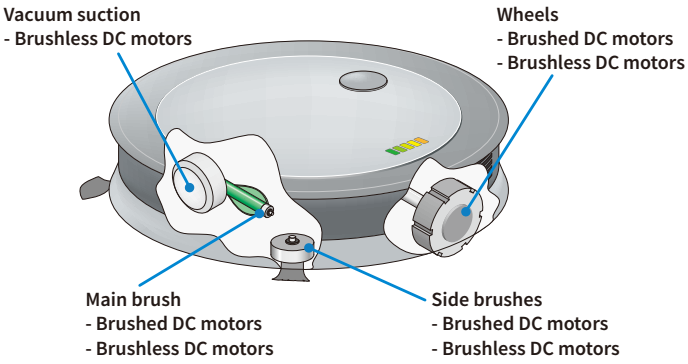
Nozzle in/out
- Brushed DC motors
- Stepper motors

For air conditioners

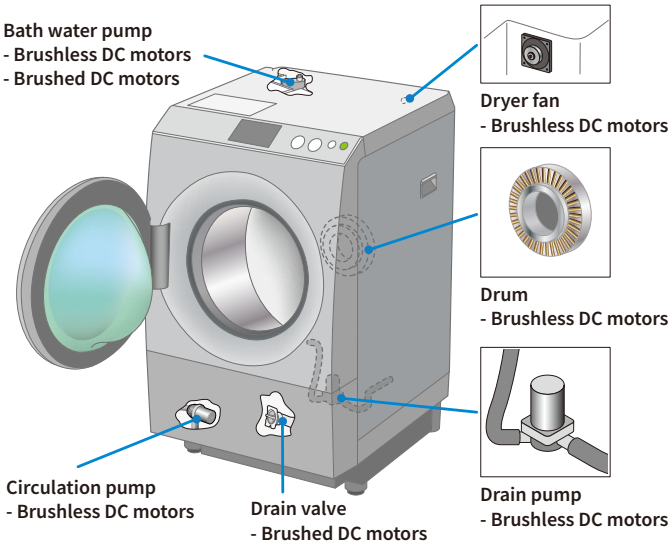




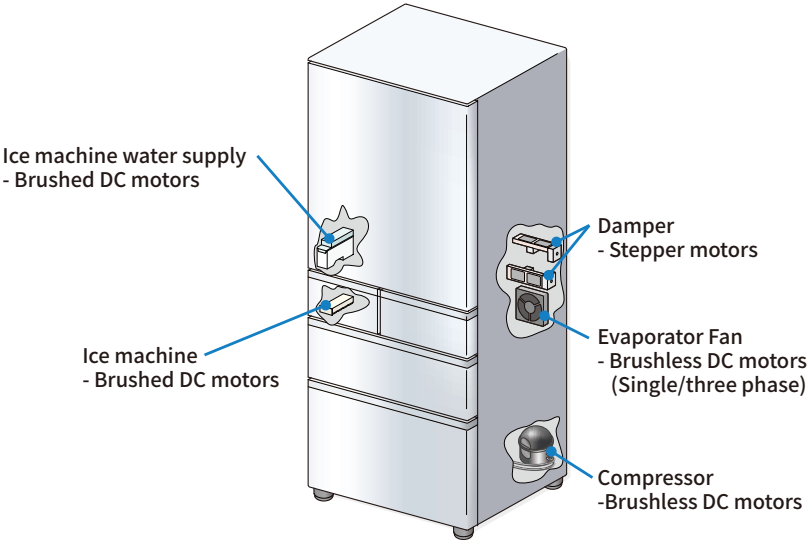
For vacuum cleaners and robot vacuums



For washing machines



For refrigerators



2. Product list

Brushed DC motor drivers

Part Number	Absolute Maximum Ratings		Output R_{ON}	Circuits (ch)	C.C. PWM *6)	ISD *1), *3)	TSD *2), *3)	Package	Note *5)
	Voltage (V)	Current (peak) (A)							
TB6613FTG	6	0.8	1.5	8	●		◊	QON44	
TC78H651AFNG	8	2.0	0.22	2		○	◊	TSSOP16	
TC78H653FTG	8	2.0 / 4.0 *4)	0.22 / 0.11 *4)	2 / 1 *4)		○	◊	QFN16	Large Mode
TB6552FNG	15	1.0	1.5	2			◊	SSOP16	
TB6552FTG	15	1.0	1.5	2			◊	QFN16	
TB6612FNG	15	3.2	0.5	2			◊	SSOP24	
TC78H600FNG	18	1.0	1.2	2	●	○	◊	SSOP20	
TC78H600FTG	18	1.0	1.2	2	●	○	◊	QFN24	
TC78H610FNG	18	1.0	1.2	2		○	◊	SSOP16	
TC78H611FNG	18	1.1	0.8	2		○	◊	TSSOP16	
TC78H620FNG	18	1.0	1.2	2		○	◊	SSOP16	
TC78H621FNG	18	1.1	0.8	2		○	◊	TSSOP16	
TC78H630FNG	18	2.1	0.4	1		○	◊	TSSOP16	
TC78H660FNG	20	2.0	0.48	2	●	○	○	TSSOP16	
TC78H660FTG	20	2.0	0.48	2	●	○	○	QFN16	
TB62212FNG	40	2.0 / 4.0 *4)	2.20 / 1.10 *4)	4 / 2 *4)	●	○	○	HTSSOP48	Large Mode
TB62212FTAG	40	2.0 / 4.0 *4)	2.20 / 1.10 *4)	4 / 2 *4)	●	○	○	QFN48	Large Mode
TB62216FG	40	2.5	1.0	2	●	○	○	HSOP28	
TB62216FNG	40	2.5	1.0	2	●	○	○	HTSSOP48	
TB62216FTG	40	2.5	1.0	2	●	○	○	QFN48	
TB6561FG	40	1.5	1.5	2		◊	◊	SSOP30	
TB6640AFTG	40	3.0	1.0	1	●	○ / ◊	○ / ◊	QFN48	
TB6640FTG	40	3.0	1.0	1	●	○ / ◊	○ / ◊	QFN48	
TB67H301FTG	40	3.0	1.0	1	●	○ / ◊	○ / ◊	QFN24	
TB67H452FTG	40	3.5 / 5.0 *4)	0.60 / 0.30 *4)	4 / 2 *4)	●	○	○	QFN48	Large Mode
TC78S121FNG	40	3.5 / 5.0 *4)	0.60 / 0.30 *4)	4 / 2 *4)	●	○	○	HTSSOP48	Large Mode
TC78S121FTG	40	3.5 / 5.0 *4)	0.60 / 0.30 *4)	4 / 2 *4)	●	○	○	QFN48	Large Mode
TC78S122FNG	40	3.5 / 5.0 *4)	0.60 / 0.30 *4)	4 / 2 *4)	●	○	○	HTSSOP48	Large Mode
TC78S122FTG	40	3.5 / 5.0 *4)	0.60 / 0.30 *4)	4 / 2 *4)	●	○	○	QFN48	Large Mode
TB6559FG	50	2.5	1.3	1	●	◊	◊	HSOP16	
TB6569FG	50	4.5	0.55	1	●	○	○	HSOP16	
TB6569FTG	50	4.5	0.55	1	●	○	○	QFN32	

*1) ISD: Over-current shutdown
*2) TSD: Thermal shutdown
*3) ○: Latched, ◊: Auto-retry
*4) Large mode
*5) Large mode available, Current monitoring available
*6) C.C. PWM: Constant Current PWM

Part Number	Absolute Maximum Ratings		Output R_{ON}	Circuits (ch)	C.C. PWM *6)	ISD *1), *3)	TSD *2), *3)	Package	Note *5)
	Voltage (V)	Current (peak) (A)							
TB6641FG	50	4.5	0.55	1	●	○	○	HSOP16	
TB6641FTG	50	4.5	0.55	1	●	○	○	QFN32	
TB6642FG	50	4.5	0.55	1		○ / ◊	○ / ◊	HSOP16	
TB6642FTG	50	4.5	0.55	1		○ / ◊	○ / ◊	QFN32	
TB67H302HG	50	5.0	0.4	2	●	○	○	HZIP25	
TB67H303HG	50	10.0	0.2	1	●	○	○	HZIP25	
TB67H400AFNG	50	4.0 / 8.0 *4)	0.49 / 0.25 *4)	2 / 1 *4)	●	○	○	HTSSOP48	Large Mode
TB67H400AFTG	50	4.0 / 8.0 *4)	0.49 / 0.25 *4)	2 / 1 *4)	●	○	○	QFN48	Large Mode
TB67H400AHG	50	4.0 / 8.0 *4)	0.49 / 0.25 *4)	2 / 1 *4)	●	○	○	HZIP25	Large Mode
TB67H400ANG	50	4.0 / 8.0 *4)	0.49 / 0.25 *4)	2 / 1 *4)	●	○	○	SDIP24	Large Mode
TB67H401FTG	50	4.0 / 8.0 *4)	0.49 / 0.25 *4)	2 / 1 *4)	●	○	○	QFN48	Large Mode
TB67H410FTG	50	2.5 / 5.0 *4)	0.80 / 0.40 *4)	2 / 1 *4)	●	○	○	QFN48	Large Mode
TB67H410NG	50	2.5 / 5.0 *4)	0.80 / 0.40 *4)	2 / 1 *4)	●	○	○	SDIP24	Large Mode
TB67H420FTG	50	4.5 / 9.0 *4)	0.33 / 0.17 *4)	2 / 1 *4)	●	○	○	QFN48	Large Mode
TB67H450AFNG	50	3.5	0.6	1	●	○	◊	SSOP8	
TB67H451AFNG	50	3.5	0.6	1	●	◊	◊	SSOP8	
TB67H453FNG ☆	50	3.5	0.6	1	●	○	◊	HTSSOP16	Current monitoring
TB67H453FTG ☆	50	3.5	0.6	1	●	○	◊	QFN16	Current monitoring
TB67H480FNG	50	2.5	0.4	2	●	○	◊	HTSSOP28	
TB67H481FNG	50	2.5	0.4	2	●	○	◊	HTSSOP28	
TB67H481FTG	50	3.0	0.4	2	●	○	◊	QFN32	
TB67H482FNG ☆	50	5.0	0.2	1	●	○	◊	HTSSOP28	

☆ New Products
*1) ISD: Over-current shutdown
*2) TSD: Thermal shutdown
*3) ○: Latched, ◊: Auto-retry
*4) Large mode
*5) Large mode available, Current monitoring available
*6) C.C. PWM: Constant Current PWM

Stepping motor drivers

Part Number	Motor Type		Interface			Absolute Maximum Ratings		Stepping Mode		ISD *2)	TSD *3)	Package	Note *1)
	Bipolar	Unipolar	Clock	Phase	Serial	Voltage (V)	Current (A)	Constant Current Cont.	Max Resolution				
TB6613FTG	●		●		●	6	0.8	●	1/64		●	QON44	
TB6608FNG	●		●			15	0.8	●	1/8		●	SSOP20	
TC78H670FTG	●		●		●	20	2.0	●	1/128	●	●	QFN16	ACDS
TC78S600FNG	●		●			18	1.0	●	1/16	●	●	SSOP20	
TC78S600FTG	●		●			18	1.0	●	1/16	●	●	QFN24	
TB6615PG		●	●			28	0.4		1/2			DIP16	
TB62211FNG	●		●			40	1.0	●	1/4	●	●	HTSSOP24	
TB62214AFG	●		●			40	2.0	●	1/4	●	●	HSOP28	
TB62214AFNG	●		●			40	2.0	●	1/4	●	●	HTSSOP48	
TB62214AFTG	●		●			40	2.0	●	1/4	●	●	QFN48	
TB62215AFG	●		●			40	3.0	●	1/4	●	●	HSOP28	
TB62215AFNG	●		●			40	3.0	●	1/4	●	●	HTSSOP48	
TB62215AFTG	●		●			40	3.0	●	1/4	●	●	QFN48	
TB62262FTAG	●		●			40	1.5	●	1/4	●	●	QFN36	
TB62262FTG	●		●			40	1.8	●	1/4	●	●	QFN48	
TB62269FTAG	●		●			40	1.8	●	1/32	●	●	QFN32	
TB62269FTG	●		●			40	1.8	●	1/32	●	●	QFN48	
TB6560AFG	●		●			40	2.5	●	1/16		●	HQFP64	
TB6560AFTG	●		●			40	2.5	●	1/16		●	QFN48	
TB67H452FTG	●		●			40	3.5 × 2	●	1/8	●	●	QFN48	
TB67S215FTAG	●		●			40	2.5	●	1/8	●	●	QFN36	
TB67S508FTG	●		●	●		40	3	●	1/8	●	●	QFN36	ACDS/ADMD
TB67S512FTAG	●		●			40	2	●	1/8	●	●	QFN36	
TB67S522FTAG	●		●			40	2.8	●	1/8	●	●	QFN36	
TC78S122FNG	●		●			40	2.0 × 2	●	1/8	●	●	HTSSOP48	
TC78S122FTG	●		●			40	2.0 × 2	●	1/8	●	●	QFN48	
TB67S539FTG	●		●			40	2.0	●	1/32	●	●	QFN32	ACDS/ADMD
TB67S539SFTG	●		●			40	2.0	●	1/32	●	●	QFN32	ACDS/ADMD
TB67S549FTG	●		●			40	1.5	●	1/32	●	●	QFN24	ACDS/ADMD
TB6600FG	●		●			50	5.0	●	1/16	●	●	HQFP64	
TB6600HG	●		●			50	5.0	●	1/16	●	●	HZIP25	
TB67S102AFNG	●		●			50	4.0	●	1/4	●	●	HTSSOP48	ADMD
TB67S102AFTG	●		●			50	4.0	●	1/4	●	●	QFN48	ADMD
TB67S103AFTG	●		●		(●) *4)	50	4.0	●	1/32	●	●	QFN48	ADMD
TB67S109AFNG	●		●			50	4.0	●	1/32	●	●	HTSSOP48	ADMD
TB67S109AFTG	●		●			50	4.0	●	1/32	●	●	QFN48	ADMD
TB67S128FTG	●		●			50	5.0	●	1/128	●	●	QFN64	AGC/ACDS /ADMD
TB67S209FTG	●		●			50	4.0	●	1/32	●	●	QFN48	

*1) AGC: Active Gain Control
ADMD: Advanced Dynamic Mixed Decay
ACDS: Advanced Current Detect System
*2) ISD: Over-current detection
*3) TSD: Thermal shutdown
*4) Setup data: serial-in

Part Number	Motor Type		Interface			Absolute Maximum Ratings		Stepping Mode		ISD *2)	TSD *3)	Package	Note *1)
	Bipolar	Unipolar	Clock	Phase	Serial	Voltage (V)	Current (A)	Constant Current Cont.	Max Resolution				
TB67S269FTG	●		●			50	2.0	●	1/32	●	●	QFN48	
TB67S580FNG	●		●			50	1.6	●	1/32	●	●	HTSSOP28	
TB67S581FNG	●		●			50	2.5	●	1/32	●	●	HTSSOP28	
TB67S569FTG	●		●			40	2.0	●	1/32	●	●	QFN32	ADMD
TB67S589FNG	●		●			50	3.0	●	1/32	●	●	HTSSOP28	ACDS/ADMD
TB67S589FTG	●		●			50	3.0	●	1/32	●	●	QFN32	ADMD
TB67S559FTG ☆	●		●			50	3.0	●	1/32	●	●	QFN32	ACDS/ADMD
TB67S158FTG		●		● *5)	●	80	1.5 × 2		1/2	●	●	QFN48	
TB67S158NG		●		● *5)	●	80	1.5 × 2		1/2	●	●	SDIP24	
TB67S179FTG		●	●			80	1.5	●	1/32	●	●	QFN48	ACDS
TB67S142FTG		●	●			84	3.0	●	1/4	●	●	QFN48	ACDS
TB67S142HG		●	●			84	3.0	●	1/4	●	●	HZIP25	ACDS
TB67S142NG		●	●			84	3.0	●	1/4	●	●	SDIP24	ACDS
TB67S149FG		●	●			84	3.0	●	1/32	●	●	HSSOP28	ACDS
TB67S149FTG		●	●			84	3.0	●	1/32	●	●	QFN48	ACDS
TB67S149AFTG		●	●			84	3.0	●	1/32	●	●	QFN48	ACDS
TB67S149HG		●	●			84	3.0	●	1/32	●	●	HZIP25	ACDS
TC78H651AFNG	●			●		8	2.0		1/2	●	●	TSSOP16	
TC78H653FTG	●			●		8	2.0		1/2	●	●	QFN16	
TC78H611FNG	●			●		18	1.1		1/2	●	●	TSSOP16	
TC78H621FNG	●			●		18	1.1		1/2	●	●	TSSOP16	
TC78H660FNG	●			●		20	2.0	●	1/2	●	●	TSSOP16	ACDS
TC78H660FTG	●			●		20	2.0	●	1/2	●	●	QFN16	ACDS
TB6674FAG	●			●		24	0.2		Full	●	●	SSOP16	
TB6674FG	●			●		24	0.4		Full	●	●	HSOP16	
TB6674PG	●			●		24	0.4		Full	●	●	DIP16	
TB62208FG	●			●		40	1.8	●	1/2	●	●	HSOP28	
TB62208FNG	●			●		40	1.8	●	1/1	●	●	HTSSOP48	
TB62208FTG	●			●		40	1.8	●	1/2	●	●	QFN48	
TB62210FNG	●			●		40	1.0	●	1/4	●	●	HTSSOP24	
TB62212FNG	●			●		40	1.5 × 2	●	1/2	●	●	HTSSOP48	
TB62212FTAG	●			●		40	1.5 × 2	●	1/2	●	●	QFN48	
TB62213AFG	●			●		40	3.0	●	1/4	●	●	HSOP28	
TB62213AFNG	●			●		40	3.0	●	1/4	●	●	HTSSOP48	
TB62213AFTG	●			●		40	3.0	●	1/4	●	●	QFN48	
TB62218AFG	●			●		40	2.0	●	1/4	●	●	HSOP28	
TB62218AFNG	●			●		40	2.0	●	1/4	●	●	HTSSOP48	
TB62218AFTG	●			●		40	2.0	●	1/4	●	●	QFN48	
TB62261FTAG	●			●		40	1.5	●	1/4	●	●	QFN36	

☆ New Products
*1) AGC: Active Gain Control
ADMD: Advanced Dynamic Mixed Decay
ACDS: Advanced Current Detect System
*2) ISD: Over-current detection
*3) TSD: Thermal shutdown
*5) Parallel mode

Stepping motor drivers

Part Number	Motor Type		Interface			Absolute Maximum Ratings		Stepping Mode		ISD *2)	TSD *3)	Package	Note *1)
	Bipolar	Unipolar	Clock	Phase	Serial	Voltage (V)	Current (A)	Constant Current Cont.	Max Resolution				
TB62261FTG	●			●		40	1.8	●	1/4	●	●	QFN48	
TB6562AFG	●			●		40	1.5	●	1/4	●	●	SSOP30	
TB67S213FTAG	●			●		40	2.5	●	1/4	●	●	QFN36	
TB67S511FTAG	●			●		40	2.0	●	1/4	●	●	QFN36	
TB67S521FTAG	●			●		40	2.8	●	1/4	●	●	QFN36	
TC78S121FNG	●			●		40	2.0 × 2	●	1/4	●	●	HTSSOP48	
TC78S121FTG	●			●		40	2.0 × 2	●	1/4	●	●	QFN48	
TB67S101AFNG	●			●		50	4.0	●	1/4	●	●	HTSSOP48	ADMD
TB67S101AFTG	●			●		50	4.0	●	1/4	●	●	QFN48	ADMD
TB67S101ANG	●			●		50	4.0	●	1/4	●	●	SDIP24	ADMD
TB67S105FTG	●				●	50	3.0	●	1/2	●	●	QFN48	
TB67S261FTG	●			●		50	2.0	●	1/4	●	●	QFN48	ADMD
TB67S265FTG	●				●	50	2.0	●	1/2	●	●	QFN48	ADMD
TB67S111PG		●		● *5)		80	1.5		1/2	●	●	DIP16	
TB67S141FTG		●		●		84	3.0	●	1/4	●	●	QFN48	ACDS
TB67S141AFTG		●		●		84	3.0	●	1/4	●	●	QFN48	ACDS
TB67S141HG		●		●		84	3.0	●	1/4	●	●	HZIP25	ACDS
TB67S141NG		●		●		84	3.0	●	1/4	●	●	SDIP24	ACDS
TB67S145FTG		●			●	84	3.0	●	1/2	●	●	QFN48	ACDS

*1) AGC: Active Gain Control
ADMD: Advanced Dynamic Mixed Decay
ACDS: Advanced Current Detect System
*2) ISD: Over-current detection
*3) TSD: Thermal shutdown
*5) Parallel mode

Brushless DC motor drivers (Controller)

Part Number	Phases		Controller	Pre Driver	Driver	Absolute Maximum Ratings		Commutation		Lead Angle Control				Package	Note *1)
	3-Phase	1-Phase				Voltage (V)	Current (A)	Square	Sine	External Input	Auto (current FB)	Auto (rpm FB)	Auto (Intelligent Phase Control)		
TB6575FNG	●		●			5.5	0.02	●		●				SSOP24	Sensorless
TB6551FAG	●		●			12	0.002		●	●				SSOP24	3 Hall
TB6556FG	●		●			12	0.002		●	●	●			SSOP30	3 Hall
TB6584AFNG	●		●			18	0.002		●	●	●			SSOP30	3 Hall
TB6584FNG	●		●			18	0.002		●	●	●			SSOP30	3 Hall
TB6586AFG	●		●			18	0.002	●		●				SSOP24	3 Hall
TB6586BFG	●		●			18	0.002	●		●				SSOP24	3 Hall
TB6586FG	●		●			18	0.002	●		●				SSOP24	3 Hall
TB6631FNG	●		●			18	0.002		●	●		●		SSOP30	3 Hall
TB6634FNG	●		●			18	0.002		●	●	●			SSOP30	3 Hall
TB67B054FTG	●		●			18	0.002		●	●	●			QFN32	3 Hall
TC78B041FNG	●		●			18	0.002		●	●			●	SSOP30	3 Hall
TC78B042FTG	●		●			18	0.002		●	●			●	QFN32	3 Hall

*1) Hall type or Sensorless

Brushless DC motor drivers (Pre Driver / Driver)

Part Number	Phases		Controller	Pre Driver	Driver	Absolute Maximum Ratings		Commutation		Lead Angle Control				Package	Note *1)
	3-Phase	1-Phase				Voltage (V)	Current (A)	Square	Sine	External Input	Auto (current FB)	Auto (rpm FB)	Auto (Intelligent Phase Control)		
TC78B002FNG		●			●	18	1.5	●	●	●				SSOP16	1 Hall
TC78B002FTG		●			●	18	1.5	●	●	●				QFN16	1 Hall
TC78B025FTG	●				●	18	4	●	●	●		●	●	QFN24	1 Hall Closed Loop
TC78B027FTG	●			●		18	0.2	●	●	●		●	●	QFN24	1 Hall Closed Loop
TB6633AFNG	●				●	25	1	●		●				SSOP24	Sensorless
TB6633FNG	●				●	25	1	●		●				SSOP24	Sensorless
TB67B001BFTG	●				●	25	3	●		●		●		QFN36	Sensorless
TB67B001AFTG	●				●	25	3	●		●		●		QFN36	Sensorless
TB67B001FTG	●				●	25	3	●		●		●		QFN36	Sensorless
TB67B008AFNG	●				●	25	3	●		●		●		SSOP24	Sensorless
TB67B008AFTG	●				●	25	3	●		●		●		QFN24	Sensorless
TB67B008BFNG	●				●	25	3	●		●		●		SSOP24	Sensorless
TB67B008BFTG	●				●	25	3	●		●		●		QFN24	Sensorless
TB67B008CFNG	●				●	25	3	●		●		●		SSOP24	Sensorless
TB67B008CFTG	●				●	25	3	●		●		●		QFN24	Sensorless
TB67B008FNG	●				●	25	3	●		●		●		SSOP24	Sensorless
TB67B008FTG	●				●	25	3	●		●		●		QFN24	Sensorless
TB67Z800FTG	●				●	25	3							QFN36	-
TC78B015FTG	●				●	25	3	●		●		●		QFN36	1 Hall
TB6603FTG	●			●		30	0.02		●	●				QFN36	3 Hall
TB6604FTG	●			●		30	0.02		●		●			QFN48	3 Hall

*1) Hall type or Sensorless, Built-in Closed loop function

Brushless DC motor drivers (Pre Driver / Driver)

Part Number	Phases		Controller	Pre Driver	Driver	Absolute Maximum Ratings		Commutation		Lead Angle Control				Package	Note *1)
	3-Phase	1-Phase				Voltage (V)	Current (A)	Square	Sine	External Input	Auto (current FB)	Auto (rpm FB)	Auto (Intelligent Phase Control)		
TB6605FTG	●			●		30	0.02		●	●		●		QFN36	3 Hall
TC78B009FTG	●			●		30	0.24	●		●		●		QFN36	Sensorless Closed Loop
TC78B011FTG	●			●		30	0.24		●	●		●		QFN36	Sensorless Closed Loop
TC78B004AFTG	●			●		31	0.1		●		●			QFN40	3 Hall
TC78B015AFTG	●				●	36	3	●		●		●		QFN36	1 Hall
TC78B006AFNG		●		●		40	0.02	●	●					SSOP16	1 Hall
TC78B006AFTG		●		●		40	0.02	●	●					QFN16	1 Hall
TC78B006BFNG		●		●		40	0.02	●	●					SSOP16	1 Hall
TC78B006BFTG		●		●		40	0.02	●	●					QFN16	1 Hall
TC78B006CFNG		●		●		40	0.02	●	●					SSOP16	1 Hall
TC78B006CFTG		●		●		40	0.02	●	●					QFN16	1 Hall
TC78B006FNG		●		●		40	0.02	●	●					SSOP16	1 Hall
TC78B006FTG		●		●		40	0.02	●	●					QFN16	1 Hall
TC78B016FTG	●				●	40	3		●	●		●	●	QFN36	3 Hall
TB6585AFTG	●				●	45	1.8		●	●	●			QFN48	3 Hall
TB67B000AFG	●				●	600	2	●	●	●				HSSOP34	3 Hall
TB67B000AHG	●				●	600	2	●	●	●				HDIP30	3 Hall

*1) Hall type or Sensorless, Built-in Closed loop function

Brushless DC motor drivers (Gate Driver)

Part Number	Half bridge Ch	Absolute Maximum Ratings Voltage (V)	Gate drive current		Gate drive voltage (V)	Integrated LDO (V)	Current sense Amplifiers (ch) *1)	Interface		Package	Note
			Sink (mA)	Source (mA)				SPI	Hardware		
TB67Z833SFTG ☆	3	80	20 to 2000	10 to 1000	11	3.3	3	●		QFN40	
TB67Z833HFTG ☆	3	80	20 to 2000	10 to 1000	11	3.3	3		●	QFN40	
TB67Z830SFTG ☆	3	80	20 to 2000	10 to 1000	11	3.3	w/o	●		QFN32	
TB67Z830HFTG ☆	3	80	20 to 2000	10 to 1000	11	3.3	w/o		●	QFN32	
TB67Z853SFTG ☆	3	80	20 to 2000	10 to 1000	11	5.0	3	●		QFN40	
TB67Z853HFTG ☆	3	80	20 to 2000	10 to 1000	11	5.0	3		●	QFN40	
TB67Z850SFTG ☆	3	80	20 to 2000	10 to 1000	11	5.0	w/o	●		QFN32	
TB67Z850HFTG ☆	3	80	20 to 2000	10 to 1000	11	5.0	w/o		●	QFN32	

☆ New Products
*1) w/o : Without Current Sense Amplifiers

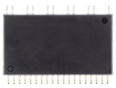
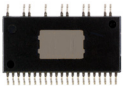
Transistor Arrays

Part Number	Type		Absolute Maximum Ratings		Input Level	Input Voltage Range (V)	Inductive Load	Common Diode	Package
	Output Type	Number of Circuits	Output Voltage (V)	Output Current (A)					
TBD62064APG	Sink	4ch	50	1.5	High	2.5 to 25	●	●	DIP16
TBD62064AFG	Sink	4ch	50	1.5	High	2.5 to 25	●	●	HSOP16
TBD62064AFAG	Sink	4ch	50	1.5	High	2.5 to 25	●	●	SSOP24
TBD62308APG	Sink	4ch	50	1.5	Low	0 to V_{CC}-3.5 V	●	●	DIP16
TBD62308AFG	Sink	4ch	50	1.5	Low	0 to V_{CC}-3.5 V	●	●	HSOP16
TB62308AFAG	Sink	4ch	50	1.5	Low	0 to V_{CC}-3.5 V	●	●	SSOP24
TBD62003APG	Sink	7ch	50	0.5	High	2.5 to 25	●	●	DIP16
TBD62003AFG	Sink	7ch	50	0.5	High	2.5 to 25	●	●	SOP16
TBD62003AFNG	Sink	7ch	50	0.5	High	2.5 to 25	●	●	SSOP16
TBD62003AFWG	Sink	7ch	50	0.5	High	2.5 to 25	●	●	SOL16
TBD62004APG	Sink	7ch	50	0.5	High	7.0 to 25	●	●	DIP16
TBD62004AFG	Sink	7ch	50	0.5	High	7.0 to 25	●	●	SOP16
TBD62004AFNG	Sink	7ch	50	0.5	High	7.0 to 25	●	●	SSOP16
TBD62004AFWG	Sink	7ch	50	0.5	High	7.0 to 25	●	●	SOL16
TBD62304APG	Sink	7ch	50	0.5	Low	-20 to V_{CC}-3.5 V			DIP16
TBD62304AFNG	Sink	7ch	50	0.5	Low	-20 to V_{CC}-3.5 V			SSOP16
TBD62304AFWG	Sink	7ch	50	0.5	Low	-20 to V_{CC}-3.5 V			SOL16
TBD62502APG	Sink	7ch	50	0.3	High	14.0 to 25			DIP16
TBD62502AFG	Sink	7ch	50	0.3	High	14.0 to 25			SOP16
TBD62502AFNG	Sink	7ch	50	0.3	High	14.0 to 25			SSOP16
TBD62502AFWG	Sink	7ch	50	0.3	High	14.0 to 25			SOL16
TBD62503APG	Sink	7ch	50	0.3	High	2.5 to 25			DIP16
TBD62503AFG	Sink	7ch	50	0.3	High	2.5 to 25			SOP16
TBD62503AFNG	Sink	7ch	50	0.3	High	2.5 to 25			SSOP16
TBD62503AFWG	Sink	7ch	50	0.3	High	2.5 to 25			SOL16
TBD62083APG	Sink	8ch	50	0.5	High	2.5 to 25	●	●	DIP18
TBD62083AFG	Sink	8ch	50	0.5	High	2.5 to 25	●	●	SOP18
TBD62083AFNG	Sink	8ch	50	0.5	High	2.5 to 25	●	●	SSOP18
TBD62083AFWG	Sink	8ch	50	0.5	High	2.5 to 25	●	●	SOL18
TBD62183AFNG	Sink	8ch	50	0.05	High	2.5 to 25	●	●	SSOP18
TBD62183AFWG	Sink	8ch	50	0.05	High	2.5 to 25	●	●	SOL18
TBD62084APG	Sink	8ch	50	0.5	High	7.0 to 25	●	●	DIP18
TBD62084AFG	Sink	8ch	50	0.5	High	7.0 to 25	●	●	SOP18
TBD62084AFNG	Sink	8ch	50	0.5	High	7.0 to 25	●	●	SSOP18
TBD62084AFWG	Sink	8ch	50	0.5	High	7.0 to 25	●	●	SOL18
TBD62089APG	Sink	8ch	50	0.5	High	0.7 x V_{DD} to V_{DD}			DIP20
TBD62381APG	Sink	8ch	50	0.5	High	2.0 to 25			DIP18
TBD62381AFNG	Sink	8ch	50	0.5	High	2.0 to 25			SSOP18

Part Number	Type		Absolute Maximum Ratings		Input Level	Input Voltage Range (V)	Inductive Load	Common Diode	Package
	Output Type	Number of Circuits	Output Voltage (V)	Output Current (A)					
TBD62381AFWG	Sink	8ch	50	0.5	High	2.0 to 25			SOL18
TBD62384APG	Sink	8ch	50	0.5	Low	-20 to V_{cc}-3.5			DIP18
TBD62384AFWG	Sink	8ch	50	0.5	Low	-20 to V_{cc}-3.5			SOL18
TBD62387APG	Sink	8ch	50	0.5	Low	0 to V_{cc}-3.5	●	●	DIP20
TBD62387AFNG	Sink	8ch	50	0.5	Low	0 to V_{cc}-3.5	●	●	SSOP20
TBD62781APG	Source	8ch	50	-0.5	High	2.0 to 25			DIP18
TBD62781AFWG	Source	8ch	50	-0.5	High	2.0 to 25			SOL18
TBD62783APG	Source	8ch	50	-0.5	High	2.0 to 25	●	●	DIP18
TBD62783AFG	Source	8ch	50	-0.5	High	2.0 to 25	●	●	SOP18
TBD62783AFNG	Source	8ch	50	-0.5	High	2.0 to 25	●	●	SSOP18
TBD62783AFWG	Source	8ch	50	-0.5	High	2.0 to 25	●	●	SOL18
TBD62785APG	Source	8ch	50	-0.5	Low	0 to V_{cc}-3.5			DIP18
TBD62785AFWG	Source	8ch	50	-0.5	Low	0 to V_{cc}-3.5			SOL18
TBD62786APG	Source	8ch	50	-0.5	Low	-30 to -2.8	●	●	DIP18
TBD62786AFNG	Source	8ch	50	-0.5	Low	-30 to -2.8	●	●	SSOP18
TBD62786AFWG	Source	8ch	50	-0.5	Low	-30 to -2.8	●	●	SOL18
TBD62789APG	Source	8ch	50	-0.5	High	2.0 to 5.5	●	●	DIP20

Three-Phase Brushless DC Motor Driver ICs (with Built-in Power Device)

Package Dimensions (unit: mm)

SSOP30	HSSOP31	HDIP30
		
20.0 x 14.2	17.5 x 11.93	32.8 x 11.4

Square-wave PWM control type

Package	Part Number	V_{BB} (V)	I_{out} (A)	V_{CEsat} max (V)		Hall sensor input	FGC Rotate Pulse Select	Forward Reverse select	Protection Functions			
				High Side	Low Side				Current Limit	Over Current	TSD	UVLO
HSSOP31	TPD4162F	600	0.7	3	3	✓	✓	-	✓	✓	✓	✓
	TPD4166F	600	1	3	3	✓	✓	-	✓	✓	✓	✓

Sine-wave PWM control type

Package	Part Number	V_{BB} (V)	I_{out} (A)	V_{CEsat} max (V)		R_{DSON} max (Ω)		Protection Functions			Diagnosis Functions
				High Side	Low Side	High Side	Low Side	Over Current	TSD	UVLO	
SSOP30	TPD4206F	500	2.5	-	-	2.3	2.3	✓	✓	✓	✓
	TPD4204F	600	2.5	-	-	3.2	3.2	✓	✓	✓	✓
	TPD4207F	600	5	-	-	0.56	0.56	✓	✓	✓	✓
HSSOP31	TPD4163F	600	1	3.3	3.3	-	-	✓	✓	✓	✓
	TPD4164F	600	2	3.7	3.7	-	-	✓	✓	✓	✓
HDIP30	TPD4163K ☆	600	1	3.3	3.3	-	-	✓	✓	✓	✓
	TPD4164K ☆	600	2	3.7	3.7	-	-	✓	✓	✓	✓
	TPD4165K ☆	600	3	3.3	3.3	-	-	✓	✓	✓	✓

☆ New Products

Part Naming Conventions

Three-Phase Brushless DC Motor Driver ICs (with Built-in Power Device)

Ex.) TPD 41 62 F
① ② ③ ④

① TPD means intelligent power device [Three-Phase Brushless DC Motor Driver (with Built-in Power Device)]
② Three-phase brushless DC motor driver
41: Monolithic type
42: Multi-Chip module type
③ Serial number
④ Package
F: HSSOP31 or SSOP30
K: HDIP30

Low Voltage IPDs (Intelligent Power Devices)

Package Dimensions (unit: mm)

Industrial Driver ICs

PS-8	SSOP30
	
2.9 x 2.8	10.2 x 7.6

High-side Switch

Package	Part Number	V_{DD} (V)	I_{OUT} (A)	$R_{DS(ON)}$ max (Ω)	$V_{DD(opr)}$ (V)	$Tj_{(opr)}$ (°C)	Protective Functions			Diagnosis Functions			Number of Switch channels
							Over Current	TSD	Active Clamp	Over Current	TSD	Open Load	
SSOP30	TPD2015FN @	-0.3 to 40	1	0.55	8 to 40	-40 to 110	✓	✓	-	-	-	-	8ch

Low-side Switch

Package	Part Number	$V_{DS(DC)}/V_{OUT}$ (V)	I_D/I_{OUT} (A)	$R_{DS(ON)}$ max (Ω)	$V_{5V(opr)}$ (V)	$Tj_{(opr)}$ (°C)	Protective Functions			Diagnosis Functions			Number of Switch channels
							Over Current	TSD	Active Clamp	Over Current	TSD	Open Load	
SSOP30	TPD2017FN @	Up to 40	1	0.55	2.7 to 5.5	-40 to 110	✓	✓	✓	-	-	-	8ch

MOSFET Gate Driver

Package	Part Number	V_{DD} (V)	I_{OUT} (A)	$V_{DD(opr)}$ (V)	$Tj_{(opr)}$ (°C)	Protect Function and Features	Topology
PS-8	TPD7211F	-0.3 to 35	±0.5	5 to 18	-40 to 125	•High-side P-ch MOSFET drive	1ch half-bridge

AEC-Q100 qualified
@ Dry-packed

Part Naming Conventions

Low Voltage IPDs

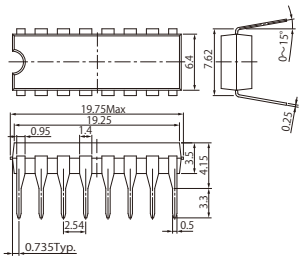
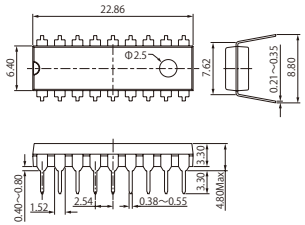
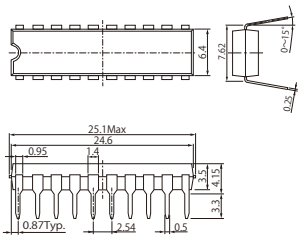
Ex.) TPD 10 55 F A
① ② ③ ④ ⑤

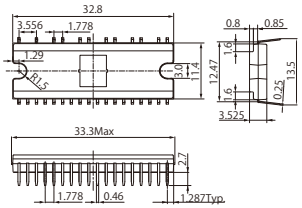
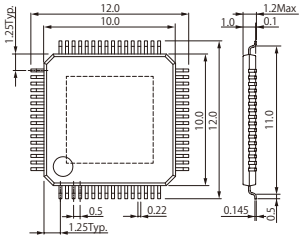
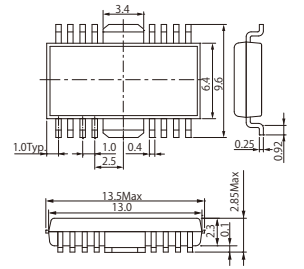
① TPD means intelligent power device
② The type of topology
- 10: Single or dual switch
- 20: Multi output switch
- 71: High-side MOSFET gate driver
- 72: Bridge MOSFET gate driver

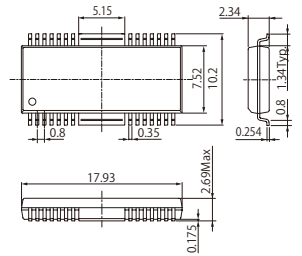
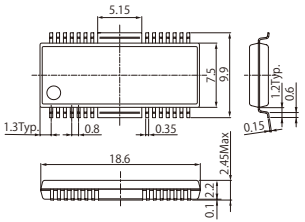
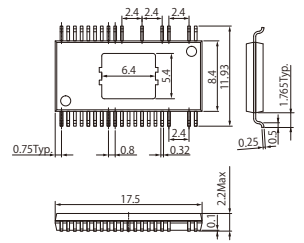
③ Serial number
④ Package
- F: Surface mount type
- FN: Flat Package (2 direction SOP Lead Pitch 0.65 mm)

⑤ Changes
The additional symbol which shows some changes.

3. Device Package

DIP16 DIP16-P-300-2.54A	DIP18 P-DIP18-300-2.54-001	DIP20 DIP20-P-300-2.54A
Package dimension unit: mm	Package dimension unit: mm	Package dimension unit: mm
		

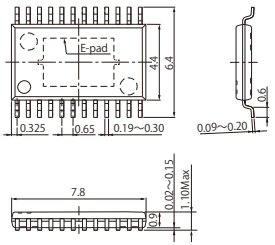
HDIP30 P-HDIP30-1233-1.78-001	HQFP64 HQFP64-P-1010-0.50	HSOP16 HSOP16-P-300-1.00
Package dimension unit: mm	Package dimension unit: mm	Package dimension unit: mm
		

HSOP28 HSOP28-P-0450-0.80	HSSOP28 P-HSSOP28-0819-0.80-001	HSSOP34 P-HSSOP34-0918-0.80-001
Package dimension unit: mm	Package dimension unit: mm	Package dimension unit: mm
		

· The drawing in the table above is a simplified version. Please check the target product data sheet for details of the package drawing.

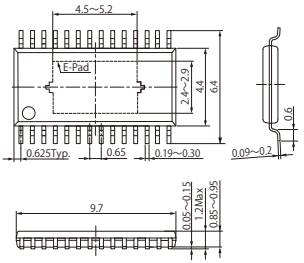
HTSSOP24
P-HTSSOP24-0508-0.65-001

Package dimension unit: mm



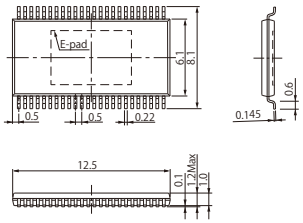
HTSSOP28
P-HTSSOP28-0510-0.65-001

Package dimension unit: mm



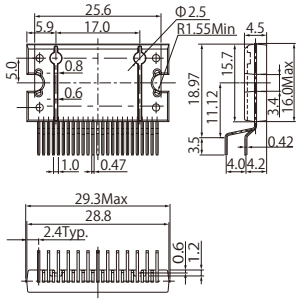
HTSSOP48
HTSSOP48-P-300-0.50

Package dimension unit: mm



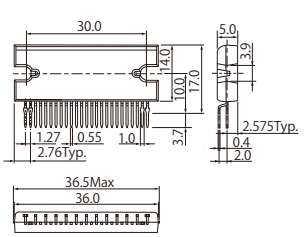
HZIP25
HZIP25-P-1.00F

Package dimension unit: mm



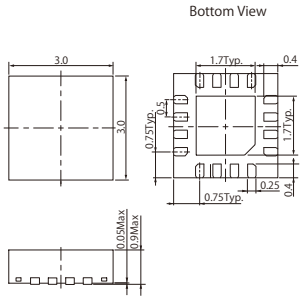
HZIP25
HZIP25-P-1.27

Package dimension unit: mm



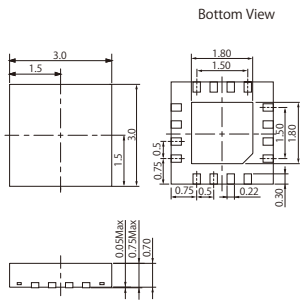
QFN16
P-VQFN16-0303-0.50-001

Package dimension unit: mm



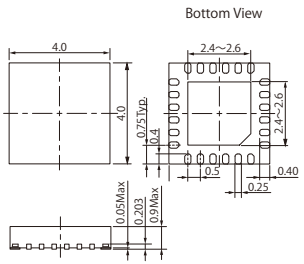
QFN16
P-WQFN16-0303-0.50-001

Package dimension unit: mm



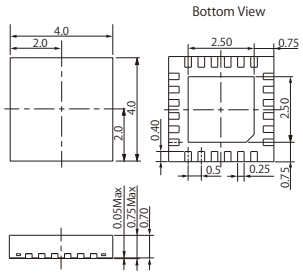
QFN24
P-VQFN24-0404-0.50-004

Package dimension unit: mm



QFN24
P-WQFN24-0404-0.50-004

Package dimension unit: mm

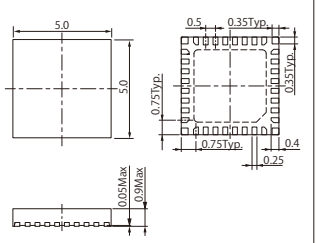


· The drawing in the table above is a simplified version. Please check the target product data sheet for details of the package drawing.

QFN32
P-VQFN32-0505-0.50-002

Package dimension unit: mm

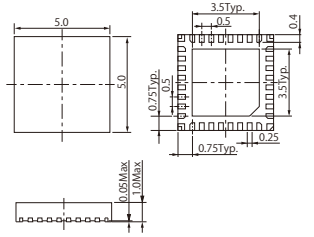
Bottom View



QFN32
P-VQFN32-0505-0.50-004

Package dimension unit: mm

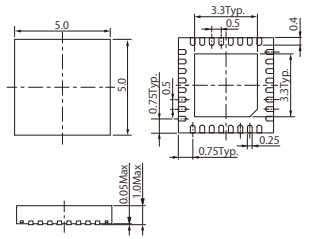
Bottom View



QFN32
P-VQFN32-0505-0.50-005

Package dimension unit: mm

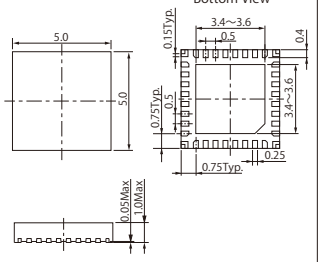
Bottom View



QFN32
P-VQFN32-0505-0.50-008

Package dimension unit: mm

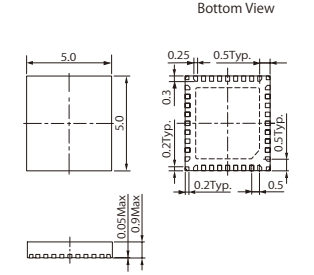
Bottom View



QFN36
P-VQFN36-0505-0.50-001

Package dimension unit: mm

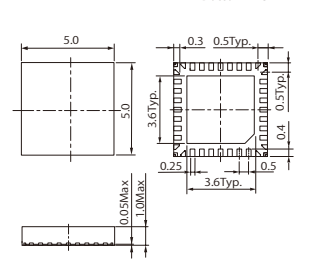
Bottom View



QFN36
P-VQFN36-0505-0.50-002

Package dimension unit: mm

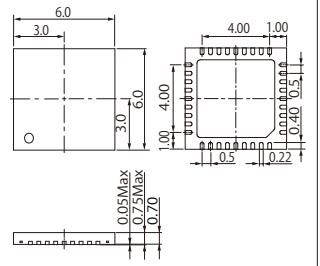
Bottom View



QFN36
P-WQFN36-0606-0.50-001

Package dimension unit: mm

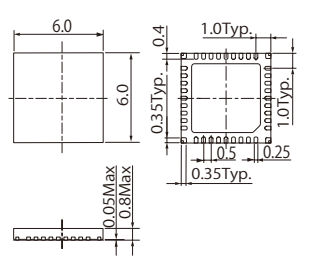
Bottom View



QFN36
P-WQFN36-0606-0.50-002

Package dimension unit: mm

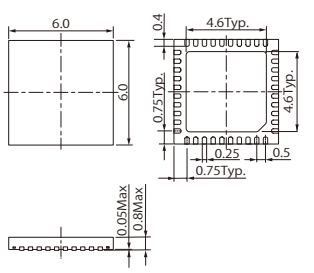
Bottom View



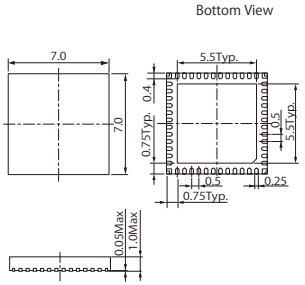
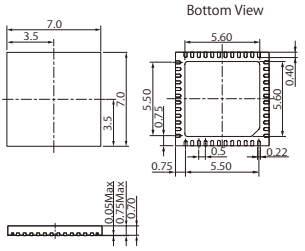
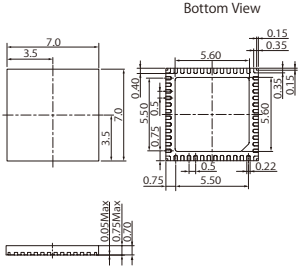
QFN40
P-WQFN40-0606-0.50-001

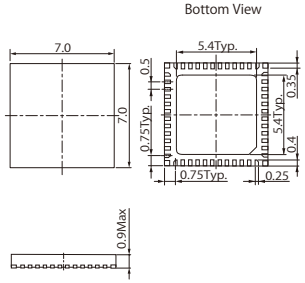
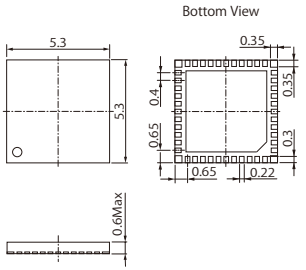
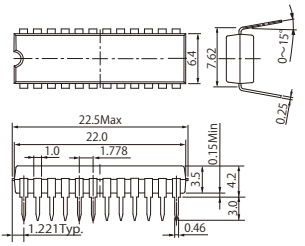
Package dimension unit: mm

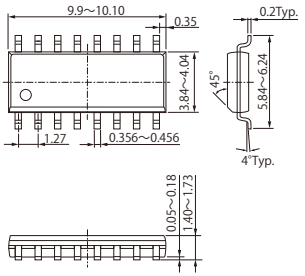
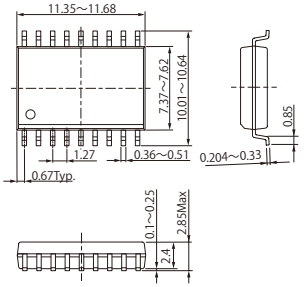
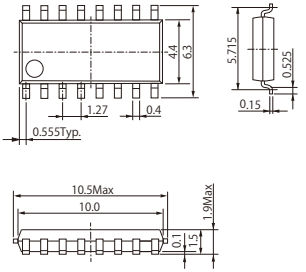
Bottom View



· The drawing in the table above is a simplified version. Please check the target product data sheet for details of the package drawing.

QFN48 P-VQFN48-0707-0.50-004	QFN48 P-WQFN48-0707-0.50-001	QFN48 P-WQFN48-0707-0.50-003
Package dimension unit: mm Bottom View 	Package dimension unit: mm Bottom View 	Package dimension unit: mm Bottom View 

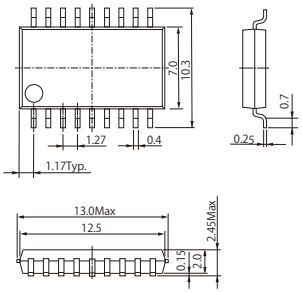
QFN48 QFN48-P-0707-0.50	QON44 VQON44-P-0606-0.40	SDIP24 SDIP24-P-300-1.78
Package dimension unit: mm Bottom View 	Package dimension unit: mm Bottom View 	Package dimension unit: mm 

SOL16 P-SOP16-0410-1.27-002	SOL18 P-SOP18-0812-1.27-001	SOP16 SOP16-P-225-1.27
Package dimension unit: mm 	Package dimension unit: mm 	Package dimension unit: mm 

· The drawing in the table above is a simplified version. Please check the target product data sheet for details of the package drawing.

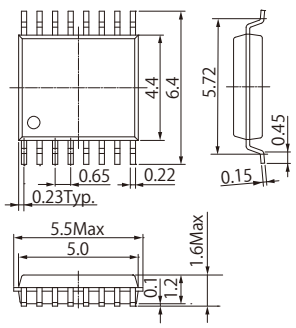
SOP18
SOP18-P-375-1.27

Package dimension unit: mm



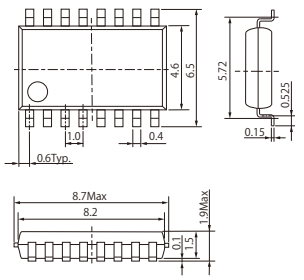
SSOP16
SSOP16-P-225-0.65B

Package dimension unit: mm



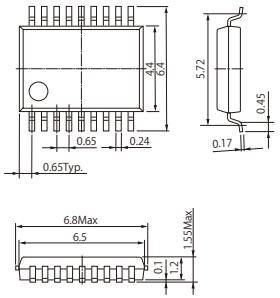
SSOP16
SSOP16-P-225-1.00A

Package dimension unit: mm



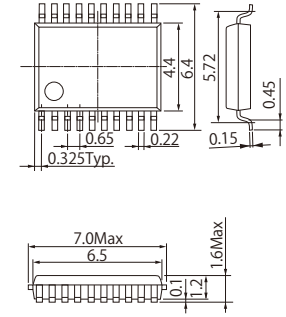
SSOP18
SSOP18-P-225-0.65

Package dimension unit: mm



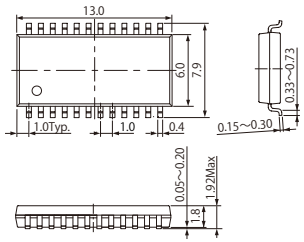
SSOP20
SSOP20-P-225-0.65A

Package dimension unit: mm



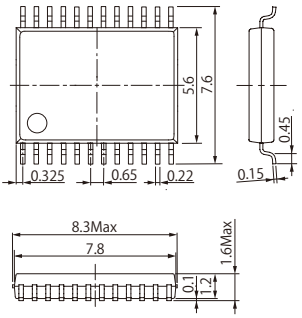
SSOP24
P-SSOP24-0613-1.00-001

Package dimension unit: mm



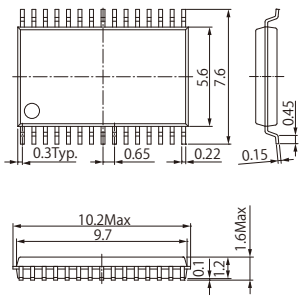
SSOP24
SSOP24-P-300-0.65A

Package dimension unit: mm



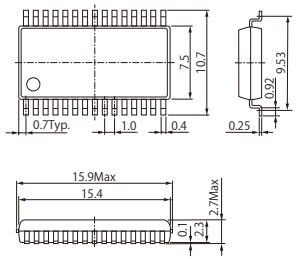
SSOP30
SSOP30-P-300-0.65

Package dimension unit: mm

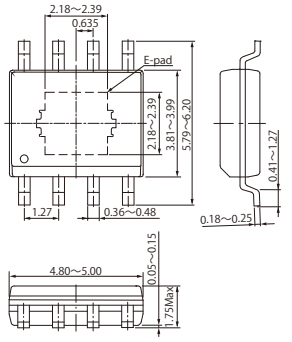
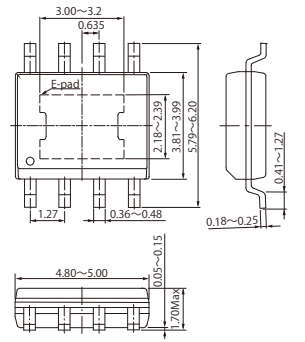
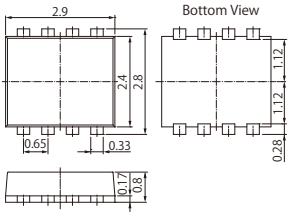


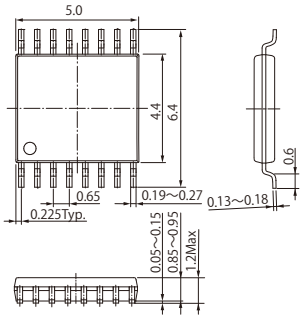
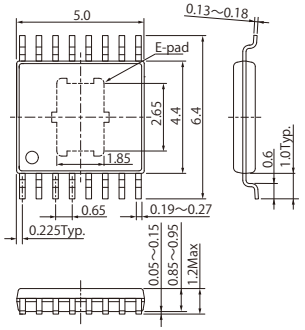
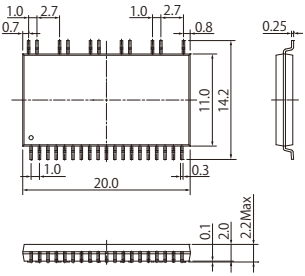
SSOP30
SSOP30-P-375-1.00

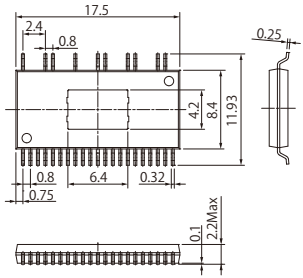
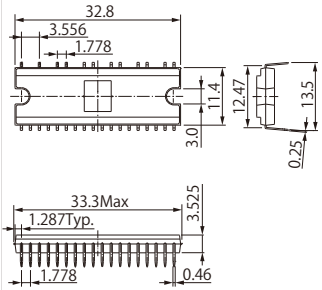
Package dimension unit: mm



· The drawing in the table above is a simplified version. Please check the target product data sheet for details of the package drawing.

SSOP8 P-HSOP8-0405-1.27-001	SSOP8 P-HSOP8-0405-1.27-002	PS-8 SON8-P-0303-0.65S
Package dimension unit: mm	Package dimension unit: mm	Package dimension unit: mm
		

TSSOP16 P-TSSOP16-0505-0.65-001	HTSSOP16 P-HTSSOP16-0505-0.65-002	SSOP30 P-SSOP30-1120-1.00-001
Package dimension unit: mm	Package dimension unit: mm	Package dimension unit: mm
		

HSSOP31 P-HSSOP31-0918-0.80-002	HDIP30 P-HDIP30-1233-1.78-001
Package dimension unit: mm	Package dimension unit: mm
	

· The drawing in the table above is a simplified version. Please check the target product data sheet for details of the package drawing.

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