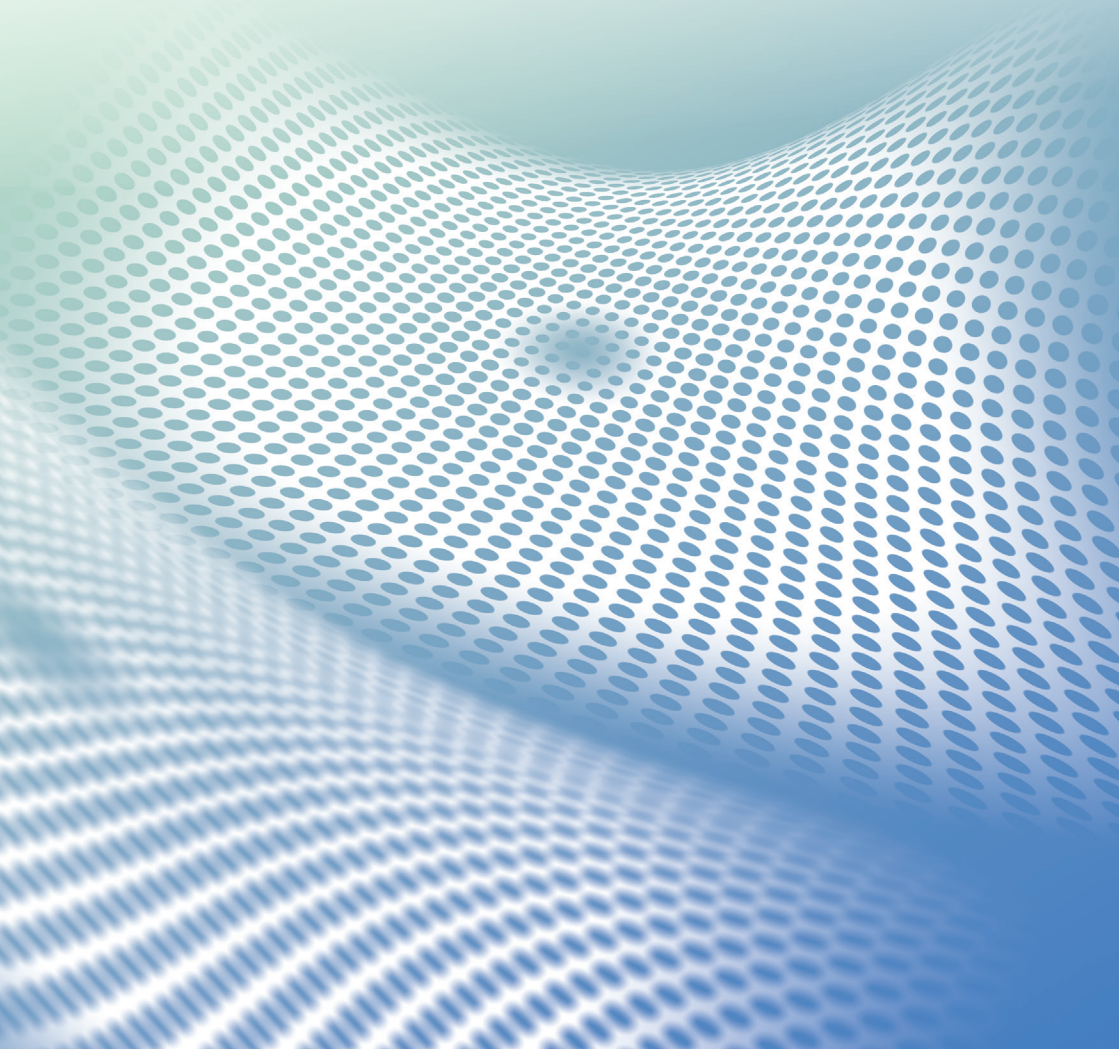




TOSHIBA

Selection Guide 2024

Discrete Device Package Lineups



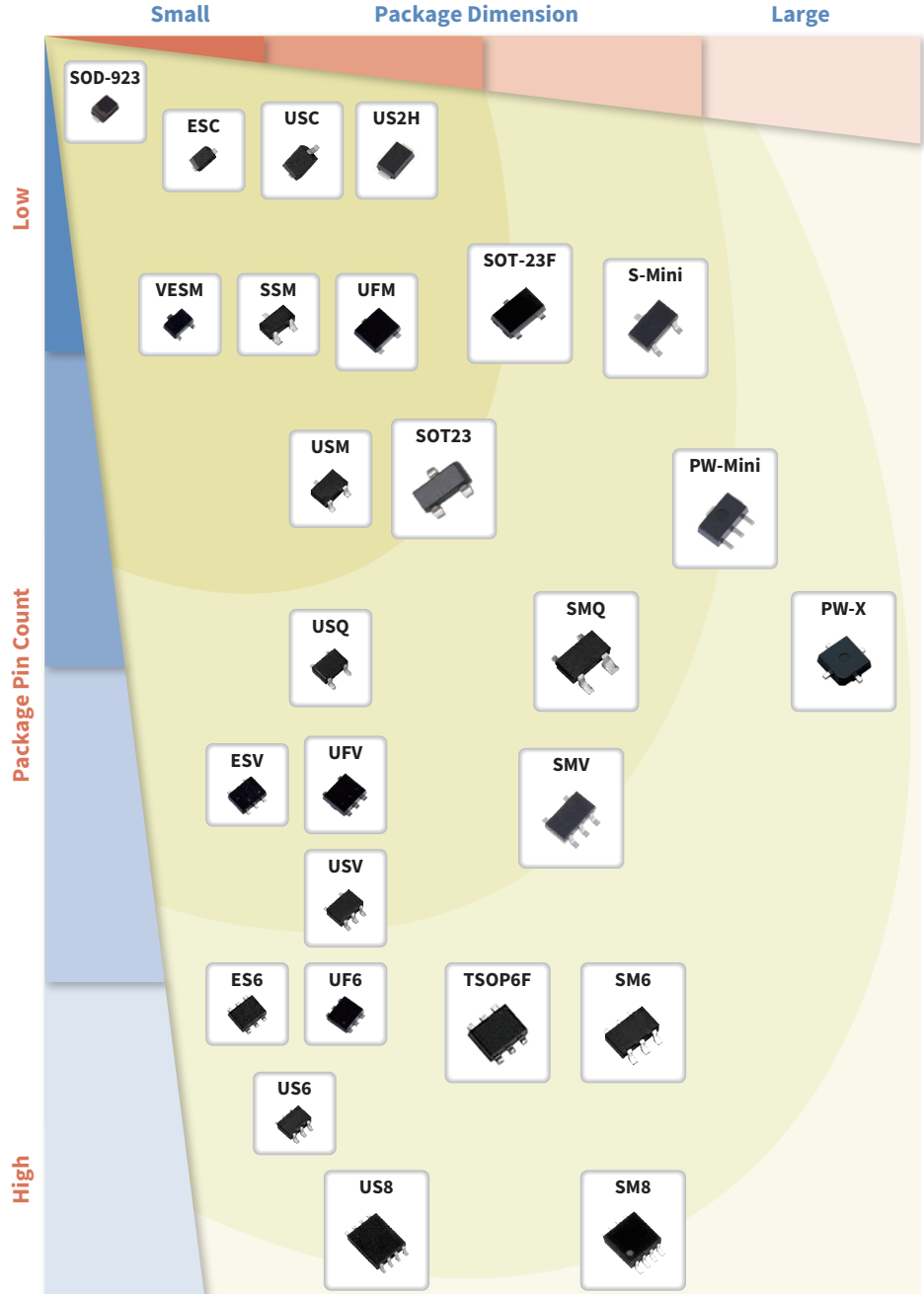
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1. Small Signal Devices

Package Lineups

Surface Mount Type (Lead Type)



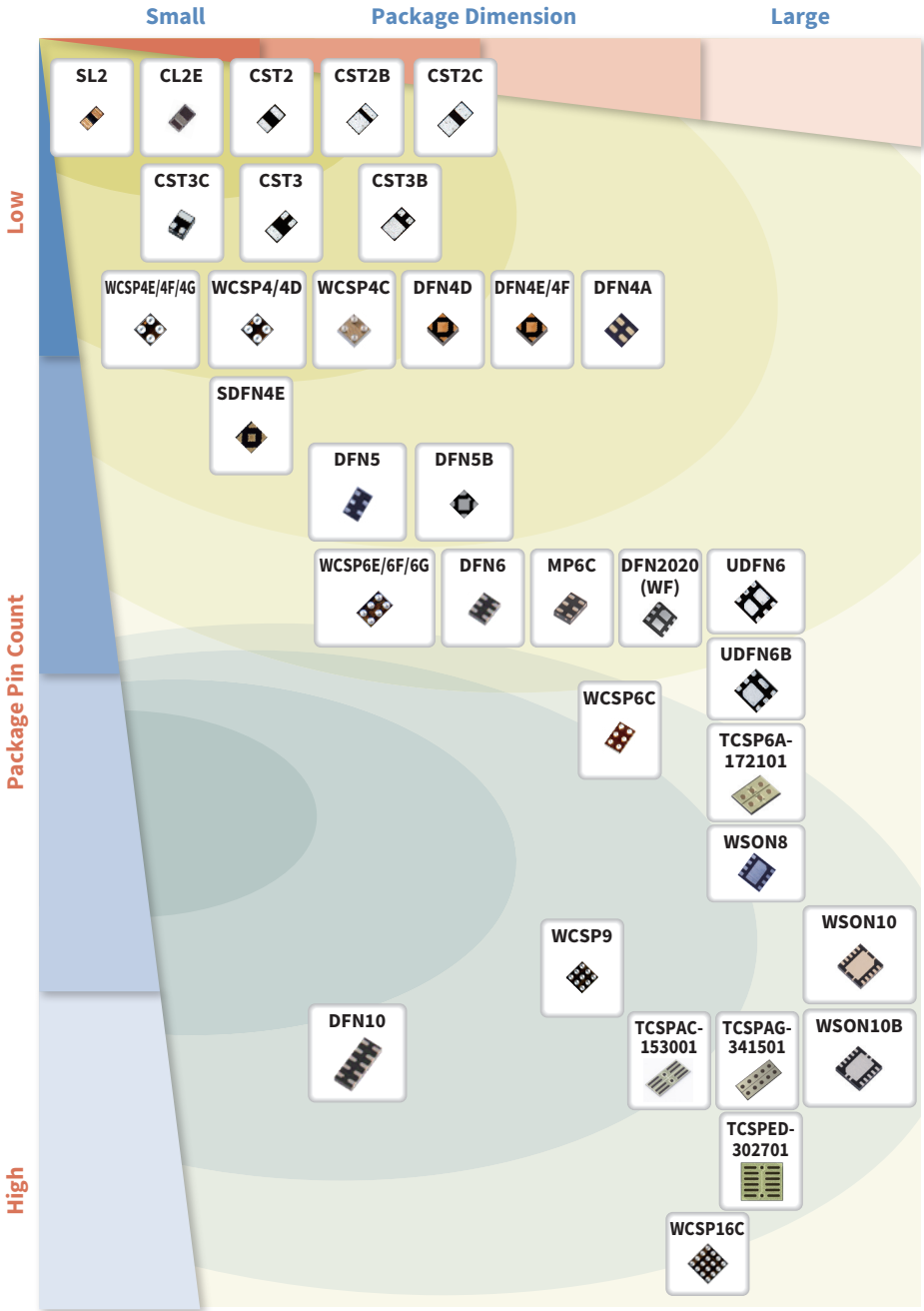
Surface Mount Type (Lead Type)

Package	Pin Count	Dimension W x L (mm)	Products									Page
			MOSFETs	Diodes	Power Management ICs				Linear ICs, Sensors	Transistors	RF Devices (Radio-Frequency Devices)	
					LDO Regulators	Load Switch ICs	eFuse ICs	MOSFET Gate Driver ICs				
SOD-923	2	1.0 x 0.6		✓							✓	8
ESC (SOD-523)	2	1.6 x 0.8		✓							✓	8
USC (SOD-323)	2	2.5 x 1.25		✓							✓	8
US2H (SOD-323HE)	2	2.5 x 1.4		✓								8
VESM (SOT-723)	3	1.2 x 1.2	✓	✓						✓	✓	8
SSM (SOT-416)	3	1.6 x 1.6	✓	✓						✓	✓	8
UFM (SOT-323F)	3	2.0 x 2.1	✓							✓	✓	9
USM (SOT-323)	3	2.0 x 2.1	✓	✓						✓	✓	9
SOT23 (SOT-23)	3	2.9 x 2.4	✓	✓						✓		9
SOT-23F	3	2.9 x 2.4	✓						✓	✓	✓	9
S-Mini (SOT-346)	3	2.9 x 2.5	✓	✓						✓	✓	9
PW-Mini	3	4.6 x 4.2									✓	9
USQ (SOT-343)	4	2.0 x 2.1		✓							✓	10
SMQ (SOT-24)	4	2.9 x 2.9		✓							✓	10
PW-X	4	6.1 x 6.3									✓	10
ESV (SOT-553)	5	1.6 x 1.6	✓	✓	✓				✓	✓		10
UFV (SOT-353F)	5	2.0 x 2.1	✓	✓	✓				✓			10
USV (SOT-353)	5	2.0 x 2.1	✓	✓					✓	✓		10
SMV (SOT-25)	5	2.9 x 2.8		✓	✓	✓			✓	✓		11
ES6 (SOT-563)	6	1.6 x 1.6	✓	✓						✓		11
UF6 (SOT-363F)	6	2.0 x 2.1	✓									11
US6 (SOT-363)	6	2.0 x 2.1	✓	✓						✓		11
SM6 (SOT-26)	6	2.9 x 2.8		✓						✓		11
TSOP6F	6	2.9 x 2.8	✓									11
US8 (SOT-765)	8	2.0 x 3.1							✓			12
SM8 (SOT-505)	8	2.9 x 4.0							✓			12

Note

Linear ICs, Sensors: Operational Amplifiers and Comparators, Magnetic Sensors, Thermoflagger™ (Over Temperature Detection IC)
 "Thermoflagger™" is a trademark of Toshiba Electronic Devices & Storage Corporation.

Surface Mount Type (Leadless Type)



Surface Mount Type (Leadless Type)

Package	Pin Count	Dimension W x L (mm)	Products									Page
			MOSFETs	Diodes	Power Management ICs				Linear ICs, Sensors	Transistors	RF Devices (Radio-Frequency Devices)	
					LDO Regulators	Load Switch ICs	eFuse ICs	MOSFET Gate Driver ICs				
SL2 (SOD-962)	2	0.62 x 0.32		✓							✓	13
CL2E	2	1.0 x 0.6		✓								13
CST2 (SOD-882)	2	1.0 x 0.6		✓							✓	13
CST2B	2	1.2 x 0.8		✓								13
CST2C (SOD-963)	2	1.6 x 0.8		✓								13
CST3C	3	0.8 x 0.6	✓									13
CST3 (SOT-883)	3	1.0 x 0.6	✓	✓						✓		14
CST3B	3	1.2 x 0.8	✓									14
WCSP4E	4	0.645 x 0.645			✓							14
WCSP4F	4	0.645 x 0.645			✓							14
WCSP4G	4	0.645 x 0.645				✓						14
WCSP4	4	0.79 x 0.79			✓							14
WCSP4D	4	0.79 x 0.79				✓						15
SDFN4E	4	0.8 x 0.8			✓							15
WCSP4C	4	0.9 x 0.9				✓						15
DFN4D	4	1.0 x 1.0			✓							15
DFN4E	4	1.0 x 1.0			✓							15
DFN4F	4	1.0 x 1.0			✓							15
DFN4A	4	1.2 x 1.2				✓						16
DFN5B	5	1.2 x 1.2			✓							16
DFN5	5	1.3 x 0.8		✓								16
WCSP6E	6	1.2 x 0.8				✓		✓				16
WCSP6F	6	1.2 x 0.8			✓							16
WCSP6G	6	1.2 x 0.8						✓				16
DFN6	6	1.25 x 1.0		✓								17
MP6C	6	1.45 x 1.0						✓				17
WCSP6C	6	1.5 x 1.0	✓			✓						17
DFN2020(WF)	6	2.0 x 2.0	✓									17
UDFN6 (SOT-1118)	6	2.0 x 2.0	✓									17
UDFN6B (SOT-1220)	6	2.0 x 2.0	✓	✓								17
TCSP6A-172101	6	2.14 x 1.67	✓									18
WSON8	8	2.0 x 2.0					✓					18
WCSP9	9	1.5 x 1.5				✓						18
DFN10	10	2.5 x 1.0		✓								18
TCSPAC-153001	10	2.98 x 1.49	✓									18
TCSPAG-341501	10	3.37 x 1.47	✓									18
WSON10	10	3.0 x 3.0					✓					19
WSON10B	10	3.0 x 3.0					✓					19
TCSPED-302701	14	3.0 x 2.74	✓									19
WCSP16C	16	1.9 x 1.9				✓						19

Note

Linear ICs, Sensors: Operational Amplifiers and Comparators, Magnetic Sensors, Thermoflagger™ (Over Temperature Detection IC)
 *Thermoflagger™ is a trademark of Toshiba Electronic Devices & Storage Corporation.

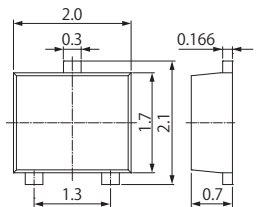
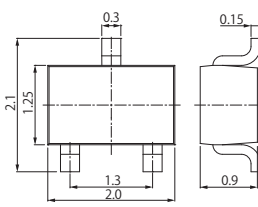
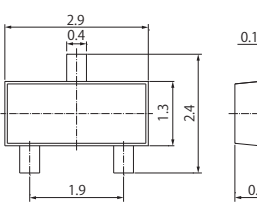
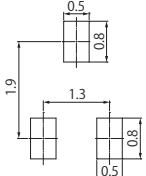
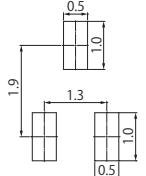
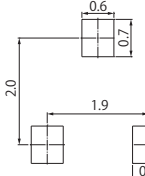
■ Dimensional Outline

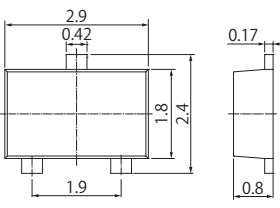
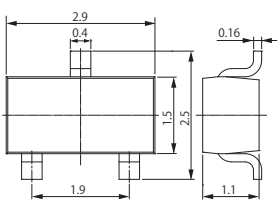
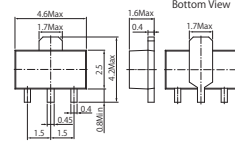
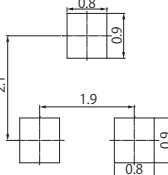
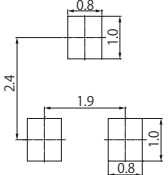
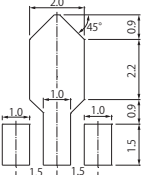
Surface Mount Type (Lead Type)

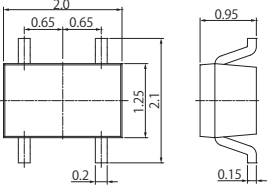
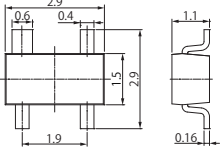
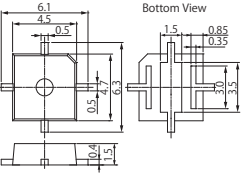
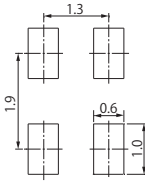
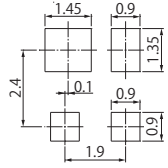
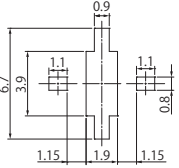
SOD-923 (1.0 x 0.6)			ESC (SOD-523) (1.6 x 0.8)			USC (SOD-323) (2.5 x 1.25)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
2	0.55 mg	10,000 p/reel	2	1.4 mg	- *	2	4.5 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

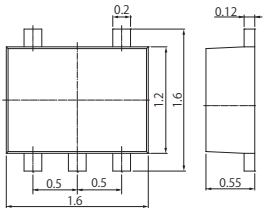
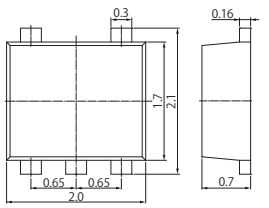
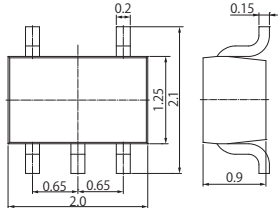
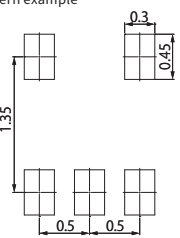
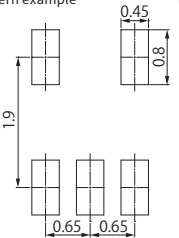
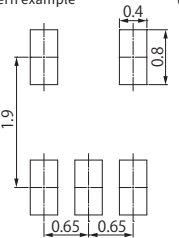
* TPL3 8,000p/reel, TPH3 4,000p/reel

US2H (SOD-323HE) (2.5 x 1.4)			VESM (SOT-723) (1.2 x 1.2)			SSM (SOT-416) (1.6 x 1.6)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
2	5.4 mg	3,000 p/reel	3	1.5 mg	8,000 p/reel	3	2.4 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

UFM (SOT-323F) (2.0 x 2.1)			USM (SOT-323) (2.0 x 2.1)			SOT23 (SOT-23) (2.9 x 2.4)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
3	6.6 mg	3,000 p/reel	3	6 mg	3,000 p/reel	3	9 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

SOT-23F (2.9 x 2.4)			S-Mini (SOT-346) (2.9 x 2.5)			PW-Mini (4.6 x 4.2)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
3	11 mg	3,000 p/reel	3	12 mg	3,000 p/reel	3	50 mg	1,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	13 mm	12 mm

USQ (SOT-343) (2.0 x 2.1)			SMQ (SOT-24) (2.9 x 2.9)			PW-X (6.1 x 6.3)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
								
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	6 mg	3,000 p/reel	4	13 mg	3,000 p/reel	4	80 mg	1,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	13 mm	12 mm

ESV (SOT-553) (1.6 x 1.6)			UFV (SOT-353F) (2.0 x 2.1)			USV (SOT-353) (2.0 x 2.1)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
								
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
5	3 mg	- *	5	7 mg	3,000 p/reel	5	6 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

* TPL3 8,000p/reel, TE85L 4,000p/reel

SMV (SOT-25) (2.9 x 2.8)			ES6 (SOT-563) (1.6 x 1.6)			UF6 (SOT-363F) (2.0 x 2.1)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
5	14 mg	3,000 p/reel	6	3 mg	- *	6	7 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

* TPL3 8,000p/reel, TE85L 4,000p/reel

US6 (SOT-363) (2.0 x 2.1)			SM6 (SOT-26) (2.9 x 2.8)			TSOP6F (2.9 x 2.8)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	6.8 mg	3,000 p/reel	6	15 mg	3,000 p/reel	6	16 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

US8 (SOT-765) (2.0 x 3.1)			SM8 (SOT-505) (2.9 x 4.0)		
Package dimension		unit : mm	Package dimension		unit : mm
Land pattern example		unit : mm	Land pattern example		unit : mm
Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	8.8 mg	3,000 p/reel	8	21 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	13 mm	12 mm

Surface Mount Type (Leadless Type)

SL2 (SOD-962) (0.62 x 0.32)			CL2E (1.0 x 0.6)			CST2 (SOD-882) (1.0 x 0.6)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
2	0.2 mg	10,000 p/reel	2	0.39 mg	10,000 p/reel	2	0.7 mg	10,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

CST2B (1.2 x 0.8)			CST2C (SOD-963) (1.6 x 0.8)			CST3C (0.8 x 0.6)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
2	0.7 mg	10,000 p/reel	2	1.5 mg	10,000 p/reel	3	0.63 mg	10,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

CST3 (SOT-883) (1.0 x 0.6)			CST3B (1.2 x 0.8)			WCSP4E (0.645 x 0.645)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
3	0.75 mg	10,000 p/reel	3	1.5 mg	10,000 p/reel	4	0.34 mg	5,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

WCSP4F (0.645 x 0.645)			WCSP4G (0.645 x 0.645)			WCSP4 (0.79 x 0.79)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	0.26 mg	5,000 p/reel	4	0.38 mg	5,000 p/reel	4	0.7 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

WCSP4D (0.79 x 0.79)			SDFN4E (0.8 x 0.8)			WCSP4C (0.9 x 0.9)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Land pattern example unit : mm			Land pattern example unit : mm			Land pattern example unit : mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	0.79 mg	5,000 p/reel	4	0.6 mg	10,000 p/reel	4	0.9 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

DFN4D (1.0 x 1.0)			DFN4E (1.0 x 1.0)			DFN4F (1.0 x 1.0)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Land pattern example unit : mm			Land pattern example unit : mm			Land pattern example unit : mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	1.1 mg	10,000 p/reel	4	1.3 mg	10,000 p/reel	4	0.93 mg	10,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

DFN4A (1.2 x 1.2)			DFN5B (1.2 x 1.2)			DFN5 (1.3 x 0.8)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	1.45 mg	5,000 p/reel	5	1.4 mg	5,000 p/reel	5	1 mg	5,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

WCSP6E (1.2 x 0.8)			WCSP6F (1.2 x 0.8)			WCSP6G (1.2 x 0.8)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	1 mg	5,000 p/reel	6	0.61 mg	5,000 p/reel	6	0.61 mg	5,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

DFN6 (1.25 x 1.0)			MP6C (1.45 x 1.0)			WCSP6C (1.5 x 1.0)		
Package dimension unit: mm			Package dimension unit: mm			Package dimension unit: mm		
Land pattern example unit: mm			Land pattern example unit: mm			Land pattern example unit: mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	0.7 mg	3,000 p/reel	6	2.4 mg	5,000 p/reel	6	1.4 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9.5 mm	8 mm	179 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

DFN2020(WF) (2.0 x 2.0)			UDFN6 (SOT-1118) (2.0 x 2.0)			UDFN6B (SOT-1220) (2.0 x 2.0)		
Package dimension unit: mm			Package dimension unit: mm			Package dimension unit: mm		
Land pattern example unit: mm			Land pattern example unit: mm			Land pattern example unit: mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6			6	8.5 mg	3,000 p/reel	6	8.5 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
			180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

TCSP6A-172101 (2.14 x 1.67)			WSON8 (2.0 x 2.0)			WCSP9 (1.5 x 1.5)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Land pattern example unit : mm			Land pattern example unit : mm			Land pattern example unit : mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	1.251 mg	10,000 p/reel	8			9	3.5 mg	5,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm				180 mmΦ	9 mm	8 mm

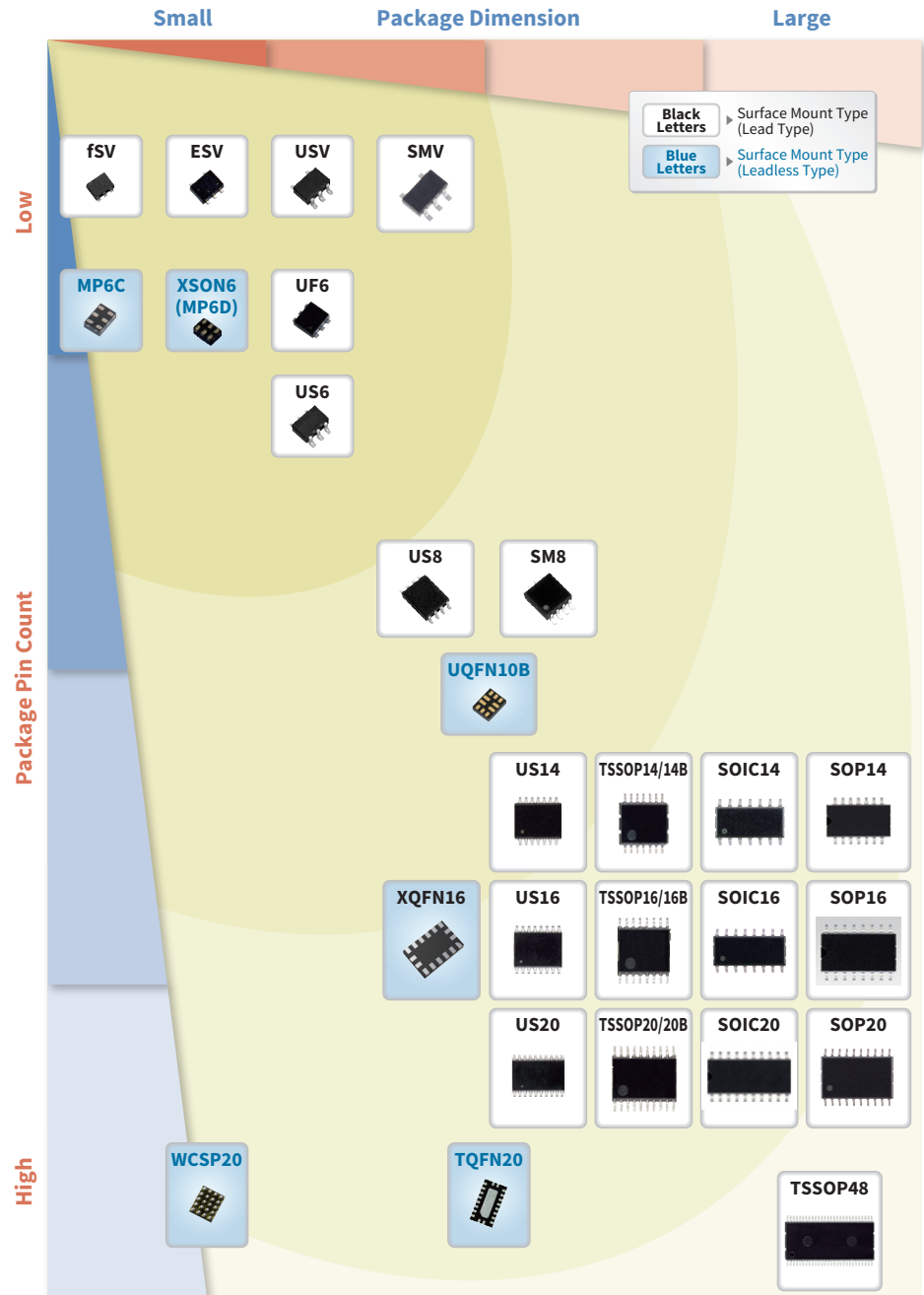
DFN10 (2.5 x 1.0)			TCSPAC-153001 (2.98 x 1.49)			TCSPAG-341501 (3.37 x 1.47)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Land pattern example unit : mm			Land pattern example unit : mm			Land pattern example unit : mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
10	3.2 mg	3,000 p/reel	10	1.499 mg		10	1.69 mg	
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9.5 mm	8 mm						

WSON10 (3.0 x 3.0)			WSON10B (3.0 x 3.0)			TCSPEP-302701 (3.0 x 2.74)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
10	19.7 mg	4,000 p/reel	10	19.3 mg	4,000 p/reel	14	4.05 mg	
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm			

WCSP16C (1.9 x 1.9)		
Package dimension unit: mm 		
Land pattern example unit: mm 		
Pin count	Weight	MOQ
16	3.9 mg	5,000 p/reel
Reel dimension		Tape width
Diameter	Width	
180 mmΦ	9 mm	8 mm

2. Logic ICs

Package Lineups



Package		Pin Count	Dimension W x L (mm)	Products				Page
				One-Gate Logic ICs	CMOS Logic ICs	Bus Switches	Level Shifters	
Surface Mount Type (Lead Type)	fSV (SOT-953)	5	1.0 x 1.0	✓			✓	22
	ESV (SOT-553)	5	1.6 x 1.6	✓				22
	USV (SOT-353)	5	2.0 x 2.1	✓		✓	✓	22
	SMV (SOT-25)	5	2.9 x 2.8	✓				22
	UF6 (SOT-363F)	6	2.0 x 2.1				✓	22
	US6 (SOT-363)	6	2.0 x 2.1	✓		✓		22
	US8 (SOT-765)	8	2.0 x 3.1	✓		✓	✓	23
	SM8 (SOT-505)	8	2.9 x 4.0	✓				23
	US14	14	4.0 x 4.0		✓	✓	✓	23
	TSSOP14	14	5.0 x 6.4		✓	✓	✓	23
	TSSOP14B	14	5.0 x 6.4		✓			23
	SOIC14	14	8.65 x 6.0		✓			23
	SOP14	14	10.3 x 7.8		✓			24
	US16	16	4.0 x 4.0		✓	✓	✓	24
	TSSOP16	16	5.0 x 6.4		✓	✓	✓	24
	TSSOP16B	16	5.0 x 6.4		✓		✓	24
	SOIC16	16	9.9 x 6.0		✓			24
	SOP16	16	10.3 x 7.8		✓			24
	US20	20	5.0 x 4.0		✓	✓	✓	25
	TSSOP20	20	6.5 x 6.4		✓	✓	✓	25
TSSOP20B	20	6.5 x 6.4		✓			25	
SOP20	20	12.8 x 7.8		✓			25	
SOIC20	20	12.8 x 10.3		✓			25	
TSSOP48	48	12.5 x 8.1		✓		✓	25	
Surface Mount Type (Leadless Type)	MP6C	6	1.45 x 1.0				✓	26
	XSON6(MP6D)	6	1.45 x 1.0	✓		✓		26
	UQFN10B	10	1.4 x 1.8			✓		26
	XQFN16	16	2.4 x 1.6			✓		26
	TQFN20	20	4.5 x 2.5			✓		26
	WCSP20	20	2.0 x 1.6			✓		26

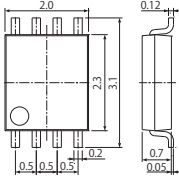
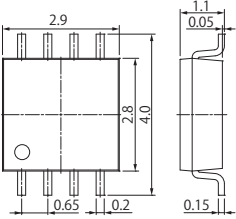
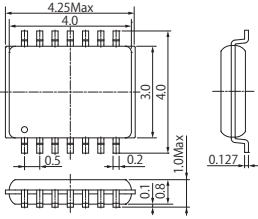
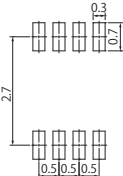
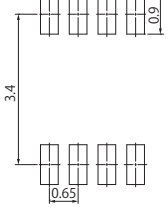
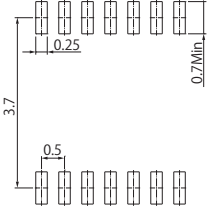
■ Dimensional Outline

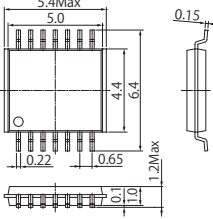
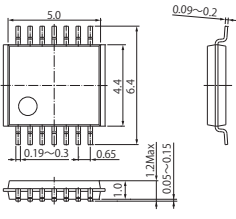
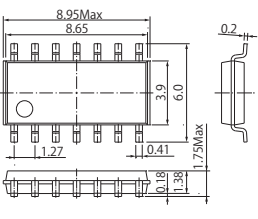
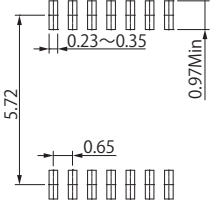
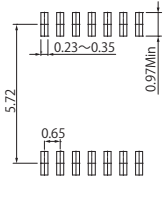
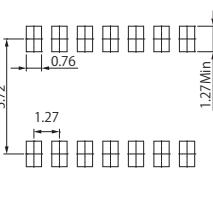
Surface Mount Type (Lead Type)

fSV (SOT-953) (1.0 x 1.0)			ESV (SOT-553) (1.6 x 1.6)			USV (SOT-353) (2.0 x 2.1)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
5	1 mg	10,000 p/reel	5	3 mg	- *	5	6 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

* TPL3 8,000p/reel, TE85L 4,000p/reel

SMV (SOT-25) (2.9 x 2.8)			UF6 (SOT-363F) (2.0 x 2.1)			US6 (SOT-363) (2.0 x 2.1)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
5	14 mg	3,000 p/reel	6	7 mg	3,000 p/reel	6	6.8 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

US8 (SOT-765) (2.0 x 3.1)			SM8 (SOT-505) (2.9 x 4.0)			US14 (4.0 x 4.0)		
Package dimension unit: mm			Package dimension unit: mm			Package dimension unit: mm		
								
Land pattern example unit: mm			Land pattern example unit: mm			Land pattern example unit: mm		
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	8.8 mg	3,000 p/reel	8	21 mg	3,000 p/reel	14	20 mg	2,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	13 mm	12 mm	254 mmΦ	13 mm	12 mm

TSSOP14 (5.0 x 6.4)			TSSOP14B (5.0 x 6.4)			SOIC14 (8.65 x 6.0)		
Package dimension unit: mm			Package dimension unit: mm			Package dimension unit: mm		
								
Land pattern example unit: mm			Land pattern example unit: mm			Land pattern example unit: mm		
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
14	60 mg	2,000 p/reel	14	54 mg	2,500 p/reel	14	130 mg	2,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	17.5 mm	16 mm	330 mmΦ	13 mm	12 mm	330 mmΦ	17.4 mm	16 mm

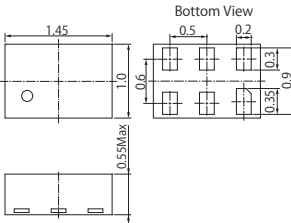
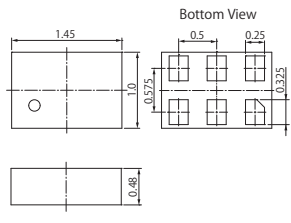
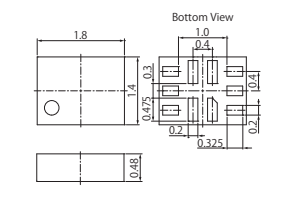
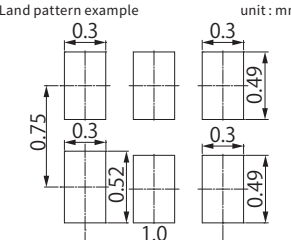
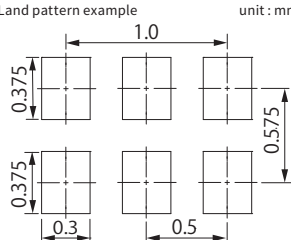
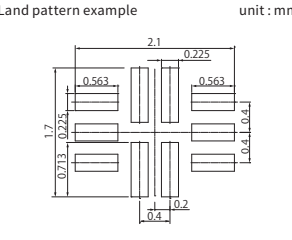
SOP14 (10.3 x 7.8)			US16 (4.0 x 4.0)			TSSOP16 (5.0 x 6.4)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
14	180 mg	2,000 p/reel	16	20 mg	2,500 p/reel	16	60 mg	2,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	17.5 mm	16 mm	254 mmΦ	13 mm	12 mm	330 mmΦ	17.5 mm	16 mm

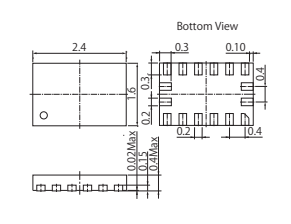
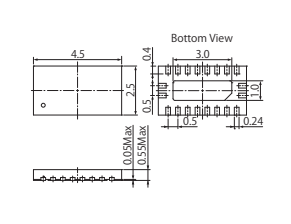
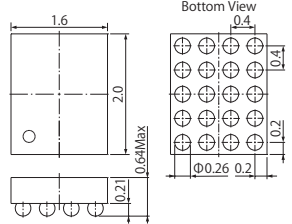
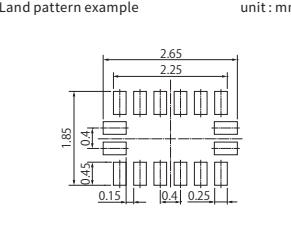
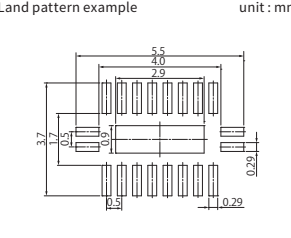
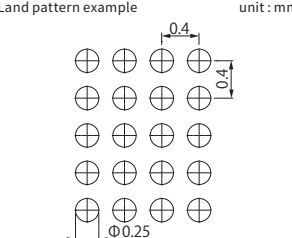
TSSOP16B (5.0 x 6.4)			SOIC16 (9.9 x 6.0)			SOP16 (10.3 x 7.8)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
16	55 mg	2,500 p/reel	16	150 mg	2,500 p/reel	16	180 mg	2,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	13.5 mm	12 mm	330 mmΦ	17.4 mm	16 mm	330 mmΦ	17.5 mm	16 mm

US20 (5.0 x 4.0)			TSSOP20 (6.5 x 6.4)			TSSOP20B (6.5 x 6.4)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
20	30 mg	2,500 p/reel	20	80 mg	2,000 p/reel	20	71 mg	2,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
254 mmΦ	13 mm	12 mm	220 mmΦ	17.5 mm	16 mm	330 mmΦ	17 mm	16 mm

SOP20 (12.8 x 7.8)			SOIC20 (12.8 x 10.3)			TSSOP48 (12.5 x 8.1)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
20	220 mg	2,000 p/reel	20	510 mg	2,000 p/reel	48	250 mg	1,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	25.5 mm	24 mm	330 mmΦ	25.4 mm	24 mm	330 mmΦ	25.5 mm	24 mm

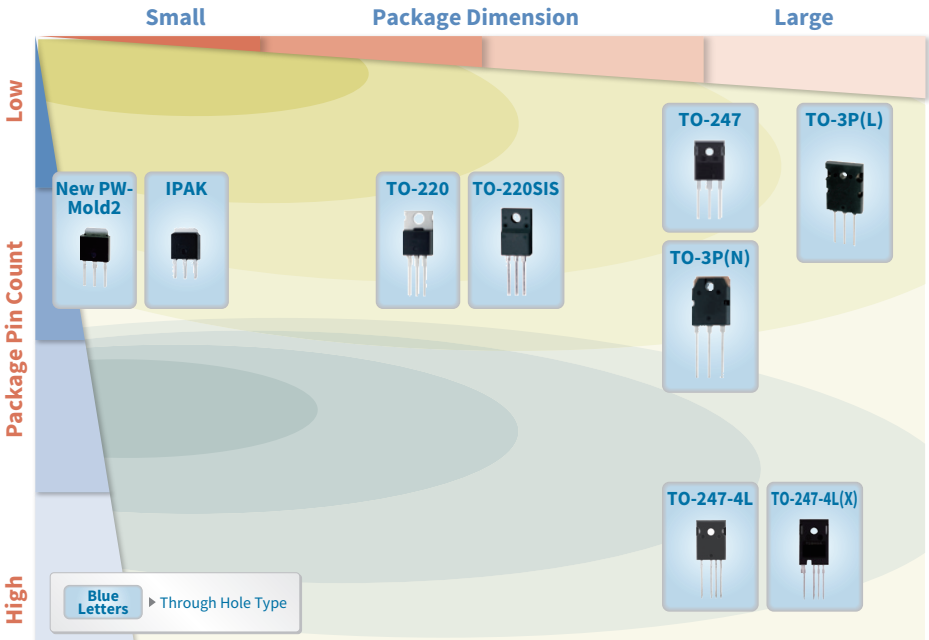
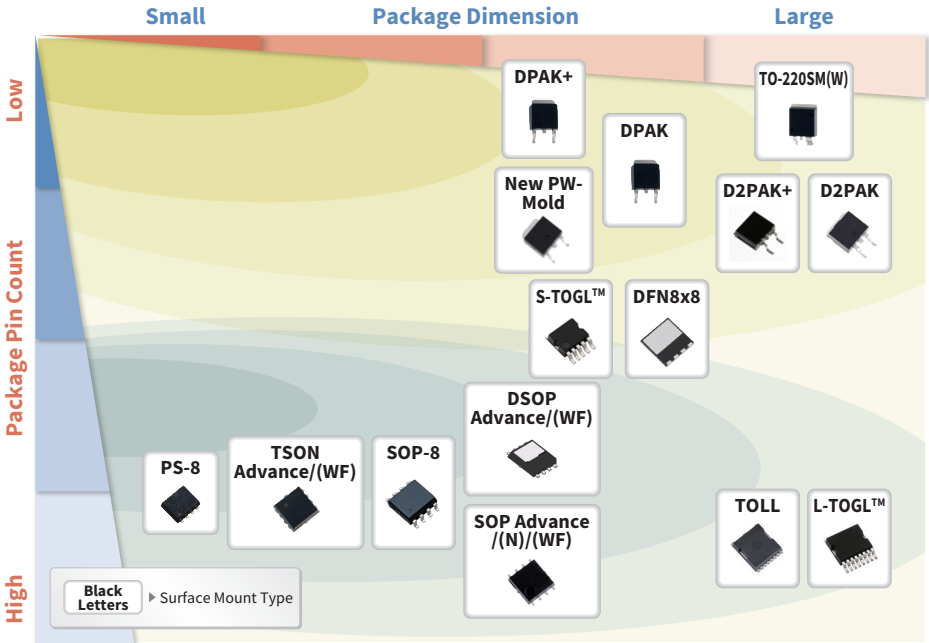
Surface Mount Type (Leadless Type)

MP6C (1.45 x 1.0)			XSON6(MP6D) (1.45 x 1.0)			UQFN10B (1.4 x 1.8)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	2.4 mg	5,000 p/reel	6	2.4 mg	10,000 p/reel	10	3.5 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
179 mmΦ	8.4 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

XQFN16 (2.4 x 1.6)			TQFN20 (4.5 x 2.5)			WCSP20 (2.0 x 1.6)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
16			20	17 mg	5,000 p/reel	20	5 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
			179 mmΦ	13.8 mm	12 mm	180 mmΦ	9 mm	8 mm

3. Power MOSFETs

■ Package Lineups



* S-TOGL™ and L-TOGL™ are trademarks of Toshiba Electronic Devices & Storage Corporation.

Package		Pin Count	Dimension W x L (mm)	Page	
Surface Mount Type	DPAK+	3	6.5 x 9.5	30	
	New PW-Mold	3	6.5 x 9.5	30	
	DPAK(2-7K1S)	3	6.6 x 10.0	30	
	DPAK(2-7N1S)	3	6.54 x 10.14	30	
	TO-220SM(W)	3	10.0 x 13.0	30	
	D2PAK+	3	10.0 x 15.0	30	
	D2PAK	3	10.35 x 15.3	31	
	DFN8x8	5	8.0 x 8.0	31	
	S-TOGL™	6	7.0 x 8.44	31	
	PS-8	8	2.9 x 2.8	31	
	TSON Advance	8	3.1 x 3.3	31	
	SOP-8(2-5R1S)	8	4.9 x 6.0	31	
	SOP-8(2-6J1S)	8	5.0 x 6.0	32	
	DSOP Advance	8	5.0 x 6.0	32	
	SOP Advance	8	5.0 x 6.0	32	
	SOP Advance(N)	8	4.9 x 6.1	32	
	TOLL	9	9.9 x 11.68	32	
	L-TOGL™	9	9.9 x 11.81	32	
	Wettable Flank Lead Terminal	TSON Advance(WF)	8	3.1 x 3.6	33
		DSOP Advance(WF)L	8	5.0 x 6.0	33
DSOP Advance(WF)M		8	5.0 x 6.0	33	
SOP Advance(WF)		8	5.0 x 6.0	33	
Through Hole Type	New PW-Mold2	3	6.5 x 5.5	34	
	IPAK	3	6.65 x 6.1	34	
	TO-220	3	10.16 x 15.1	34	
	TO-220SIS	3	10.0 x 15.0	34	
	TO-3P(N)	3	15.5 x 20.0	34	
	TO-247	3	15.94 x 20.95	34	
	TO-3P(L)	3	20.0 x 26.0	35	
	TO-247-4L	4	15.94 x 20.95	35	
	TO-247-4L(X)	4	15.94 x 23.45	35	

* S-TOGL™ and L-TOGL™ are trademarks of Toshiba Electronic Devices & Storage Corporation.

■ Dimensional Outline

Surface Mount Type

DPAK+ (6.5 x 9.5)			New PW-Mold (6.5 x 9.5)			DPAK(2-7K1S) (6.6 x 10.0)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
3	360 mg	2,000 p/reel	3	360 mg	2,000 p/reel	3	360 mg	2,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	17.5 mm	16 mm	330 mmΦ	17.5 mm	16 mm	332 mmΦ	16.4 mm	16 mm

DPAK(2-7N1S) (6.54 x 10.14)			TO-220SM(W) (10.0 x 13.0)			D2PAK+ (10.0 x 15.0)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
3	389 mg	2,500 p/reel	3	1070 mg	1,000 p/reel	3	992 mg	1,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	17.2 mm	16 mm	330 mmΦ	25.5 mm	24 mm	330 mmΦ	25.4 mm	24 mm

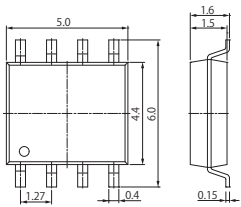
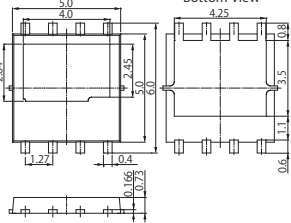
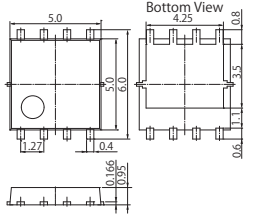
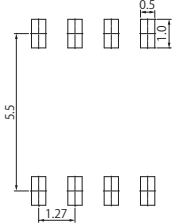
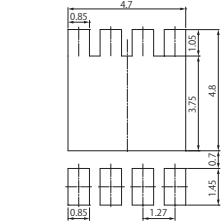
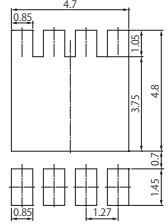
D2PAK (10.35 x 15.3)			DFN8x8 (8.0 x 8.0)			S-TOGL™ (7.0 x 8.44)		
Package dimension unit: mm 			Package dimension unit: mm Bottom View 			Package dimension unit: mm Bottom View 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
3	1590 mg	1,000 p/reel	5	175 mg	2,500 p/reel	6	377 mg	1,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
332 mmΦ	25.65 mm	24 mm	332 mmΦ	17.2 mm	16 mm	330 mmΦ	17.4 mm	16 mm

PS-8 (2.9 x 2.8)			TSON Advance (3.1 x 3.3)			SOP-8(2-5R1S) (4.9 x 6.0)		
Package dimension unit: mm Bottom View 			Package dimension unit: mm Bottom View 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	17 mg	3,000 p/reel	8	20 mg	- *	8	85 mg	2,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	330 mmΦ	13.5 mm	12 mm	330 mmΦ	13.4 mm	12 mm

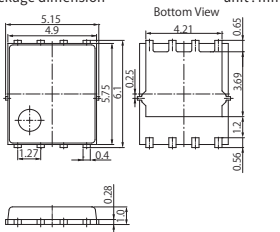
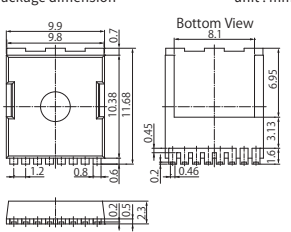
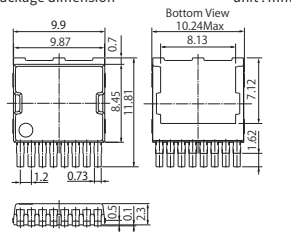
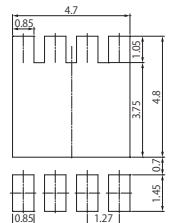
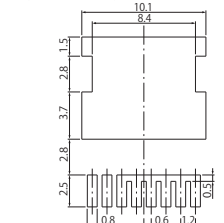
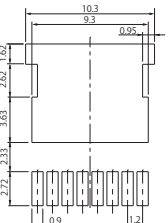
* 3,000 or 5,000 pcs/reel

* S-TOGL™ is a trademark of Toshiba Electronic Devices & Storage Corporation.

Surface Mount Type

SOP-8(2-6J1S) (5.0 x 6.0)			DSOP Advance (5.0 x 6.0)			SOP Advance (5.0 x 6.0)		
Package dimension unit: mm 			Package dimension unit: mm Bottom View 			Package dimension unit: mm Bottom View 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	85 mg	3,000 p/reel	8	98 mg	5,000 p/reel	8	69 mg	- *
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	13.4 mm	12 mm	330 mmΦ	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm

* 3,000 or 5,000 pcs/reel

SOP Advance(N) (4.9 x 6.1)			TOLL (9.9 x 11.68)			L-TOGL™ (9.9 x 11.81)		
Package dimension unit: mm Bottom View 			Package dimension unit: mm Bottom View 			Package dimension unit: mm Bottom View 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	105 mg	5,000 p/reel	9	750 mg	2,000 p/reel	9	745 mg	1,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	13.5 mm	12 mm	330 mmΦ	25.65 mm	24 mm	330 mmΦ	25.4 mm	24 mm

* L-TOGL™ is a trademark of Toshiba Electronic Devices & Storage Corporation.

Surface Mount Type (Wettable Flank Lead Terminal)

TSON Advance(WF) (3.1 x 3.6)			DSOP Advance(WF)L (5.0 x 6.0)			DSOP Advance(WF)M (5.0 x 6.0)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	20 mg	5,000 p/reel	8	98 mg	5,000 p/reel	8	98 mg	5,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	13.4 mm	12 mm	330 mmΦ	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm

SOP Advance(WF) (5.0 x 6.0)		
Package dimension unit : mm 		
Land pattern example unit : mm 		
Pin count	Weight	MOQ
8	69 mg	5,000 p/reel
Reel dimension		Tape width
Diameter	Width	
330 mmΦ	13.5 mm	12 mm

Through Hole Type

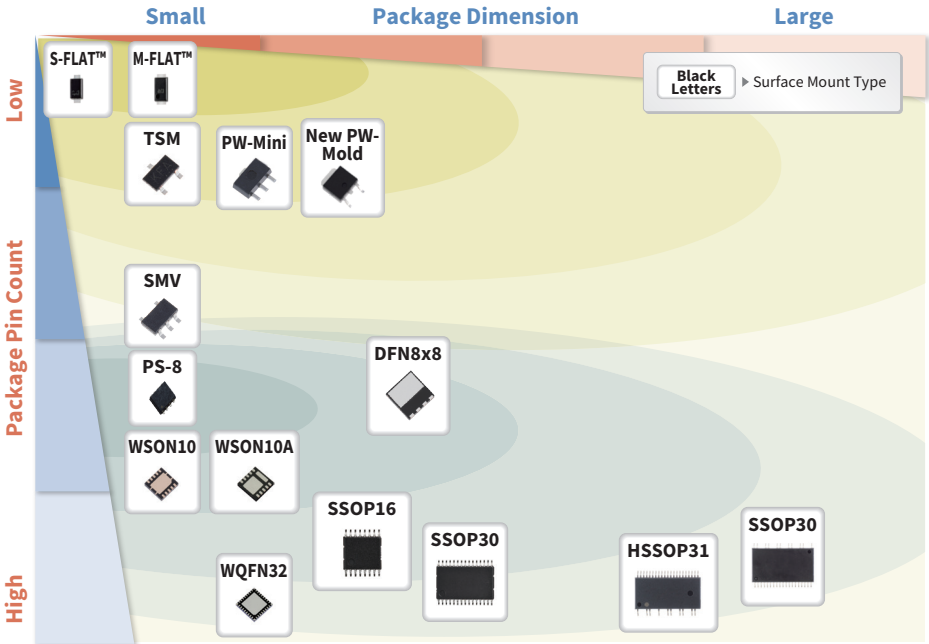
New PW-Mold2 (6.5 x 5.5)			IPAK (6.65 x 6.1)			TO-220 (10.16 x 15.1)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
3	360 mg	200 p/bag	3	337 mg	75 p/tube	3	1930 mg	50 p/tube
Carton dimension		Bag Q'ty / Carton	Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton
178 x 80 x 90 mm		15 bag	20 x 4.4 x 508 mm		90 tube	33 x 7.0 x 534.5 mm		20 tube

TO-220SIS (SC-67) (10.0 x 15.0)			TO-3P(N) (SC-65) (15.5 x 20.0)			TO-247 (15.94 x 20.95)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
3	1700 mg	50 p/tube	3	4600 mg	25 p/tube	3	6150 mg	30 p/tube
Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton
32.4 x 7.11 x 528.5 mm		30 tube	45 x 7.6 x 433 mm		40 tube	46 x 7.7 x 533.5 mm		8 tube

TO-3P(L) (20.0 x 26.0)			TO-247-4L (15.94 x 20.95)			TO-247-4L(X) (15.94 x 23.45)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
3	9750 mg	100 p/tray	4	6360 mg	30 p/tube	4	6550 mg	30 p/tube
Tray dimension		Tray Q'ty / Carton	Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton
184 x 24 x 290 mm		5 tray	45.5 x 7.6 x 533 mm		15 tube	46 x 7.7 mm		

4. Power Discrete Devices

■ Package Lineups



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Package	Pin Count	Dimension W x L (mm)	Products						Page
			Three-Phase Brushless DC Motor Driver ICs (with Built-in Power Device)	Low Voltage IPDs (Intelligent Power Devices)	Diodes	IGBTs	Bipolar Transistors		
Surface Mount Type	S-FLAT™	2	1.6 x 3.5			✓			38
	M-FLAT™	2	2.4 x 4.7			✓			38
	TSM	3	2.9 x 2.8					✓	38
	PW-Mini	3	4.6 x 4.2					✓	38
	New PW-Mold	3	6.5 x 9.5					✓	38
	SMV	5	2.9 x 2.8					✓	38
	DFN8x8	5	8.0 x 8.0			✓			39
	PS-8	8	2.9 x 2.8		✓			✓	39
	WSON10	10	3.0 x 3.0		✓				39
	WSON10A	10	3.0 x 3.0		✓				39
	SSOP16	16	5.0 x 6.4		✓				39
	SSOP30	30	10.2 x 7.6		✓				40
	SSOP30	30	20.0 x 14.2	✓					40
HSSOP31	31	17.5 x 11.93	✓					40	
WQFN32	32	5.0 x 5.0		✓				40	
Through Hole Type	TO-220-2L	2	10.05 x 15.3			✓			41
	TO-220F-2L	2	10.0 x 15.0			✓			41
	TO-247-2L	2	15.94 x 20.95			✓			41
	New PW-Mold2	3	6.5 x 5.5					✓	41
	TO-126N	3	8.0 x 11.0					✓	41
	TO-220SIS	3	10.0 x 15.0				✓	✓	41
	TO-3P(N)	3	15.5 x 20.0				✓	✓	42
	TO-247	3	15.94 x 20.95			✓	✓		42
	TO-3P(L)	3	20.0 x 26.0					✓	42
HDIP30	30	32.8 x 11.4	✓					42	

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■ Dimensional Outline

Surface Mount Type

S-FLAT™ (1.6 x 3.5)			M-FLAT™ (2.4 x 4.7)			TSM (2.9 x 2.8)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
2	13 mg	3,000 p/reel	2	23 mg	3,000 p/reel	3	10 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	9 mm	8 mm	180 mmΦ	13 mm	12 mm	180 mmΦ	9 mm	8 mm

PW-Mini (4.6 x 4.2)			New PW-Mold (6.5 x 9.5)			SMV (2.9 x 2.8)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
3	50 mg	1,000 p/reel	3	360 mg	2,000 p/reel	5	14 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	13 mm	12 mm	330 mmΦ	17.5 mm	16 mm	180 mmΦ	9 mm	8 mm

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DFN8x8 (8.0 x 8.0)			PS-8 (2.9 x 2.8)			WSN10 (3.0 x 3.0)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
5	175 mg	2,500 p/reel	8	17 mg	3,000 p/reel	10	20 mg	15,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
332 mmΦ	17.2 mm	16.2 mm	180 mmΦ	9 mm	8 mm	330 mmΦ	9 mm	8 mm

WSN10A (3.0 x 3.0)			SSOP16 (5.0 x 6.4)			SSOP30 (10.2 x 7.6)		
Package dimension unit: mm 			Package dimension unit: mm 			Package dimension unit: mm 		
Land pattern example unit: mm 			Land pattern example unit: mm 			Land pattern example unit: mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
10	20 mg	1,500 p/reel	16	74 mg	2,000 p/reel	30	176 mg	
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	9 mm	8 mm	330 mmΦ	17.4 mm	16 mm			

Surface Mount Type

SSOP30 (20.0 x 14.2)			HSSOP31 (17.5 x 11.93)			WQFN32 (5.0 x 5.0)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
30	1,200 mg	1,000 p/reel	31	700 mg	1,000 p/reel	32	60 mg	
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	33.4 mm	32 mm	330 mmΦ	25.4 mm	24 mm			

Through Hole Type

TO-220-2L (10.05 x 15.3)			TO-220F-2L (10.0 x 15.0)			TO-247-2L (15.94 x 20.95)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
2	1,900 mg	50 p/tube	2	1,830 mg	50 p/tube	2		
Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton	Carton Dimension		Bag Q'ty / Carton
32.8/33.0 x 7.0 x 533/534.5 mm		20 tube	33.0 x 7.0 x 532.5 mm		20 tube			

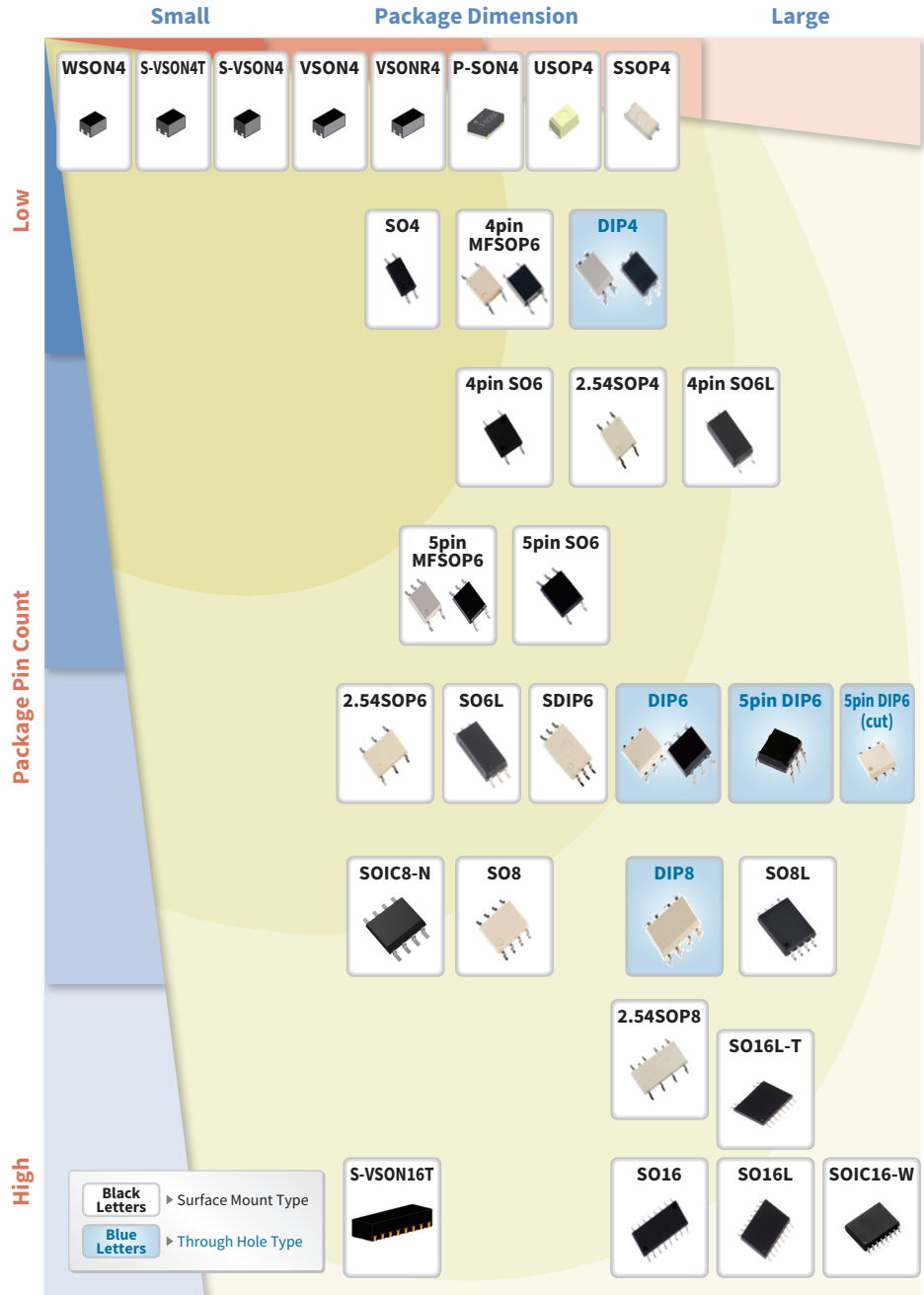
New PW-Mold2 (6.5 x 5.5)			TO-126N (8.0 x 11.0)			TO-220SIS (SC-67) (10.0 x 15.0)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
3	360 mg	200 p/bag	3	840 mg	250 p/bag	3	1,700 mg	50 p/tube
Carton Dimension		Bag Q'ty / Carton	Carton dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton
178 x 80 x 90 mm		15 bag	245 x 175 x 100 mm		8 bag	32.4 x 7.11 x 528.5 mm		30 tube

TO-3P(N) (SC-65) (15.5 x 20.0)			TO-247 (15.94 x 20.95)			TO-3P(L) (20.0 x 26.0)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
3	4,600 mg	25 p/tube	3	6,150 mg	30 p/tube	3	9,750 mg	100 p/tray
Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton	Tray dimension		Tray Q'ty / Carton
45 x 7.6 x 433 mm		40 tube	46 x 7.7 x 533.5 mm		8 tube	184 x 24 x 290 mm		5 tray

HDIP30 (32.8 x 11.4)		
Package dimension		unit : mm
Pin count	Weight	Q'ty
30	2,590 mg	
Tube dimension		Tube Q'ty / Carton

5. Isolators and Solid State Relays

■ Package Lineups



Package		Pin Count	Dimension W x L (mm)	Products							Page
				Isolators			Solid State Relays				
				Photocouplers		Digital Isolators	Photorelays	Photovoltaic Output	Triac Output	Thyristor Output	
				IC Output	Transistor Output						
Surface Mount Type	WSO4	4	1.45 x 2.0				✓				46
	S-VSON4T	4	1.45 x 2.0				✓				46
	S-VSON4	4	1.45 x 2.0				✓				46
	VSON4	4	1.45 x 2.45				✓				46
	VSONR4	4	1.45 x 2.75				✓				46
	P-SO4	4	3.4 x 2.1				✓				46
	USOP4	4	2.2 x 3.25				✓				47
	SSOP4	4	2.04 x 4.2				✓	✓			47
	SO4	4	2.6 x 7.0		✓						47
	4pin MFSOP6	4	3.6 x 7.0					✓	✓		47
	4pin SO6	4	3.7 x 7.0	✓	✓		✓	✓	✓		47
	2.54 SOP4	4	3.9 x 7.0				✓				47
	4pin SO6L	4	3.84 x 10.0	✓	✓						48
	5pin MFSOP6	5	3.6 x 7.0	✓					✓	✓	48
	5pin SO6	5	3.7 x 7.0	✓							48
	2.54 SOP6	6	6.3 x 7.0				✓				48
	SO6L	6	3.84 x 10.0	✓							48
	SDIP6	6	4.58 x 9.7	✓							48
	SOIC8-N	8	4.9 x 6.0			✓					49
	SO8	8	5.1 x 6.0	✓							49
	SO8L	8	5.85 x 10.0	✓							49
	2.54 SOP8	8	9.4 x 7.0				✓				49
	SO16L-T	12	10.3 x 10.0				✓				49
S-VSON16T	16	6.25 x 2.0				✓				49	
SO16	16	10.3 x 7.0		✓						50	
SO16L	16	10.3 x 10.0	✓							50	
SOIC16-W	16	10.3 x 10.0			✓					50	
Through Hole Type	DIP4	4	4.58 x 7.62		✓		✓		✓		51
	DIP4(TLP785)	4	4.6 x 7.62		✓						51
	5pin DIP6	5	7.12 x 7.62						✓		51
	5pin DIP6(cut)	5	7.12 x 7.62				✓	✓	✓		51
	DIP6	6	7.12 x 7.62		✓		✓	✓	✓	✓	51
	DIP8	8	9.66 x 7.62	✓	✓		✓		✓	✓	51

■ Dimensional Outline

Surface Mount Type

WSON4 (1.45 x 2.0)			S-VSON4T (1.45 x 2.0)			S-VSON4 (1.45 x 2.0)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	10 mg		4	10 mg	2,500 p/reel	4	10 mg	2,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
			180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

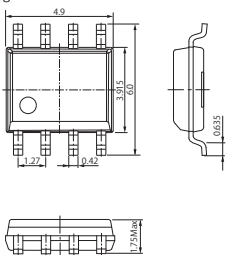
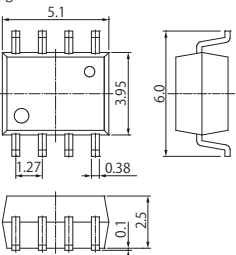
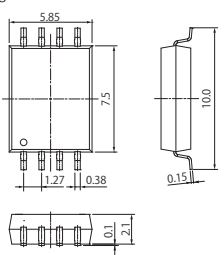
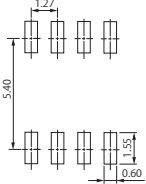
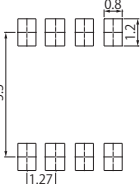
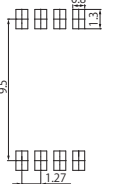
VSON4 (1.45 x 2.45)			VSONR4 (1.45 x 2.75)			P-SON4 (3.4 x 2.1)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	10 mg	3,000 p/reel	4	10 mg	3,000 p/reel	4	20 mg	1,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
			180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

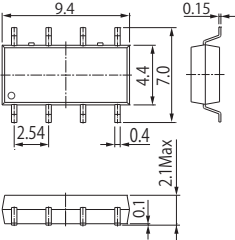
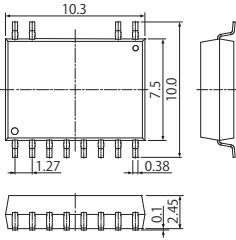
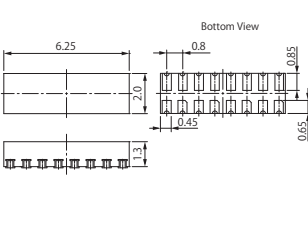
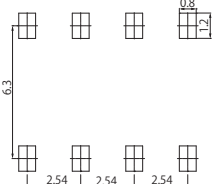
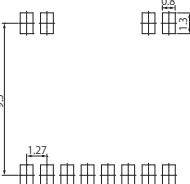
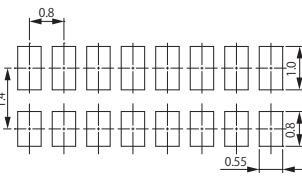
USOP4 (2.2 x 3.25)			SSOP4 (2.04 x 4.2)			SO4 (2.6 x 7.0)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Land pattern example unit : mm			Land pattern example unit : mm			Land pattern example unit : mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	30 mg	1,500 p/reel	4	30 mg	1,500 p/reel	4	50 mg	2,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
180 mmΦ	13 mm	12 mm	180 mmΦ	13 mm	12 mm	330 mmΦ	13.5 mm	12 mm

4pin MFSOP6 (3.6 x 7.0)			4pin SO6 (3.7 x 7.0)			2.54SOP4 (3.9 x 7.0)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Land pattern example unit : mm			Land pattern example unit : mm			Land pattern example unit : mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	90 mg	3,000 p/reel	4	80 mg	3,000 p/reel	4	100 mg	2,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	13.5 mm	12 mm	380 mmΦ	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm

4pin SO6L (3.84 x 10.0)			5pin MFSOP6 (3.6 x 7.0)			5pin SO6 (3.7 x 7.0)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	128 mg	3,000 p/reel	5	90 mg	3,000 p/reel	5	80 mg	3,000 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	17.4 mm	16 mm	380 mmΦ	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm

2.54SOP6 (6.3 x 7.0)			SO6L (3.84 x 10.0)			SDIP6 (4.58 x 9.7)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	130 mg	2,500 p/reel	6	126 mg	1,500 p/reel	6	260 mg	1,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	17.5 mm	16 mm	330 mmΦ	17.4 mm	16 mm	380 mmΦ	17.5 mm	16 mm

SOIC8-N (4.9 x 6.0)			SO8 (5.1 x 6.0)			SO8L (5.85 x 10.0)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8			8	110 mg	2,500 p/reel	8	203 mg	1,500 p/reel
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
			380 mmΦ	13.5 mm	12 mm	330 mmΦ	17.4 mm	16 mm

2.54SOP8 (9.4 x 7.0)			SO16L-T (10.3 x 10.0)			S-VSON16T (6.25 x 2.0)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	200 mg	2,500 p/reel	12	420 mg	1,500 p/reel	16	40 mg	
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
			330 mmΦ	17.5 mm	16 mm			

SO16 (10.3 x 7.0)			SO16L (10.3 x 10.0)			SOIC16-W (10.3 x 10.0)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Land pattern example unit : mm			Land pattern example unit : mm			Package dimension unit : mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
16	190 mg	2,000 p/reel	16	370 mg	1,500 p/reel	16	426 mg	
Reel dimension		Tape width	Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width		Diameter	Width	
330 mmΦ	17.5 mm	16 mm	330 mmΦ	17.4 mm	16 mm			

Through Hole Type

DIP4 (4.58 x 7.62)			DIP4(TLP785) (4.6 x 7.62)			5pin DIP6 (7.12 x 7.62)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
4	260 mg	100 p/tube	4	250 mg	100 p/tube	5	400 mg	50 p/tube
Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton
11.3 x 10.3 x 525 mm		4 tube	11.3 x 10.3 x 525 mm		4 tube	11.3 x 10.3 x 525 mm		20 tube

5pin DIP6(cut) (7.12 x 7.62)			DIP6 (7.12 x 7.62)			DIP8 (9.66 x 7.62)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
5	390 mg	50 p/tube	6	400 mg	50 p/tube	8	540 mg	50 p/tube
Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton
11.3 x 10.3 x 525 mm		20 tube	11.3 x 10.3 x 525 mm		20 tube	11.3 x 10.3 x 525 mm		60 tube

Lead Form Options

DIP4(LF1) / (TP1) (4.58 x 10.0)	DIP4(LF5) / (TP5) (4.58 x 10.0)	DIP4(LF2) (4.58 x 10.16)
<p>Package dimension unit: mm</p>	<p>Package dimension unit: mm</p>	<p>Package dimension (DIP4 F type) unit: mm</p>
<p>Land pattern example unit: mm</p>	<p>Land pattern example unit: mm</p>	

DIP4(LF4) / (TP4) (4.58 x 12.0)	DIP4(TLP785)(LF6) / (TP6) (4.6 x 10.0)	DIP4(TLP785F)(LF7) / (TP7) (4.6 x 11.66)
<p>Package dimension unit: mm</p>	<p>Package dimension unit: mm</p>	<p>Package dimension unit: mm</p>
<p>Land pattern example unit: mm</p>	<p>Land pattern example unit: mm</p>	<p>Land pattern example unit: mm</p>

DIP6(LF1) / (TP1) (7.12 x 10.0)		DIP6(LF5) / (TP5) (7.12 x 10.0)		DIP6(LF2) (7.12 x 10.16) (DIP6 F type)	
Package dimension	unit : mm	Package dimension	unit : mm	Package dimension	unit : mm

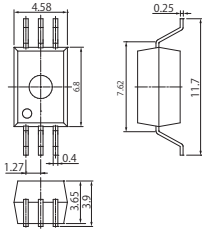
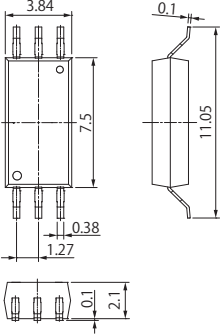

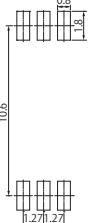
Land pattern example	unit : mm	Land pattern example	unit : mm		

DIP6(LF4) / (TP4) (7.12 x 12.0)		5pin DIP6(LF1) / (TP1) (7.12 x 10.0)		5pin DIP6(LF5) / (TP5) (7.12 x 10.0)	
Package dimension	unit : mm	Package dimension	unit : mm	Package dimension	unit : mm

Land pattern example	unit : mm	Land pattern example	unit : mm	Land pattern example	unit : mm

5pin DIP6(LF2) (7.12 x 10.16)	5pin DIP6(LF4) / (TP4) (7.12 x 12.0)	5pin DIP6(cut)(LF1) / (TP1) (7.12 x 10.0)
<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>
<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>

5pin DIP6(cut)(LF5) / (TP5) (7.12 x 10.0)	5pin DIP6(cut)(LF2) (7.12 x 10.16)	5pin DIP6(cut)(LF4) / (TP4) (7.12 x 12.0)
<p>Package dimension unit : mm</p>	<p>Package dimension (5pin DIP6(cut) F type) unit : mm</p>	<p>Package dimension unit : mm</p>
<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>

SDIP6 (4.58 x 11.7)	SO6L(LF4) (3.84 x 11.05)
<p>Package dimension (SDIP6 F type) unit : mm</p> 	<p>Package dimension unit : mm</p> 
<p>Land pattern example unit : mm</p> 	<p>Land pattern example unit : mm</p> 

DIP8(LF1) / (TP1) (9.66 x 10.0)		DIP8(LF5) / (TP5) (9.66 x 10.0)		DIP8(LF2) (9.66 x 10.16) Package dimension (DIP8 F type)	
Package dimension	unit : mm	Package dimension	unit : mm	Package dimension	unit : mm

Land pattern example	unit : mm	Land pattern example	unit : mm

DIP8(LF4) / (TP4) (9.66 x 12.0)		SO8L(LF4) (5.85 x 11.05)	
Package dimension	unit : mm	Package dimension	unit : mm
Land pattern example	unit : mm	Land pattern example	unit : mm

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