

TOSHIBA

Discrete Device Package Lineups

Selection
Guide 2019



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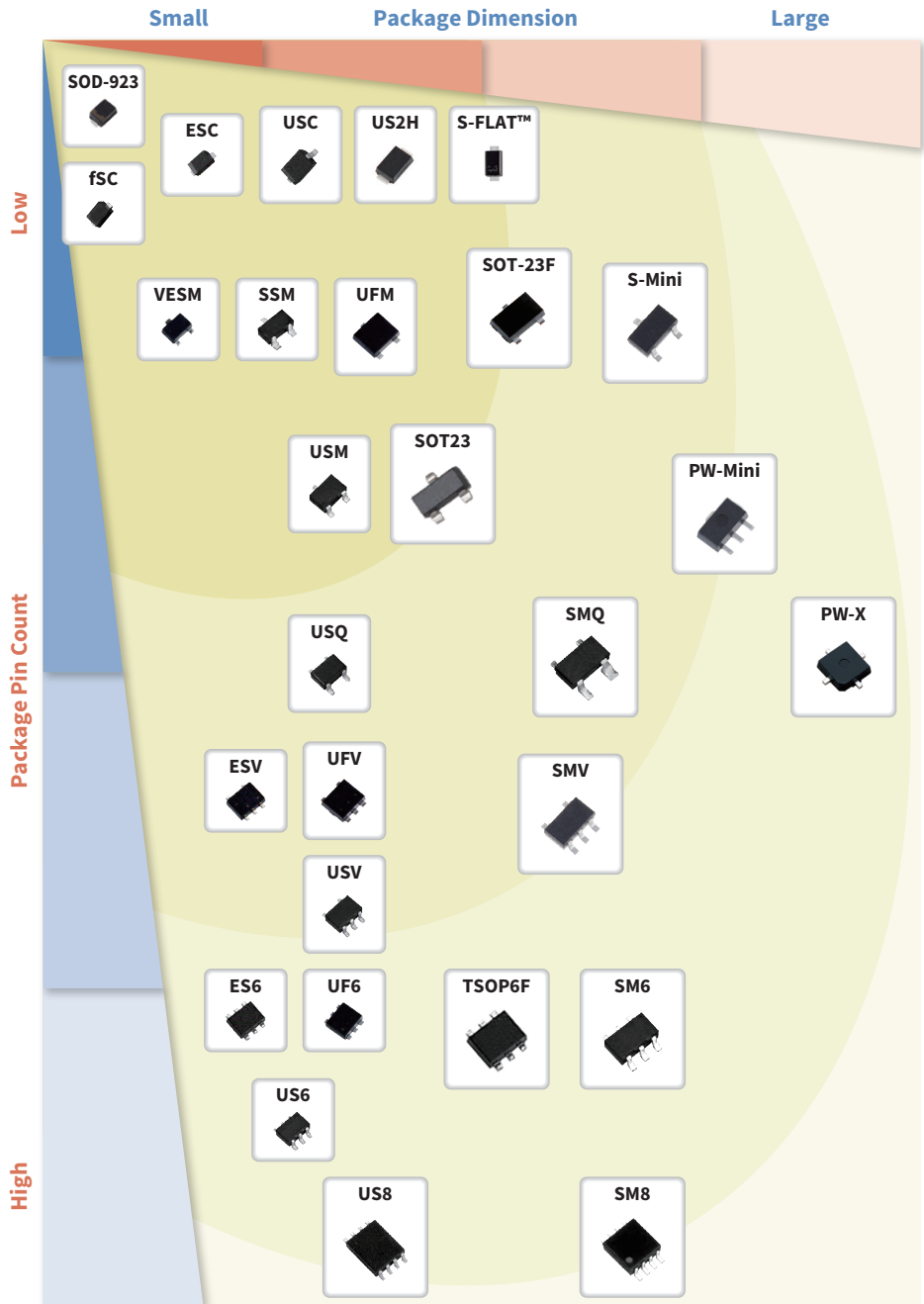
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1. Small Signal Devices

Package Lineups

Surface Mount Type (Lead Type)

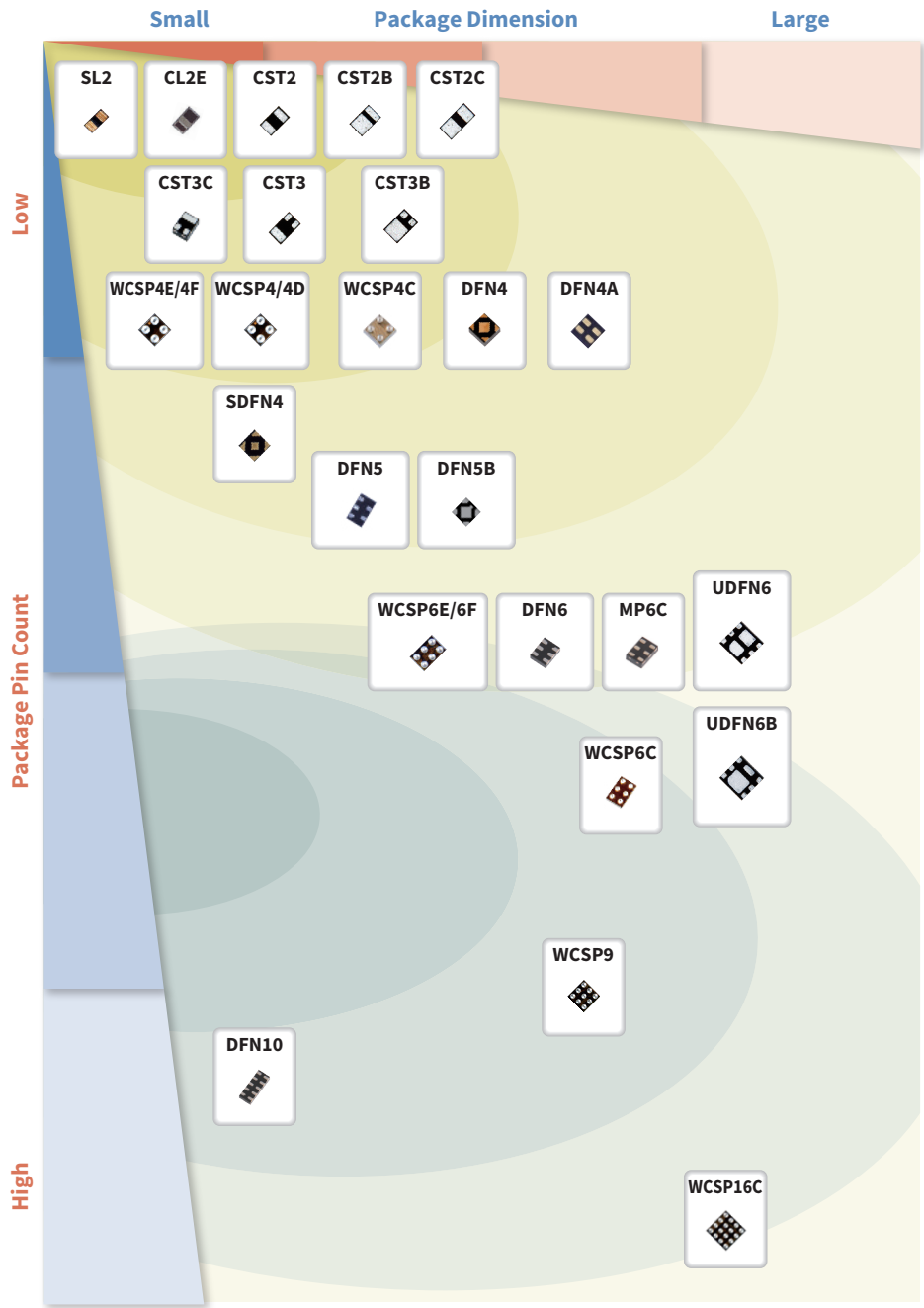


Surface Mount Type (Lead Type)

Package	Pin Count	Dimension W x L (mm)	Products						Page
			MOSFETs	Diodes	LDO Regulators	Linear ICs	Transistors	RF Devices (Radio-Frequency Devices)	
fSC (SOD-923)	2	1.0 x 0.6						✓	8
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
S-FLAT	2	1.6 x 3.5						✓	8
VESM (SOT-723)	3	1.2 x 1.2	✓	✓			✓	✓	9
SSM (SOT-416)	3	1.6 x 1.6	✓	✓			✓	✓	9
UFM (SOT-323F)	3	2.0 x 2.1	✓				✓	✓	9
USM (SOT-323)	3	2.0 x 2.1	✓	✓			✓	✓	9
SOT23	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	✓	✓			✓	✓	10
PW-Mini	3	4.6 x 4.2						✓	10
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	✓	✓	✓	✓			11
USV (SOT-353)	5	2.0 x 2.1	✓	✓		✓	✓		11
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		✓			✓		12
TSOP6F (SOT-26F)	6	2.9 x 2.8	✓						12
US8 (SOT-765)	8	2.0 x 3.1				✓			12
SM8 (SOT-505)	8	2.9 x 4.0				✓			12

Note
Linear ICs : Load Switch ICs , Power Multiplexer ICs , Operational Amplifier ICs , Comparator ICs , Magnetic Sensors

Surface Mount Type (Leadless Type)



Surface Mount Type (Leadless Type)

Package	Pin Count	Dimension W x L (mm)	Products						Page
			MOSFETs	Diodes	LDO Regulators	Linear ICs	Transistors	RF Devices (Radio-Frequency Devices)	
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
WCSP4	4	0.79 x 0.79			✓				14
WCSP4D	4	0.79 x 0.79				✓			14
SDFN4	4	0.8 x 0.8			✓				15
WCSP4C	4	0.9 x 0.9				✓			15
DFN4	4	1.0 x 1.0			✓				15
DFN4A	4	1.2 x 1.2				✓			15
DFN5B	5	1.2 x 1.2			✓				15
DFN5	5	1.3 x 0.8		✓					15
WCSP6E	6	1.2 x 0.8				✓			16
WCSP6F	6	1.2 x 0.8			✓				16
DFN6	6	1.25 x 1.0		✓					16
MP6C	6	1.45 x 1.0				✓			16
WCSP6C	6	1.5 x 1.0	✓			✓			16
UDFN6 (SOT-1118)	6	2.0 x 2.0	✓						16
UDFN6B (SOT-1220)	6	2.0 x 2.0	✓						17
WCSP9	9	1.5 x 1.5				✓			17
DFN10	10	2.5 x 1.0		✓					17
WCSP16C	16	1.9 x 1.9				✓			17

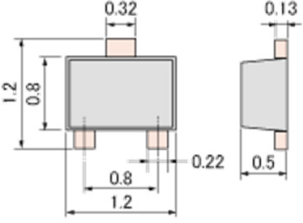
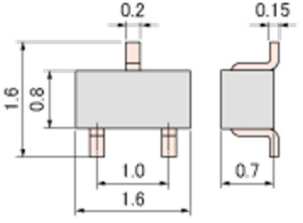
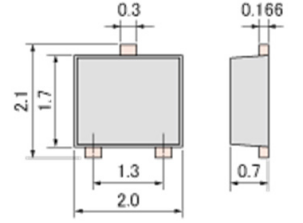
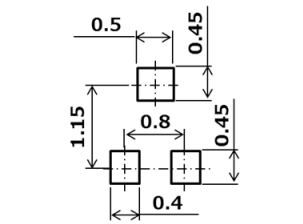
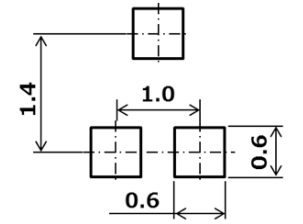
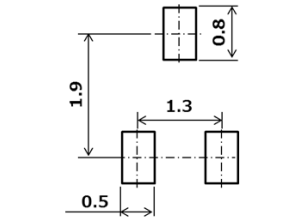
Note
 Linear ICs : Load Switch ICs , Power Multiplexer ICs , Operational Amplifier ICs , Comparator ICs , Magnetic Sensors

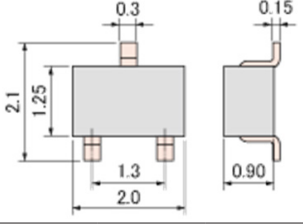
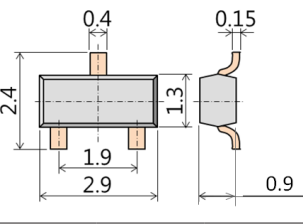
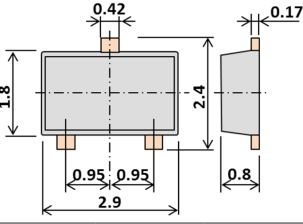
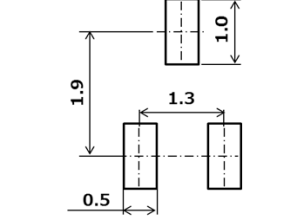
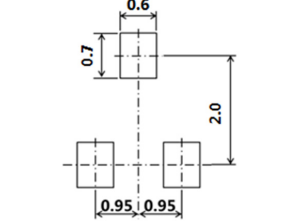
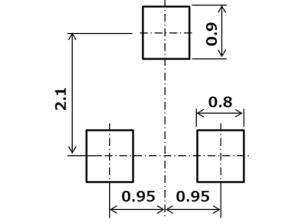
■ Dimensional Outline

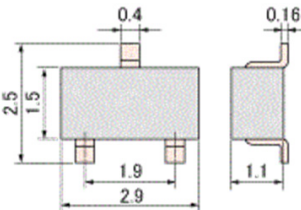
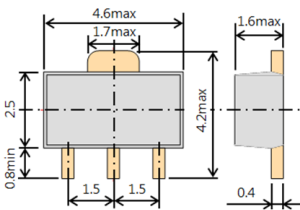
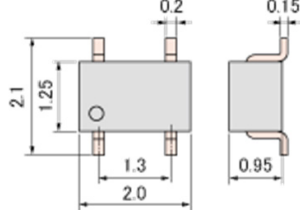
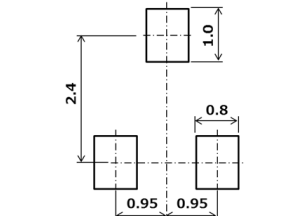
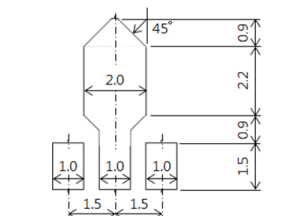
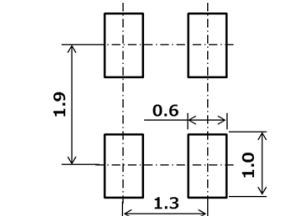
Surface Mount Type (Lead Type)

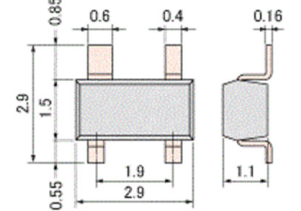
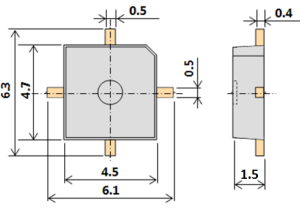
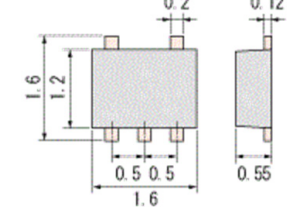
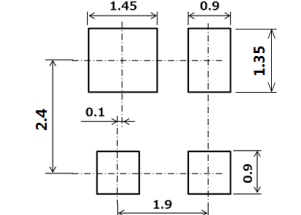
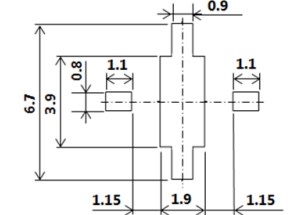
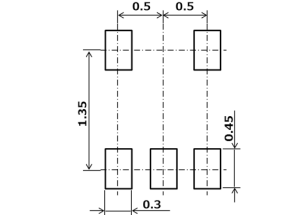
fSC (SOD-923) (1.0x0.6)			SOD-923 (1.0x0.6)			ESC (SOD-523) (1.6x0.8)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
2	0.6 mg	10,000 p/reel	2	0.55 mg	10,000 p/reel	2	1.4 mg	8,000 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

USC (SOD-323) (2.5x1.25)			US2H (SOD-323HE) (2.5x1.4)			S-FLAT™ (1.6x3.5)		
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
2	4.5 mg	3,000 p/reel	2	5.4 mg	3,000 p/reel	2	13 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

VESM (SOT-723) (1.2x1.2)			SSM (SOT-416) (1.6x1.6)			UFM (SOT-323F) (2.0x2.1)		
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
3	1.5 mg	8,000 p/reel	3	2.4 mg	3,000 p/reel	3	6.6 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

USM (SOT-323) (2.0x2.1)			SOT23 (SOT-23) (2.9x2.4)			SOT-23F (2.9x2.4)		
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 mg	3,000 p/reel	3	9 mg	3,000 p/reel	3	11 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

S-Mini (SOT-346) (2.9x2.5)			PW-Mini (4.6x4.2)			USQ (SOT-343) (2.0x2.1)		
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
3	12 mg	3,000 p/reel	3	50 mg	1,000 p/reel	4	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	13 mm	12 mm	180 mmΦ	9 mm	8 mm

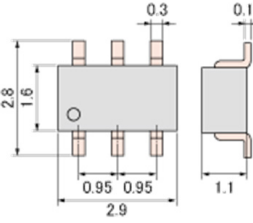
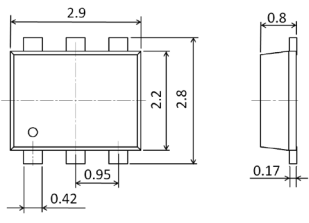
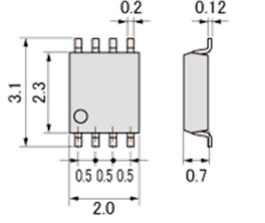
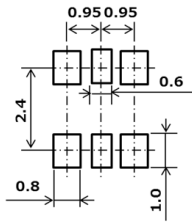
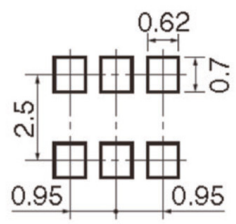
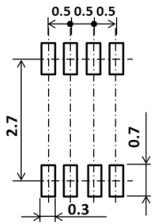
SMQ (SOT-24) (2.9x2.9)			PW-X (6.1x6.3)			ESV (SOT-553) (1.6x1.6)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
								
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	13 mg	3,000 p/reel	4	80 mg	1,000 p/reel	5	3 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	13 mm	12 mm	180 mmΦ	9 mm	8 mm

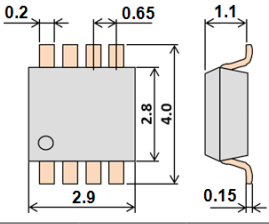
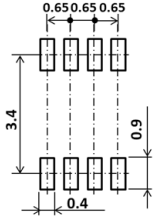
* TPL3 8,000p/reel, TE85L 4,000p/reel

UFV (SOT-353F) (2.0x2.1)			USV (SOT-353) (2.0x2.1)			SMV (SOT-25) (2.9x2.8)		
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
5	7 mg	3,000 p/reel	5	6 mg	3,000 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	9 mm	8 mm	180 mmΦ	9 mm	8 mm	180 mmΦ	9 mm	8 mm

ES6 (SOT-563) (1.6x1.6)			UF6 (SOT-363F) (2.0x2.1)			US6 (SOT-363) (2.0x2.1)		
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
6	3 mg	- *	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

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

SM6 (SOT-26) (2.9x2.8)			TSOP6F (SOT-26F) (2.9x2.8)			US8 (SOT-765) (2.0x3.1)		
Package dimension 			Package dimension 			Package dimension 		
Land pattern example 			Land pattern example 			Land pattern example 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	15 mg	3,000 p/reel	6	16 mg	3,000 p/reel	8	8.8 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

SM8 (SOT-505) (2.9x4.0)		
Package dimension 		
Land pattern example 		
Pin count	Weight	MOQ
8	21 mg	3,000 p/reel
Reel dimension		Tape width
Diameter	Width	
180 mmΦ	13 mm	12 mm

Surface Mount Type (Leadless Type)

SL2 (SOD-962) (0.62x0.32)			CL2E (1.0x0.6)			CST2 (SOD-882) (1.0x0.6)		
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

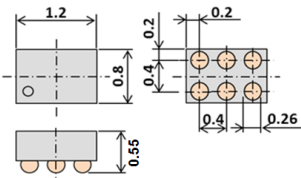
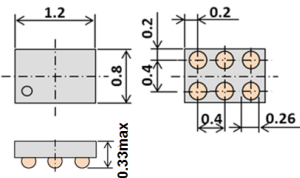
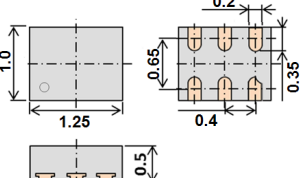
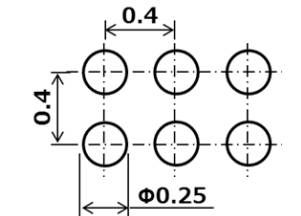
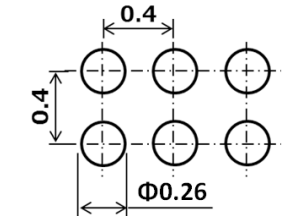
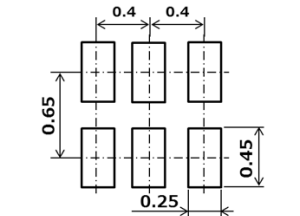
CST2B (1.2x0.8)			CST2C (SOD-963) (1.6x0.8)			CST3C (0.8x0.6)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
Land pattern example unit : mm			Land pattern example unit : mm			Land pattern example unit : mm		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	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

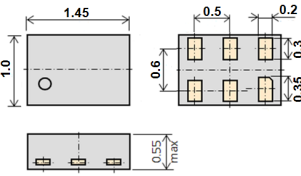
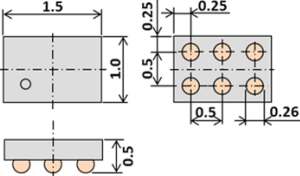
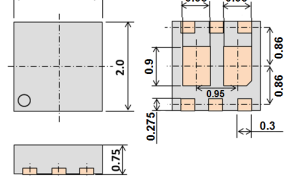
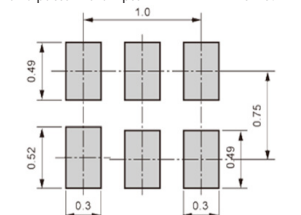
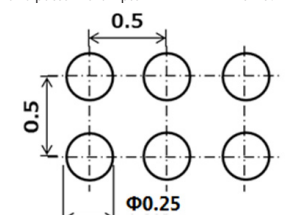
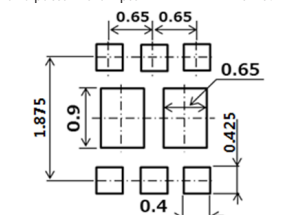
CST3 (SOT-883) (1.0x0.6)			CST3B (1.2x0.8)			WCSP4E (0.645x0.645)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	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 (0.645x0.645)			WCSP4 (0.79x0.79)			WCSP4D (0.79x0.79)		
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	0.7 mg	3,000 p/reel	4	0.79 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

SDFN4 (0.8x0.8)			WCSP4C (0.9x0.9)			DFN4 (1.0x1.0)		
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	0.6 mg	10,000 p/reel	4	0.9 mg	3,000 p/reel	4	1.3 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 (1.2x1.2)			DFN5B (1.2x1.2)			DFN5 (1.3x0.8)		
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 (1.2x0.8)			WCSP6F (1.2x0.8)			DFN6 (1.25x1.0)		
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	1 mg	5,000 p/reel	6	0.61 mg	5,000 p/reel	6	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

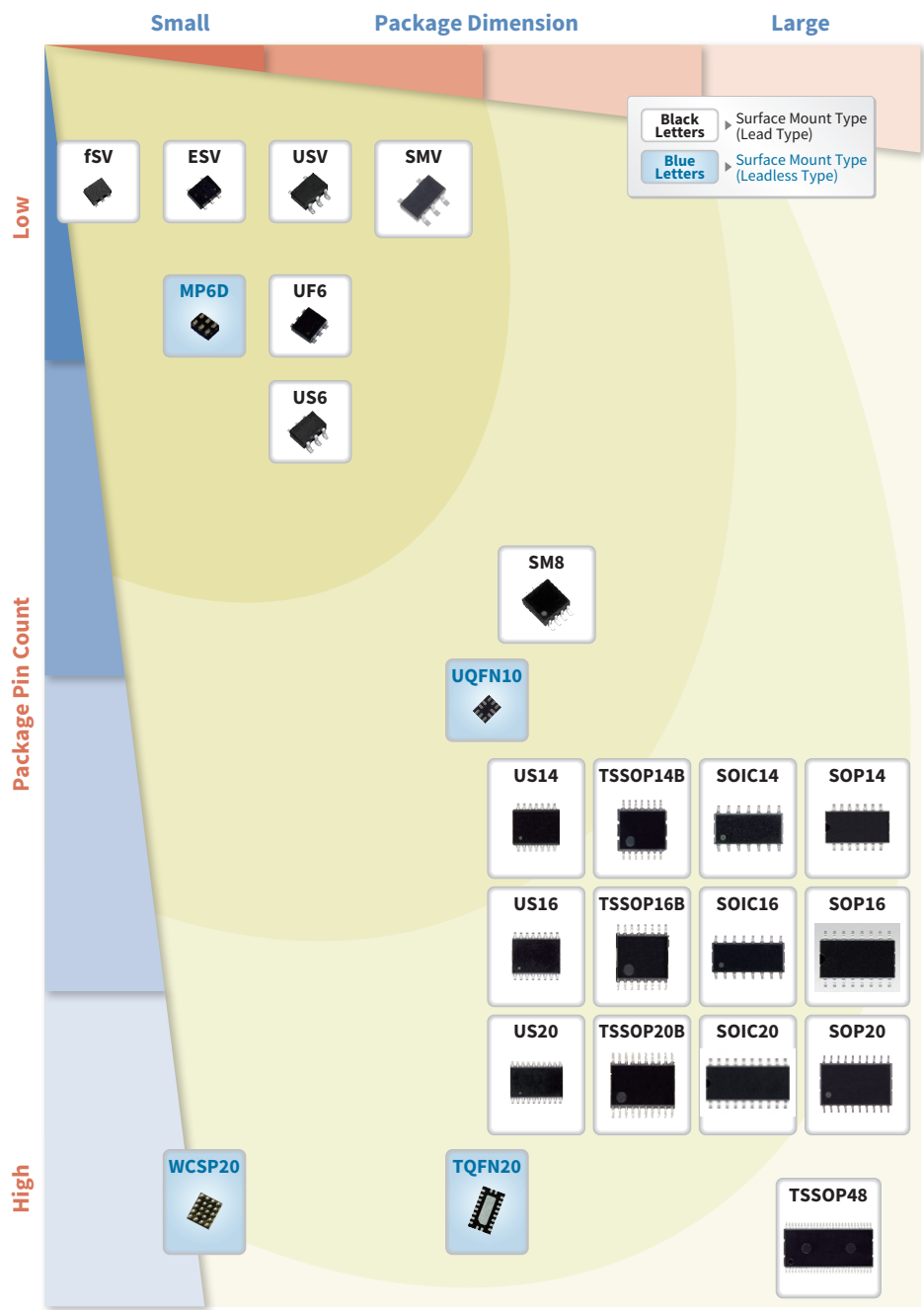
MP6C (1.45x1.0)			WCSP6C (1.5x1.0)			UDFN6 (SOT-1118) (2.0x2.0)		
Package dimension unit: mm			Package dimension unit: mm			Package dimension unit: mm		
								
Land pattern example unit: mm			Land pattern example unit: mm			Land pattern example unit: mm		
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	2.4 mg	5,000 p/reel	6	1.4 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	180 mmΦ	9 mm	8 mm

UDFN6B (SOT-1220) (2.0x2.0)			WCSP9 (1.5x1.5)			DFN10 (2.5x1.0)		
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	8.5 mg	3,000 p/reel	9	3.5 mg	5,000 p/reel	10	3.2 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

WCSP16C (1.9x1.9)		
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	CMOS Logic ICs	Bus Switches	Dual-Supply Bidirectional Level Shifters	
Surface Mount Type (Lead Type)	fSV (SOT-953)	5	1.0 x 1.0	✓				20
	ESV (SOT-553)	5	1.6 x 1.6	✓				20
	USV (SOT-353)	5	2.0 x 2.1	✓		✓		20
	SMV (SOT-25)	5	2.9 x 2.8	✓				20
	UF6 (SOT-363F)	6	2.0 x 2.1			✓	✓	20
	US6 (SOT-363)	6	2.0 x 2.1	✓		✓		20
	US8 (SOT-765)	8	2.0 x 3.1	✓		✓		21
	SM8 (SOT-505)	8	2.9 x 4.0	✓				21
	US14	14	4.0 x 4.0		✓	✓		21
	TSSOP14B	14	5.0 x 6.4		✓			21
	SOIC14	14	8.65 x 6.0		✓			21
	SOP14	14	10.3 x 7.8		✓			21
	US16	16	4.0 x 4.0		✓	✓		22
	TSSOP16B	16	5.0 x 6.4		✓			22
	SOIC16	16	9.9 x 6.0		✓			22
	SOP16	16	10.3 x 7.8		✓			22
	US20	20	5.0 x 4.0		✓	✓		22
	TSSOP20B	20	6.5 x 6.4		✓			22
	SOP20	20	12.8 x 7.8		✓			23
	SOIC20	20	12.8 x 10.3		✓			23
	TSSOP48	48	12.5 x 8.1		✓			23
Surface Mount Type (Leadless Type)	MP6D	6	1.45 x 1.0			✓		24
	UQFN10	10	1.8 X 1.4			✓		24
	TQFN20	20	4.5 x 2.5			✓		24
	WCSP20	20	1.6 x 2.0			✓		24

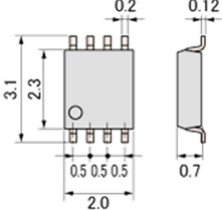
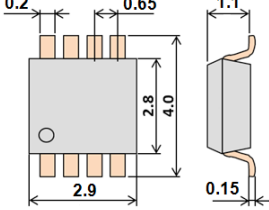
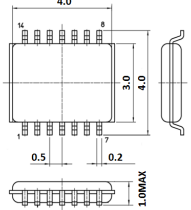
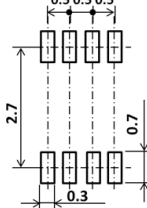
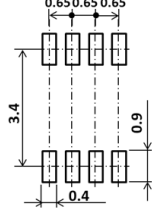
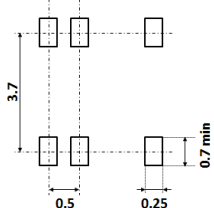
■ Dimensional Outline

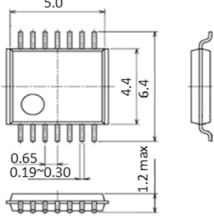
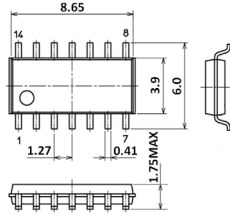
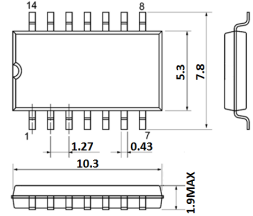
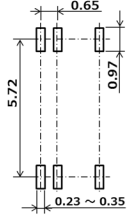
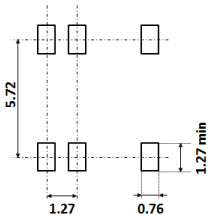
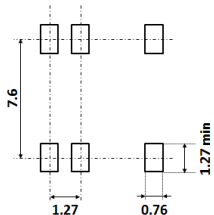
Surface Mount Type (Lead Type)

fSV (SOT-953) (1.0x1.0)			ESV (SOT-553) (1.6x1.6)			USV (SOT-353) (2.0x2.1)		
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) (2.9x2.8)			UF6 (SOT-363F) (2.0x2.1)			US6 (SOT-363) (2.0x2.1)		
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) (2.0x3.1)			SM8 (SOT-505) (2.9x4.0)			US14 (4.0x4.0)		
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

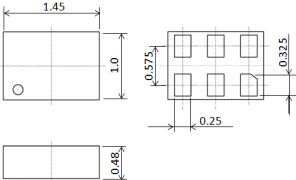
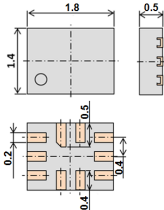
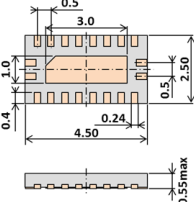
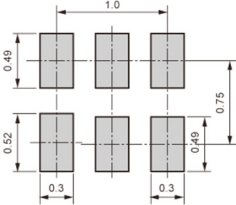
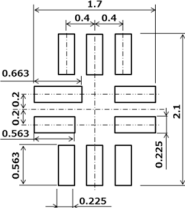
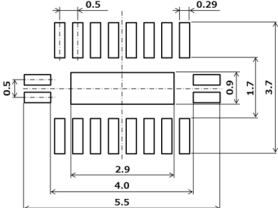
TSSOP14B (5.0x6.4)			SOIC14 (8.65x6.0)			SOP14 (10.3x7.8)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
14	54 mg	2,500 p/reel	14	130 mg	2,500 p/reel	14	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	12.4 mm	12 mm	330 mmΦ	17.4 mm	16 mm	330 mmΦ	17.5 mm	16 mm

US16 (4.0x4.0)			TSSOP16B (5.0x6.4)			SOIC16 (9.9x6.0)		
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
16	20 mg	2,500 p/reel	16	55 mg	2,500 p/reel	16	150 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	12 mm	12 mm	330 mmΦ	12.4 mm	12 mm	330 mmΦ	17.4 mm	16 mm

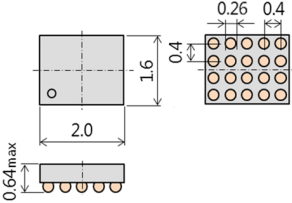
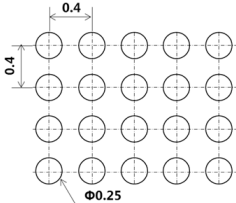
SOP16 (10.3x7.8)			US20 (5.0x4.0)			TSSOP20B (6.5x6.4)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
16	180 mg	2,000 p/reel	20	30 mg	2,500 p/reel	20	71 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

SOIC20 (12.8x10.3)			SOP20 (12.8x7.8)			TSSOP48 (12.5x8.1)		
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	510 mg	2,000 p/reel	20	220 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	25.4 mm	24 mm	330 mmΦ	25.5 mm	24 mm	330 mmΦ	25.5 mm	24 mm

Surface Mount Type (Leadless Type)

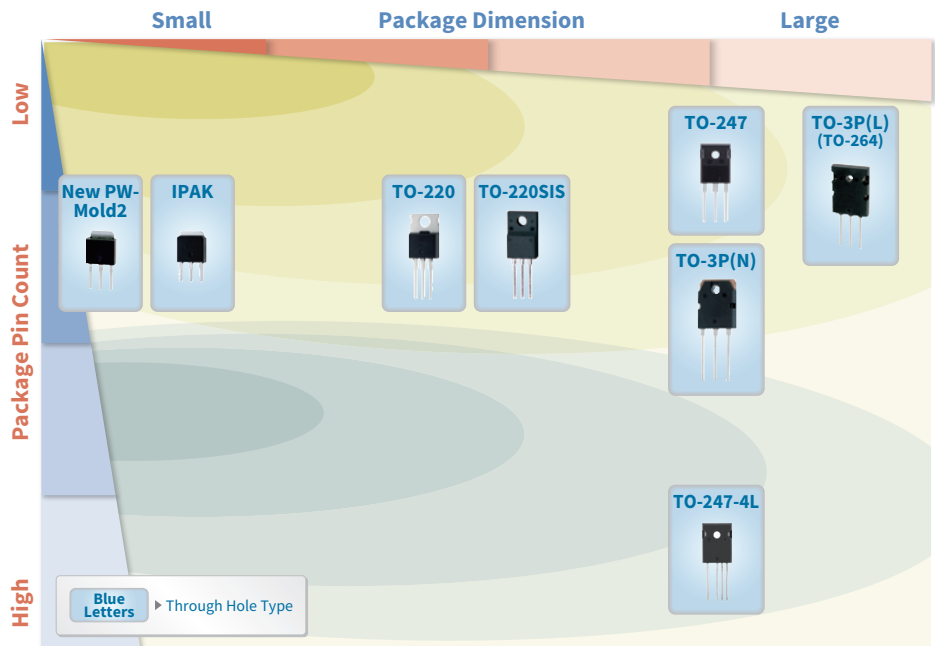
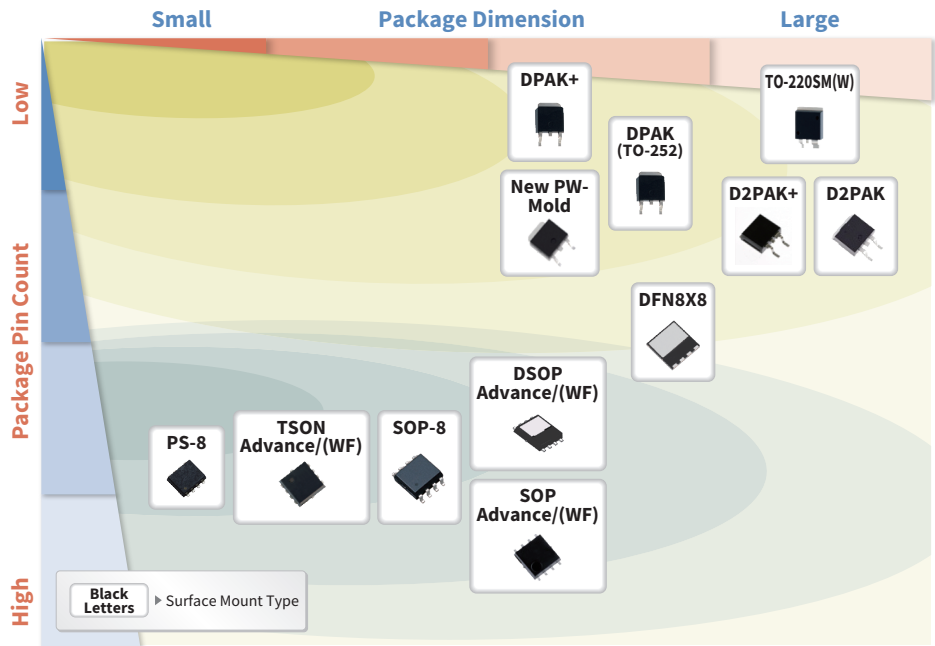
MP6D (1.45x1.0)			UQFN10 (1.8x1.4)			TQFN20 (4.5x2.5)		
Package dimension unit : mm			Package dimension unit : mm			Package dimension unit : mm		
								
Land pattern example unit : mm			Land pattern example unit : mm			Land pattern example unit : mm		
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
6	2.4 mg	10,000 p/reel	10	3.5 mg	3,000 p/reel	20	17 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	179 mmΦ	8.4 mm	8 mm	179 mmΦ	13 mm	12 mm

* 3,000 or 5,000pcs/reel

WCSP20 (1.6x2.0)		
Package dimension unit : mm		
		
Land pattern example unit : mm		
		
Pin count	Weight	MOQ
20	5 mg	3,000 p/reel
Reel dimension		Tape width
Diameter	Width	
180 mmΦ	9 mm	8 mm

3. Power MOSFETs

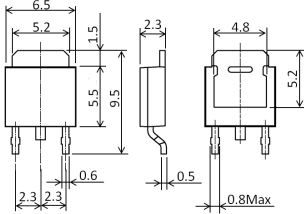
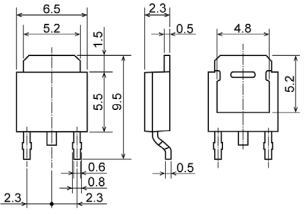
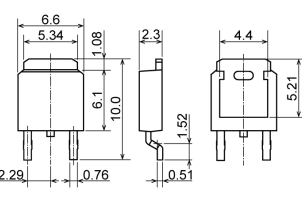
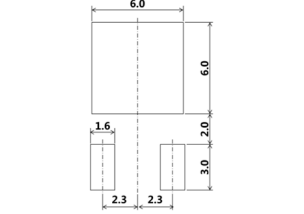
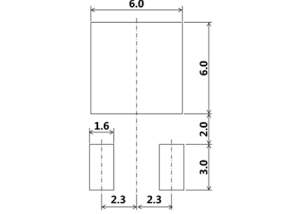
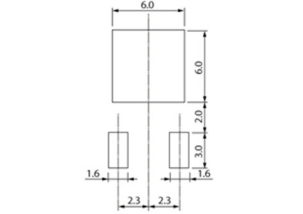
■ Package Lineups

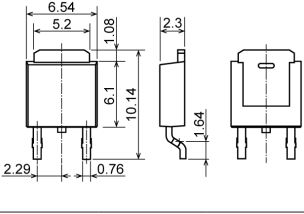
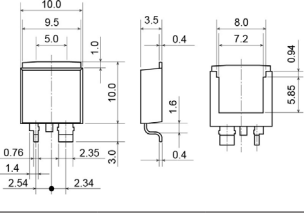
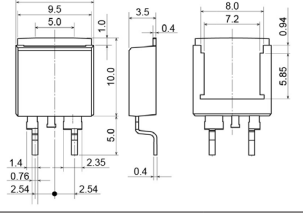
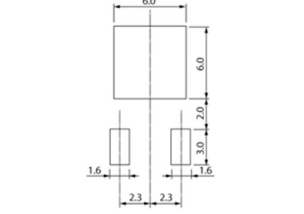
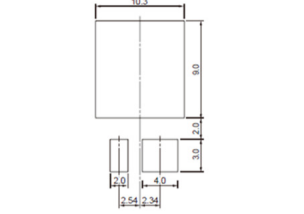
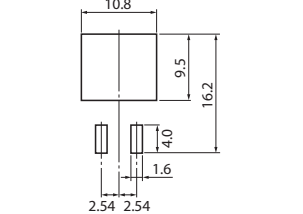


Package		Pin Count	Dimension W x L (mm)	Page
Surface Mount Type	DPAK+	3	6.5 x 9.5	28
	New PW-Mold	3	6.5 x 9.5	28
	DPAK	3	6.6 x 10.0	28
	TO-220SM(W)	3	10.0 x 13.0	28
	D2PAK+	3	10.0 x 15.0	28
	D2PAK	3	10.35 x 15.3	29
	DFN8x8	5	8.0 x 8.0	29
	PS-8	8	2.9 x 2.8	29
	TSOP Advance	8	3.1 x 3.3	29
	SOP-8	8	4.9 x 6.0	29
	DSOP Advance	8	5.0 x 6.0	30
	SOP Advance	8	5.0 x 6.0	30
	Wettable Flank Lead	TSOP Advance (WF)	3.1 x 3.6	31
		DSOP Advance (WF)L	5.0 x 6.0	31
		DSOP Advance (WF)M	5.0 x 6.0	31
		SOP Advance (WF)	5.0 x 6.0	31
Through Hole Type	New PW-Mold2	3	6.5 x 5.5	32
	IPAK	3	6.65 x 6.1	32
	TO-220	3	10.16 x 8.59	32
	TO-220SIS	3	10.0 x 15.0	32
	TO-3P(N)	3	15.5 x 20.0	32
	TO-247	3	15.94 x 20.95	32
	TO-3P(L)	3	20.0 x 26.0	33
	TO-247-4L	4	15.94 x 20.95	33

■ Dimensional Outline

Surface Mount Type

DPAK+ (6.5x9.5)			New PW-Mold (6.5x9.5)			DPAK 2-7K1S (TO-252) (6.6x10.0)		
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

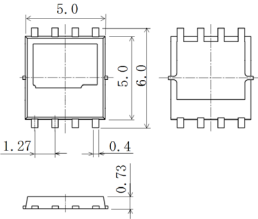
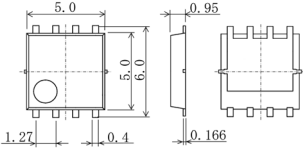
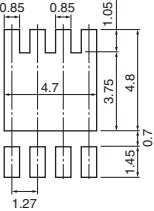
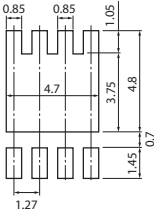
DPAK 2-7N1S (TO-252)			TO-220SM(W) (10.0x13.0)			D2PAK+ (10.0x15.0)		
Package dimension unit: mm			Package dimension unit: mm			Package dimension unit: mm		
								
Land pattern example unit: mm			Land pattern example unit: mm			Land pattern example unit: mm		
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
3	389 mg	2,500 p/reel	3	1070 mg	1,000 p/reel	3	992 mg 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	25.5 mm	24 mm

D2PAK (10.35x15.3)			DFN8X8 (8.0x8.0)			PS-8 (2.9x2.8)		
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	1590 mg	1,000 p/reel	5	175 mg	2,500 p/reel	8	17 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	25.5 mm	24 mm	332 mmΦ	17.2 mm	16.2 mm	180 mmΦ	9 mm	8 mm

TSOP Advance (3.1x3.3)			SOP-8 2-5R1S (4.9x6.0)			SOP-8 2-6J1S		
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	- *	8	85 mg	2,500 p/reel	8	85 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	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm

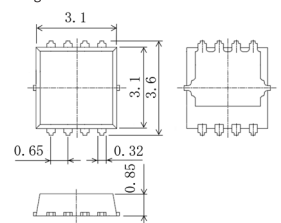
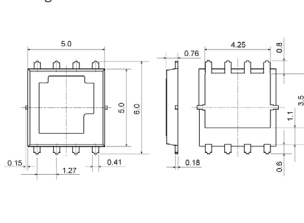
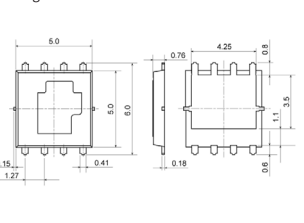
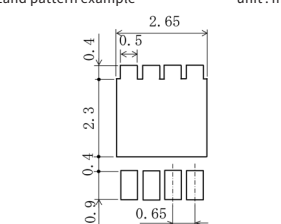
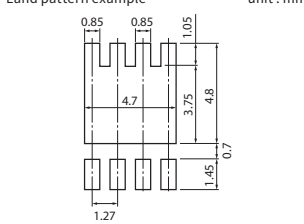
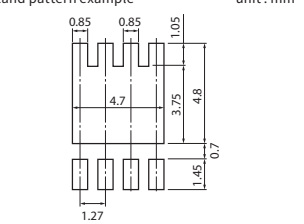
* 3,000 or 5,000pcs/reel

Surface Mount Type

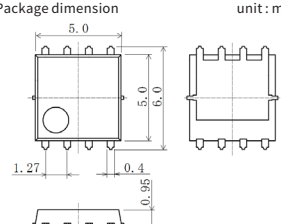
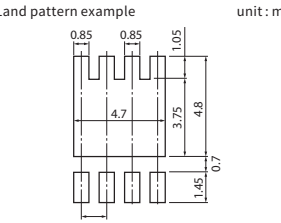
DSOP Advance (5.0x6.0)			SOP Advance (5.0x6.0)		
Package dimension		unit : mm	Package dimension		unit : mm
					
Land pattern example		unit : mm	Land pattern example		unit : mm
					
Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	98 mg	5,000 p/reel	8	69 mg	- *
Reel dimension		Tape width	Reel dimension		Tape width
Diameter	Width		Diameter	Width	
330 mmΦ	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm

* 3,000 or 5,000pcs/reel

Surface Mount Type (Wettable Flank Lead Terminal)

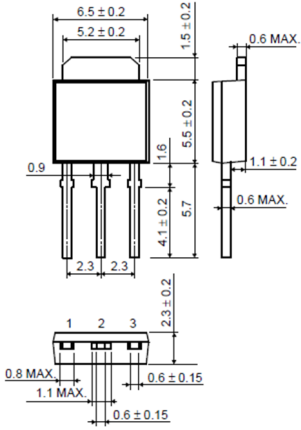
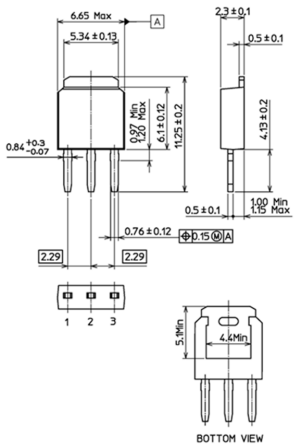
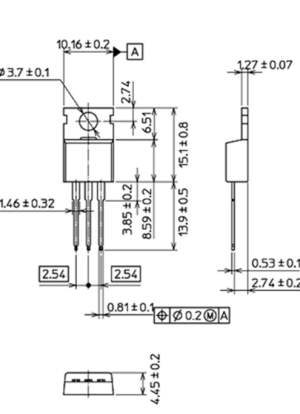
TSON Advance (WF) (3.1x3.6)			DSOP Advance (WF)L (5.0x6.0)			DSOP Advance (WF)M (5.0x6.0)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
								
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	20 mg	- *	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	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm	330 mmΦ	13.5 mm	12 mm

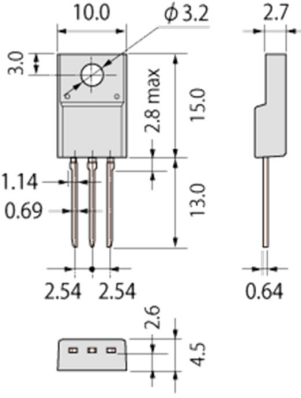
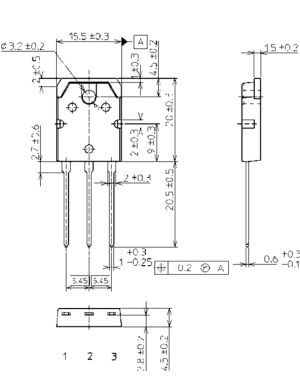
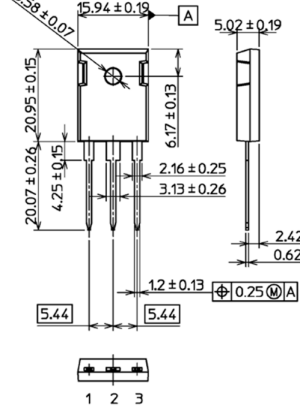
* 3,000 or 5,000pcs/reel

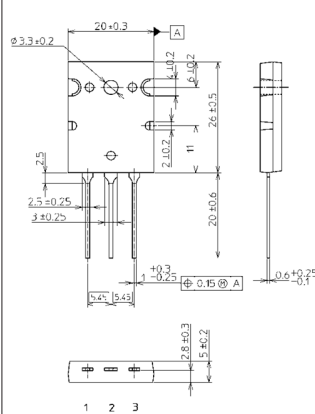
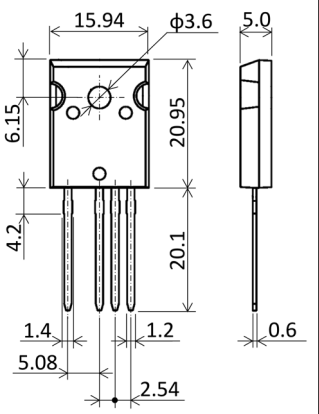
SOP Advance (WF) (5.0x6.0)		
Package dimension		unit : mm
		
Land pattern example		unit : mm
		
Pin count	Weight	MOQ
8	69 mg	- *
Reel dimension		Tape width
Diameter	Width	
330 mmΦ	13.5 mm	12 mm

* 3,000 or 5,000pcs/reel

Through Hole Type

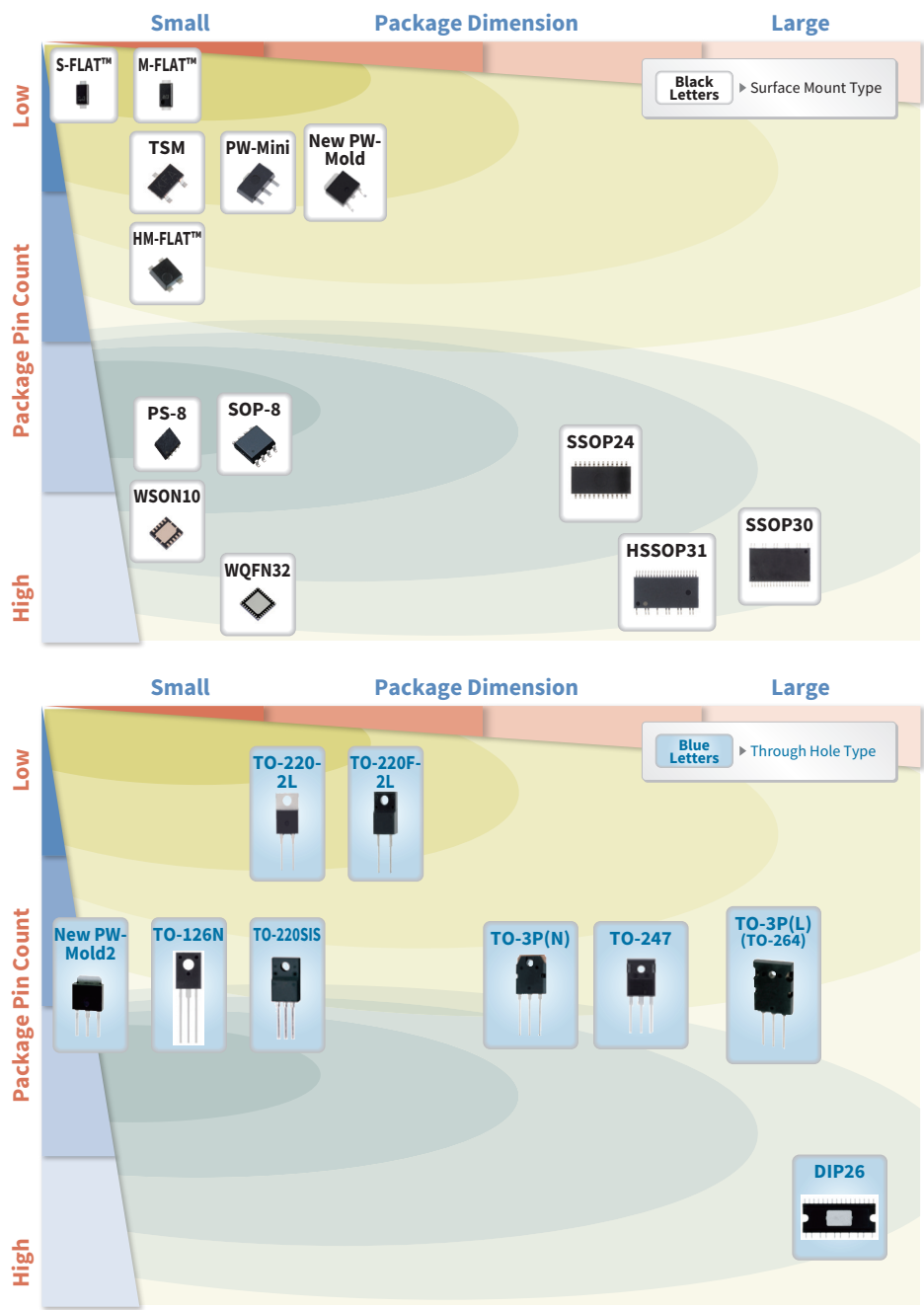
New PW-Mold2 (6.5x5.5)			IPAK (6.65x6.1)			TO-220 (10.16x15.1)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
								
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
3	360 mg	200 p/bag	3	337 mg	75 p/tube	3	1930 mg	50 p/tube
Carton dimension		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) (10.0x15.0)			TO-3P(N) (SC-65) (15.5x20.0)			TO-247 (15.94x20.95)		
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) (20.0x26.0)			TO-247-4L (15.94x20.95)		
Package dimension		unit : mm	Package dimension		unit : mm
 Technical drawing of TO-3P(L) package. Top view shows a rectangular body with dimensions 20.0 ± 0.3 mm by 26.0 ± 0.5 mm. It features three mounting holes with diameter 3.3 ± 0.2 mm. Pin 1 is 2.5 ± 0.25 mm long, pin 2 is 3.0 ± 0.25 mm long, and pin 3 is 5.43 mm long. A detail view shows a pin with diameter 0.15 mm and length 0.6 ± 0.25 mm. Pin numbers 1, 2, and 3 are indicated at the bottom.			 Technical drawing of TO-247-4L package. Top view shows a rectangular body with dimensions 15.94 mm by 20.95 mm. It features four mounting holes with diameter 3.6 mm. Pin 1 is 4.2 mm long, pin 2 is 1.4 mm long, pin 3 is 5.08 mm long, and pin 4 is 1.2 mm long. A detail view shows a pin with diameter 0.6 mm and length 0.6 mm. Pin numbers 1, 2, 3, and 4 are indicated at the bottom.		
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
3	9750 mg	100 p/tray	4	6360 mg	30 p/tube
Tray dimension		Tray 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

4. Power Discrete Devices

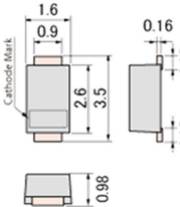
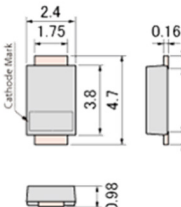
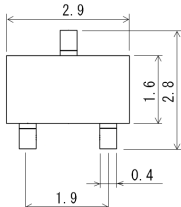
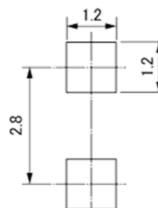
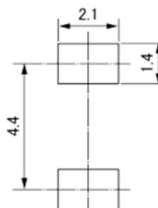
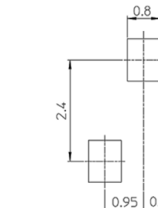
■ Package Lineups

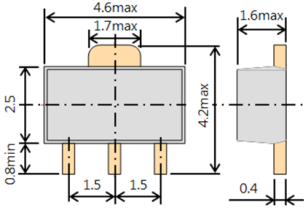
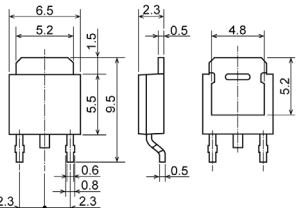
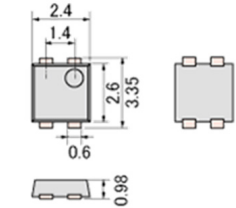
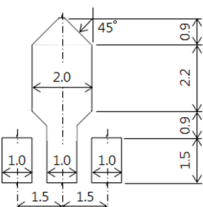
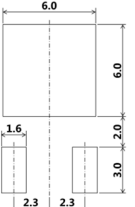
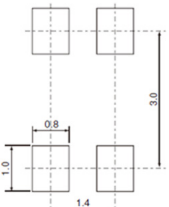


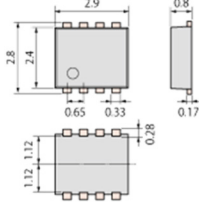
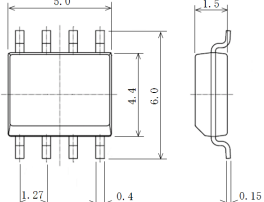
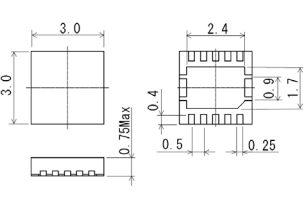
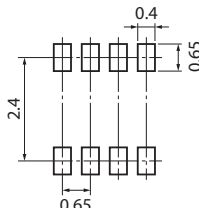
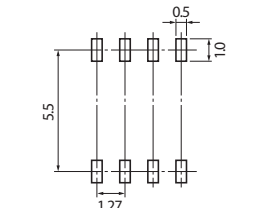
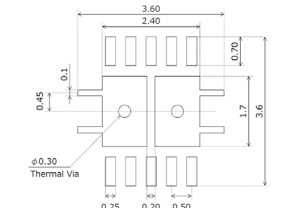
Package		Pin Count	Dimension W x L (mm)	Products				Page
				IPDs (Intelligent Power Devices)	Diodes	IGBTs	Bipolar Transistors	
Surface Mount Type	S-FLAT	2	1.6 x 3.5		✓			36
	M-FLAT	2	2.4 x 4.7		✓			36
	TSM	3	2.9 x 2.8				✓	36
	PW-Mini	3	4.6 x 4.2				✓	36
	New PW-Mold	3	6.5 x 9.5				✓	36
	HM-FLAT	4	2.4 x 3.35		✓			36
	PS-8	8	2.9 x 2.8	✓				37
	SOP-8	8	4.9 x 6.0	✓				37
	WSOP10	10	3.0 x 3.0	✓				37
	SSOP24	24	13.0 x 8.0	✓				37
	SSOP30	30	20.0 x 14.2	✓				37
	HSSOP31	31	17.5 x 11.93	✓				37
	WQFN32	32	5.0 x 5.0	✓				38
Through Hole Type	TO-220-2L	2	10.03 x 15.11		✓			38
	TO-220F-2L	2	10.0 x 15.0		✓			38
	New PW-Mold2	3	6.5 x 5.5				✓	38
	TO-126N	3	8.0 x 11.0				✓	39
	TO-220SIS	3	10.0 x 15.0			✓	✓	39
	TO-3P(N)	3	15.5 x 20.0		✓	✓	✓	39
	TO-247	3	15.94 x 20.95		✓			39
	TO-3P(L)	3	20.0 x 26.0				✓	39
	DIP26	26	32.0 x 16.6	✓				39

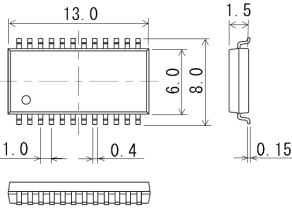
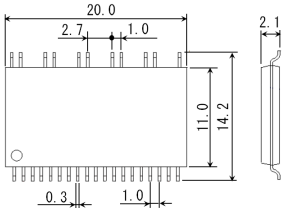
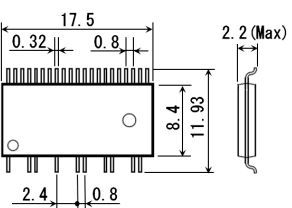
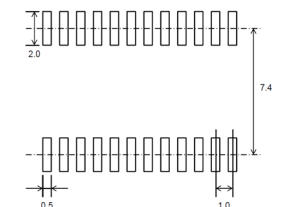
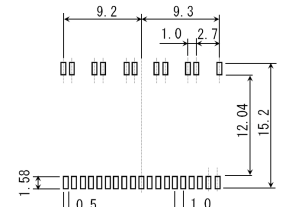
■ Dimensional Outline

Surface Mount Type

S-FLAT™ (1.6x3.5)			M-FLAT™ (2.4x4.7)			TSM (2.9x2.8)		
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	6 mm

PW-Mini (4.6x4.2)			New PW-Mold (6.5x9.5)			HM-FLAT™ (2.4x3.35)		
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	4	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	13 mm	12 mm	330 mmΦ	17.5 mm	16 mm	180 mmΦ	9 mm	16 mm

PS-8 (2.9x2.8)			SOP-8 P-1.27A (5.0x6.0)			WSO10 (3.0x3.0)		
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	17 mg	3,000 p/reel	8	85 mg	3,000 p/reel	10	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	330 mmΦ	13.5 mm	12 mm	330 mmΦ	9 mm	8 mm

SSOP24 (13.0x8.0)			SSOP30 (20.0x14.2)			HSSOP31 (17.5x11.93)		
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
24	290 mg	2,000 p/reel	30	1,200 mg		31	700 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

Surface Mount Type

WQFN32 (5.0x5.0)

Package dimension unit : mm

The figure shows three views of the WQFN32 (5.0x5.0) package:

- Top View:** A square package with a side length of 5.0 mm. It features a central square area with a side length of 3.6 mm, surrounded by a border of 0.4 mm. The package is divided into four quadrants by a dashed line.
- Side View:** A cross-sectional view showing the package height of 0.8 mm. The package is shown with a central square area of 3.6 mm and a border of 0.4 mm. The package is divided into four quadrants by a dashed line.
- Land Pattern Example:** A detailed view of the package footprint. It shows a central square area of 3.6 mm with a border of 0.4 mm. The package is divided into four quadrants by a dashed line. The package is shown with a central square area of 3.6 mm and a border of 0.4 mm. The package is divided into four quadrants by a dashed line.

Land pattern example unit : mm

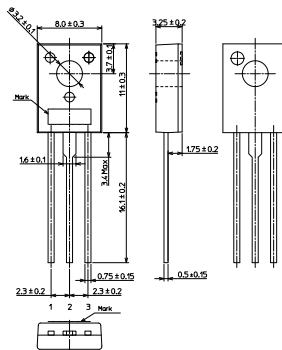
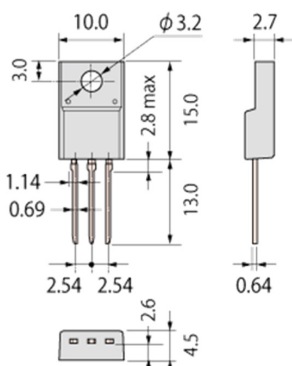
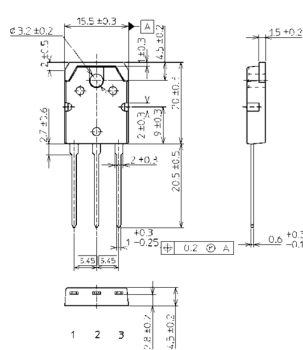
The land pattern example shows a detailed view of the package footprint. It includes the following dimensions:

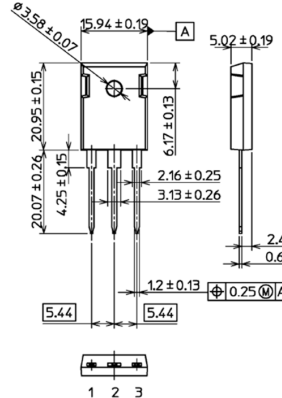
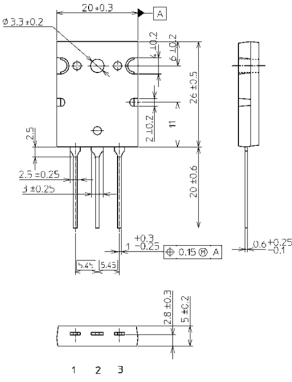
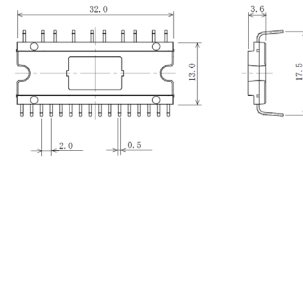
- Overall width: 5.6 mm
- Overall height: 5.6 mm
- Pin pitch (center-to-center): 0.5 mm
- Pad diameter: 0.2 mm
- Thermal via diameter: 0.3 mm
- Thermal via depth: 0.2 mm
- Thermal via spacing: 0.5 mm
- Pad diameter: 0.2 mm
- Pin pitch (center-to-center): 0.5 mm
- Overall width: 5.6 mm
- Overall height: 5.6 mm

Pin count	Weight	MOQ
32	60 mg	
Reel dimension	Tape width	
Diameter	Width	

Through Hole Type

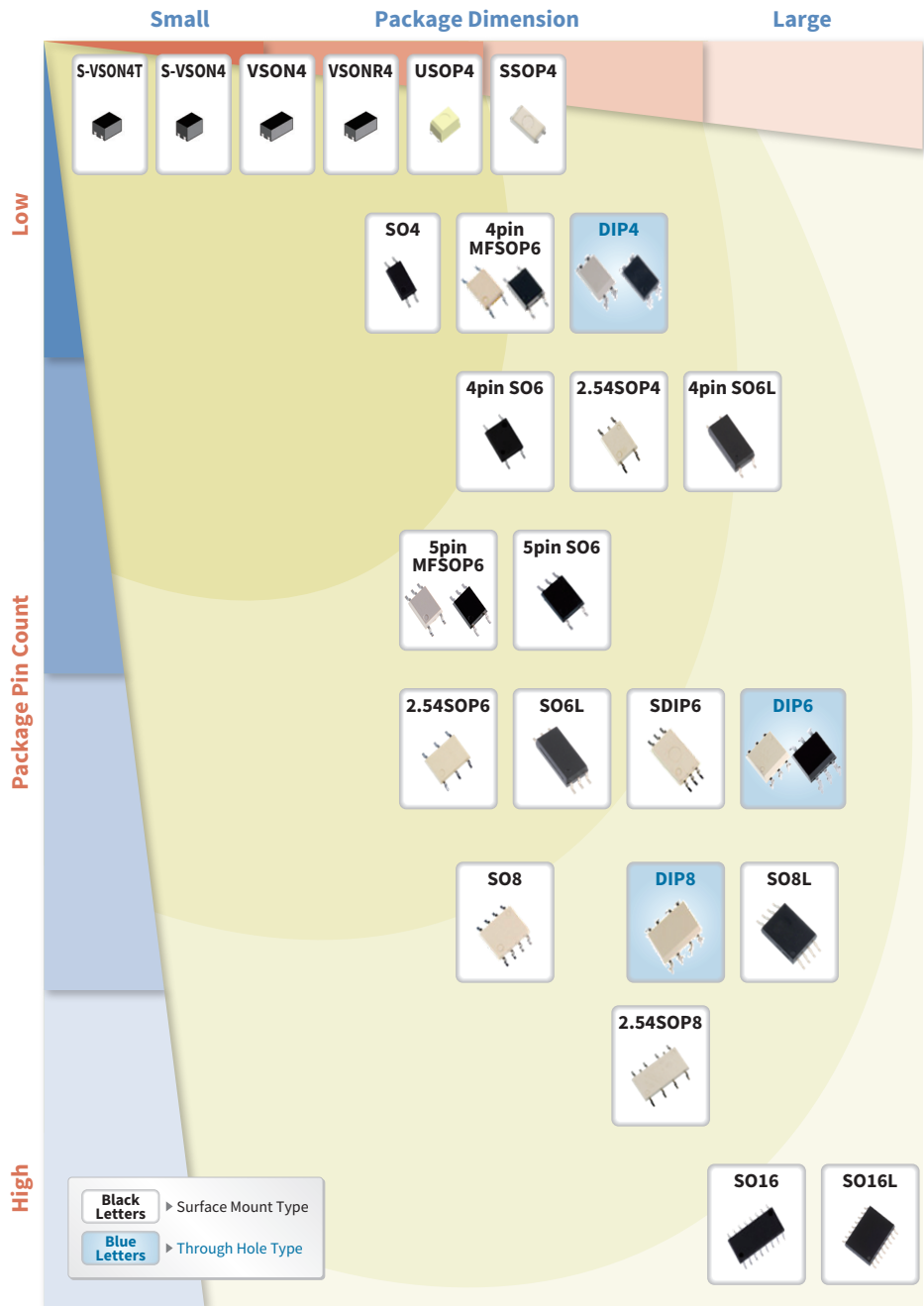
TO-220-2L (10.03x15.11)			TO-220F-2L (10.0x15.0)			New PW-Sold2 (6.5x5.5)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Top view dimensions: 10.03±0.39, 6.27±0.43, 15.11±0.29, 28.0±0.26, 3.97±0.2, 1.44±0.32, 1.08, 0.77±0.15, Φ0.25(ΦA), 0.5±0.15, 2.56±0.36. Side view dimensions: 4.45±0.26, 1.29±0.12.			Top view dimensions: 10.0, 3.0, 6.9, 15.0, 13.0, 1.95, 1.14, 0.69, 5.08, Φ3.2. Side view dimensions: 4.5, 2.7, 0.64.			Top view dimensions: 6.5±0.2, 5.2±0.2, 1.5±0.2, 0.6 MAX., 0.9, 1.6, 5.5±0.2, 5.7, 4.1±0.2, 2.3, 2.3, 2.3±0.2, 0.8 MAX., 1.1 MAX., 0.6±0.15, 0.6 MAX. Side view dimensions: 1.1±0.2, 0.6 MAX.		
Pin count	Weight	Q'ty	Pin count	Weight	Q'ty	Pin count	Weight	Q'ty
2	1,900 mg	50 p/tube	2	1,900 mg	50 p/tube	3	360 mg	200 p/bag
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		178 x 80 x 90 mm	15 bag	

TO-126N (8.0x11.0)			TO-220SIS (SC-67) (10.0x15.0)			TO-3P(N) (SC-65) (15.5x20.0)		
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	840 mg	250 p/bag	3	1,700 mg	50 p/tube	3	4,600 mg	25 p/tube
Carton dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton	Tube dimension		Tube Q'ty / Carton
245 x 175 x 100 mm		8 bag	32.4 x 7.11 x 528.5 mm		30 tube	45 x 7.6 x 433 mm		40 tube

TO-247 (15.94x20.95)			TO-3P(L) (20.5x26.0)			DIP26 (32.0x16.6)		
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	6,150 mg	30 p/tube	3	9,750 mg	100 p/tray	26	3,800 mg	20 p/tube
Tube dimension		Tube Q'ty / Carton	Tray dimension		Tray Q'ty / Carton	Tube dimension		Tube Q'ty / Carton
46 x 7.7 x 533.5 mm		8 tube	184 x 24 x 290 mm		5 tray	22 x 11 x 665 mm		25 tube

5. Photocouplers , Photorelays

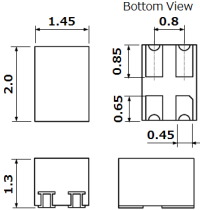
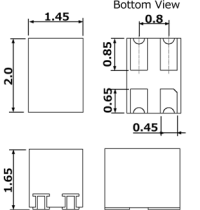
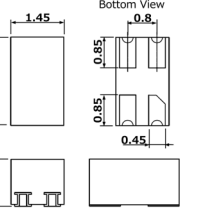
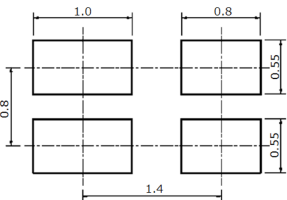
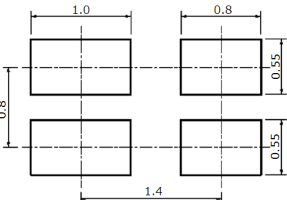
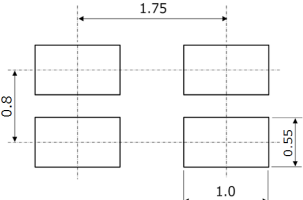
■ Package Lineups

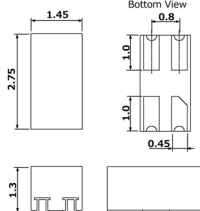
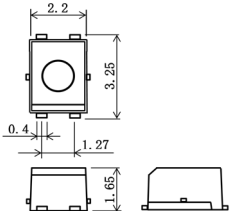
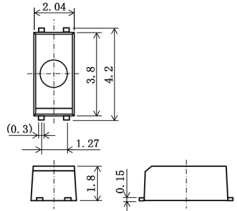
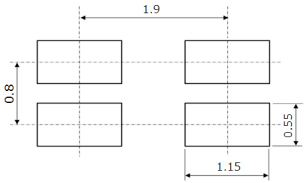
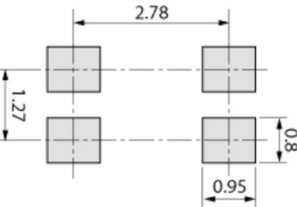
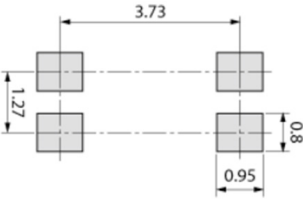


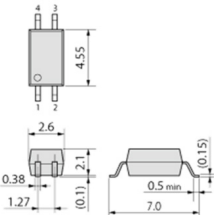
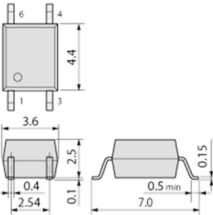
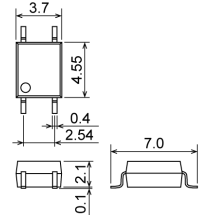
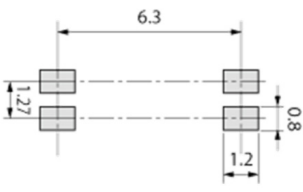
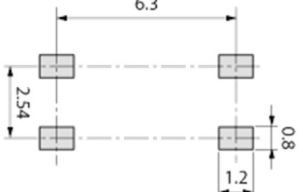
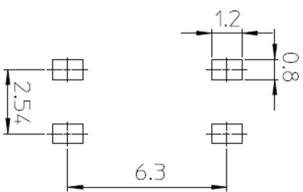
Package		Pin Count	Dimension W x L (mm)	Products						Page
				Photocouplers					Photorelays	
				IC Output	Transistor Output	Triac Output	Photovoltaic Output	Thyristor Output		
Surface Mount Type	S-VSON4T	4	1.45 x 2.0						✓	42
	S-VSON4	4	1.45 x 2.0						✓	42
	VSON4	4	1.45 x 2.45						✓	42
	VSONR4	4	1.45 x 2.75						✓	42
	USOP4	4	2.2 x 3.25						✓	42
	SSOP4	4	2.04 x 4.2				✓		✓	42
	SO4	4	2.6 x 7.0		✓					43
	4pin MFSOP6	4	3.6 x 7.0			✓	✓			43
	4pin SO6	4	3.7 x 7.0	✓	✓	✓	✓		✓	43
	2.54 SOP4	4	3.9 x 7.0						✓	43
	4pin SO6L	4	3.84 x 10.0	✓	✓					43
	5pin MFSOP6	5	3.6 x 7.0	✓		✓		✓		43
	5pin SO6	5	3.7 x 7.0	✓						44
	2.54 SOP6	6	6.3 x 7.0						✓	44
	SO6L	6	3.84 x 10	✓						44
	SDIP6	6	4.58 x 9.7	✓						44
	SO8	8	5.1 x 6.0	✓						44
	SO8L	8	5.85 x 10.0	✓						44
	2.54 SOP8	8	9.4 x 7.0						✓	45
	SO16	16	10.3 x 7.0		✓					45
	SO16L	16	10.3 x 10.0	✓						45
Through Hole Type	DIP4	4	4.58 x 7.62		✓	✓			✓	46
	DIP4(TLP785)	4	4.6 x 7.62		✓					46
	DIP6	6	7.12 x 7.62		✓	✓	✓	✓	✓	46
	DIP8	8	9.66 x 7.62	✓	✓	✓		✓	✓	46

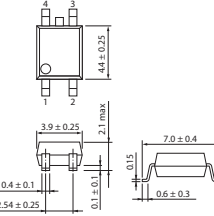
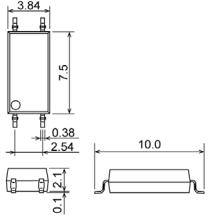
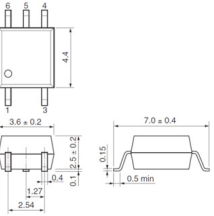
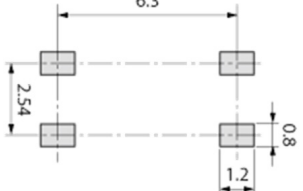
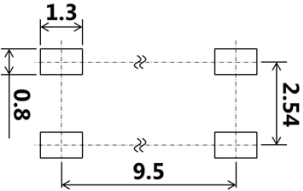
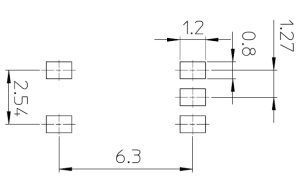
■ Dimensional Outline

Surface Mount Type

S-VSON4T (1.45x2.0)			S-VSON4 (1.45x2.0)			VSON4 (1.45x2.45)		
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	2,500 p/reel	4	10 mg	2,500 p/reel	4	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	9 mm	8 mm	180 mmΦ	9 mm	8 mm

VSONR4 (1.45x2.75)			USOP4 (2.2x3.25)			SSOP4 (2.04x4.2)		
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
4	10 mg	3,000 p/reel	4	30 mg	1,500 p/reel	4	30 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	13 mm	12 mm	180 mmΦ	13 mm	12 mm

SO4 (2.6x7.0)			4pin MFSOP6 (3.6x7.0)			4pin SO6 (3.7x7.0)		
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	50 mg	2,500 p/reel	4	90 mg	3,000 p/reel	4	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	13.5 mm	12 mm	380 mmΦ	13.5 mm	12 mm	380 mmΦ	13.5 mm	12 mm

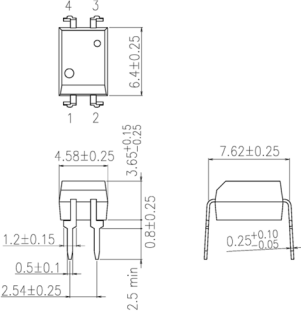
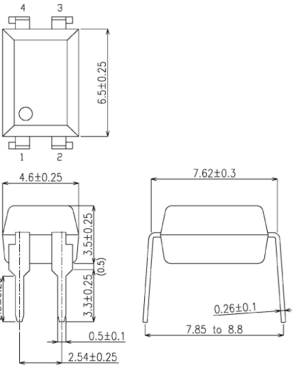
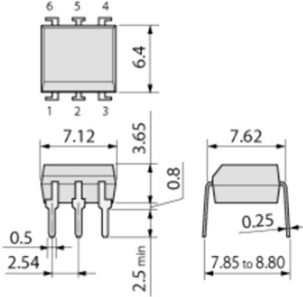
2.54SOP4 (3.9x7.0)			4pin SO6L (3.84x10.0)			5pin MFSOP6 (3.6x7.0)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
								
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
								
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
4	100 mg	2,500 p/reel	4	128 mg	3,000 p/reel	5	90 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	13.5 mm	12 mm	330 mmΦ	17.4 mm	16 mm	380 mmΦ	13.5 mm	12 mm

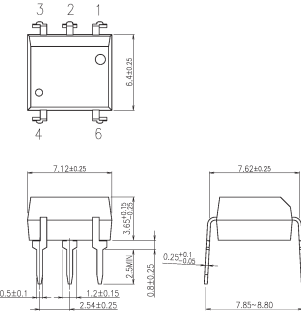
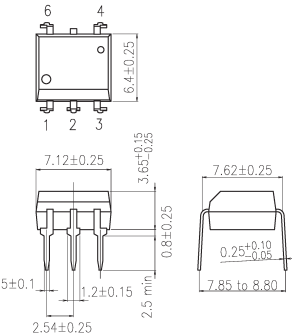
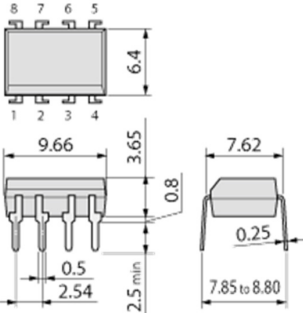
5pin SO6 (3.7x7.0)			2.54SOP6 (6.3x7.0)			SO6L (3.84x10.0)		
Package dimension		unit : mm	Package dimension		unit : mm	Package dimension		unit : mm
Land pattern example		unit : mm	Land pattern example		unit : mm	Land pattern example		unit : mm
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
5	80 mg	3,000 p/reel	6	130 mg	2,500 p/reel	6	126 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	17.5 mm	16 mm	330 mmΦ	17.4 mm	16 mm

SDIP6 (4.58x9.7)			SO8 (5.1x6.0)			SO8L (5.85x10.0)		
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	260 mg	1,500 p/reel	8	110 mg	2,500 p/reel	8	205 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	17.5 mm	16 mm	330 mmΦ	13.5 mm	12 mm	330 mmΦ	17.4 mm	16 mm

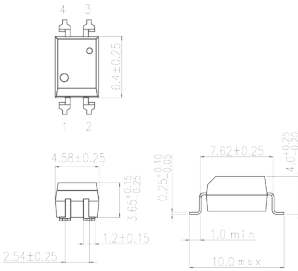
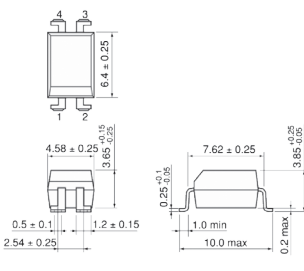
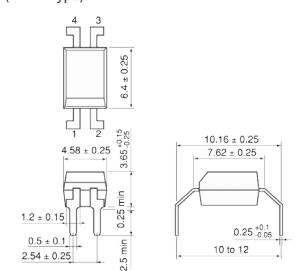
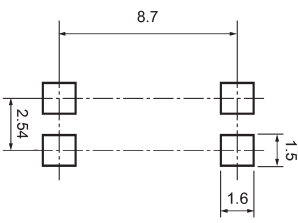
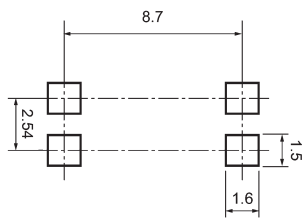
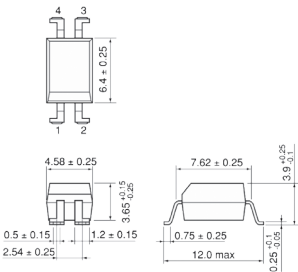
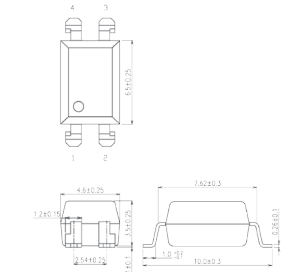
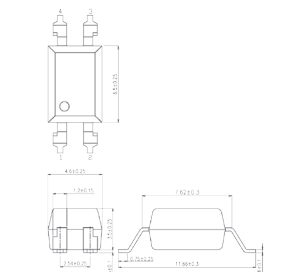
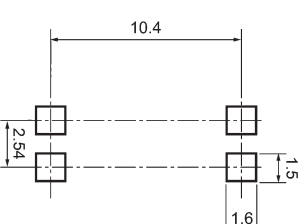
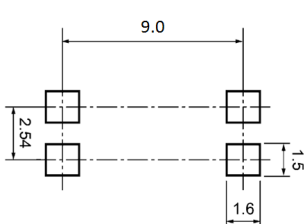
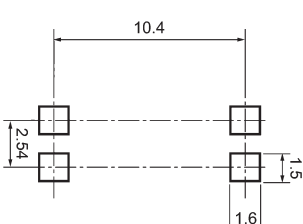
2.54SOP8 (9.4x7.0)			SO16 (10.3x7.0)			SO16L (10.3x10.0)		
Package dimension unit : mm 			Package dimension unit : mm 			Package dimension unit : mm 		
Land pattern example unit : mm 			Land pattern example unit : mm 			Land pattern example unit : mm 		
Pin count	Weight	MOQ	Pin count	Weight	MOQ	Pin count	Weight	MOQ
8	200 mg	2,500 p/reel	16	190 mg	2,000 p/reel	16	370 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	17.5 mm	16 mm	330 mmΦ	17.4 mm	16 mm

Through Hole Type

DIP4 (4.58x7.62)			DIP4(TLP785) (4.6x7.62)			DIP6 (7.12x7.62)		
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	260 mg	100 p/tube	6	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 (7.12x7.62)			5pin DIP6 (cut) (7.12x7.62)			DIP8 (9.66x7.62)		
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	400 mg	50 p/tube	5	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)	DIP4(LF5) / (TP5)	DIP4(LF2)
Package dimension unit : mm 	Package dimension unit : mm 	Package dimension unit : mm (DIP4 FType) 
Land pattern example unit : mm 	Land pattern example unit : mm 	
DIP4(LF4) / (TP4)	TLP785 DIP4(LF6) / (TP6)	TLP785 DIP4(LF7) / (TP7)
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 

DIP6(LF1) / (TP1)	DIP6(LF5) / (TP5)	DIP6(LF2)
Package dimension unit : mm 	Package dimension unit : mm 	Package dimension unit : mm (DIP6 Ftype)

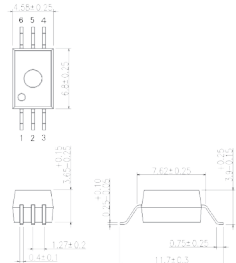
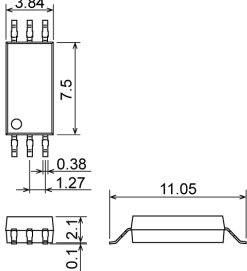
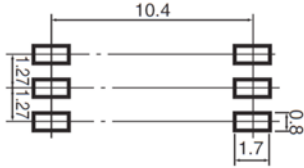
Land pattern example	Land pattern example
unit : mm 	unit : mm

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

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

5pin DIP6 (LF2)	5pin DIP6 (LF4) / (TP4)	5pin DIP6 (cut) (LF1) / (TP1)
Package dimension (5pin DIP6 Ftype)	Package dimension	Package dimension
	Land pattern example	Land pattern example

5pin DIP6 (cut) (LF5) / (TP5)	5pin DIP6 (cut) (LF2)	5pin DIP6 (cut) (LF4) / (TP4)
Package dimension	Package dimension (5pin DIP6 (cut) Ftype)	Package dimension
Land pattern example		Land pattern example

SDIP6	SO6L(LF4)
Package dimension (SDIP6 Ftype) unit : mm 	Package dimension unit : mm 
Land pattern example unit : mm 	Land pattern example unit : mm 

DIP8(LF1) / (TP1)	DIP8(LF5) / (TP5)	DIP8(LF2)
Package dimension unit : mm 	Package dimension unit : mm 	Package dimension unit : mm (DIP8 Ftype)

Land pattern example unit : mm 	Land pattern example unit : mm
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DIP8(LF4) / (TP4)	SO8L(LF4)
Package dimension unit : mm 	Package dimension unit : mm
Land pattern example unit : mm 	Land pattern example unit : mm

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