ELECTRONIC

SURFACE MOUNT FAST SWITCHING RECTIFIER

S3A THRU S3M

VOLTAGE RANGE 50 to 1000 Volts
CURRENT 3.0 Ampere

RoHS COMPLIANT

Features

- Plastic package has underwrites laboratory flammability Classification 94V-0
- For surface mounted applications
- Low profile package
- Built-in strain relief, ideal for automated placement
- Glass Passivated chip junction
- High temperature soldering: 250℃/10 second at terminals

DO-214AC (SMA)

Mechanical Data

- Case: JEDED SMA (DO-214AC) molded plastic
- Terminals: Plated axial lead solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.002 ounce, 0.064 gram

Maximum Ratings and Electrical Characteristics

- Ratings at 25℃ ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

TYPE NUMBER		SYMBOLS	S3A	S3B	S3D	S3G	S3J	S3K	S3M	UNIT
Maximum Reverse Peak Repetitive Voltage		V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage		V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Output Current, 0.06"(1.5mm) lead length at T_C=100℃		$I_{(AV)}$	3.0							Amps
Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC Method)		I_{FSM}	80							Amps
Maximum Instantaneous Forward Voltage drop Per Bridge element 3.0A		V_F	1.1							Volts
Maximum Reverse Current at rated DC blocking voltage per element	TA=25℃	I_R	10							μAmps
	TA=125℃		100							
Typical junction capacitance (NOTE 1)		C_J	30							pF
Typical Thermal Resistance (NOTE 2)		$R_{\Theta JL}$	78							℃/W
		$R_{\Theta JA}$	45							℃/W
Operating and Storage Temperature Range		T_J ,T_{STG}	(-55 to +150)							℃

Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Thermal Resistance from Junction to Ambient at. 1.6×1.6mm^2 copper pad areas.

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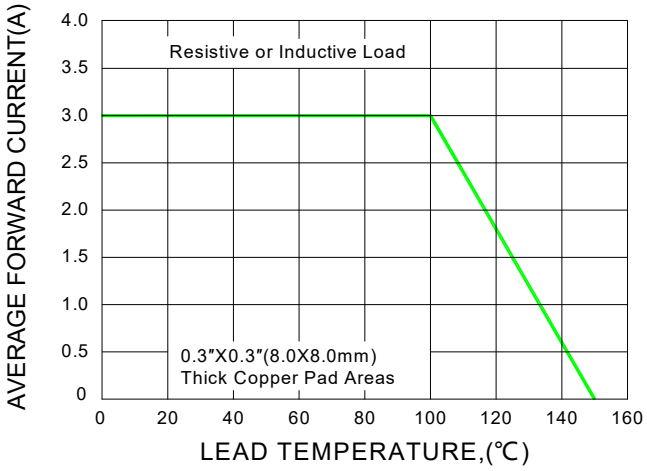
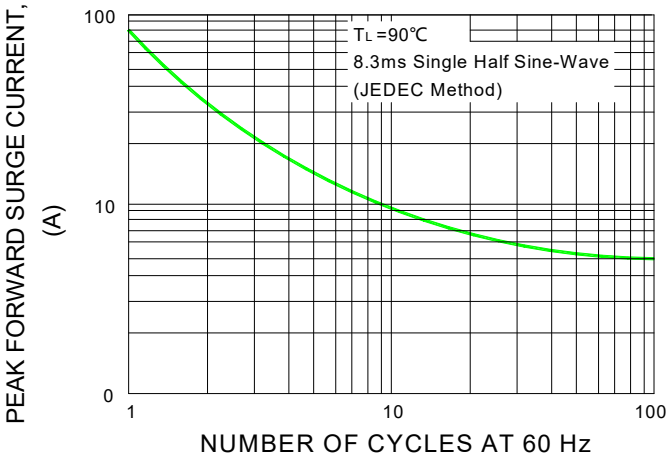
Ratings and Characteristic Curves (TA=25℃ unless otherwise noted)

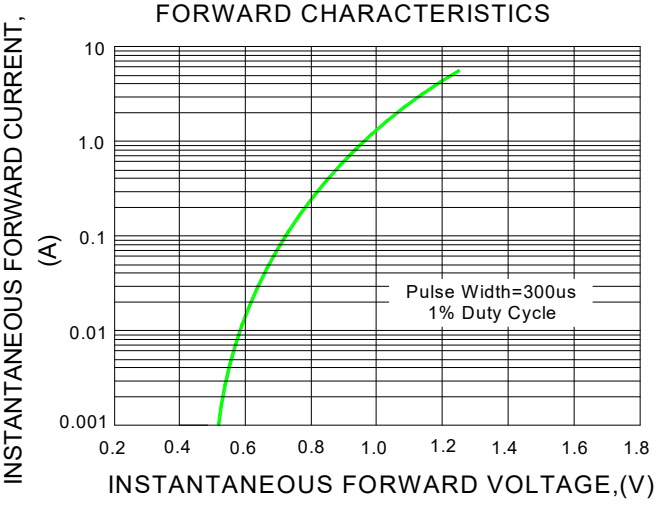
F1G.1-FORWARD CURRENT DERATING CURVE



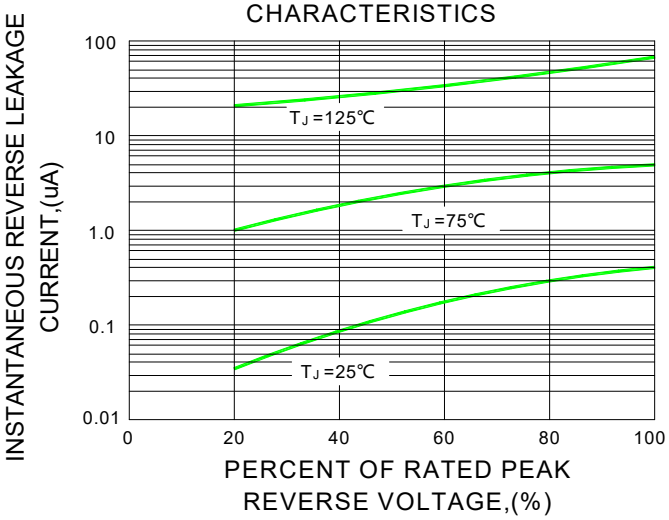
F1G.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



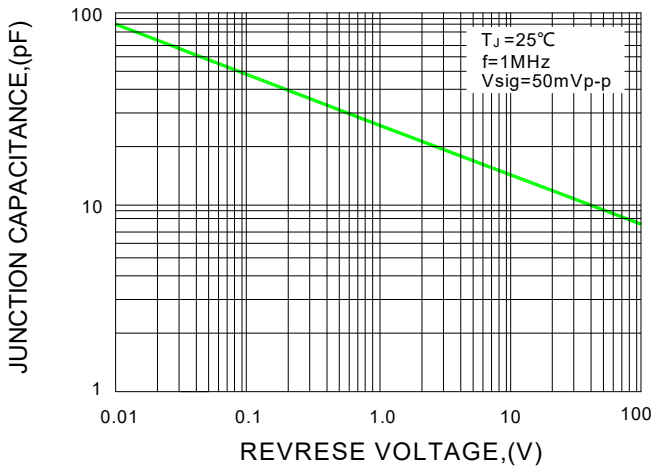
F1G.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



F1G.4-TYPICAL REVERSE CHARACTERISTICS



F1G.5-TYPICAL JUNCTION CAPACITANCE



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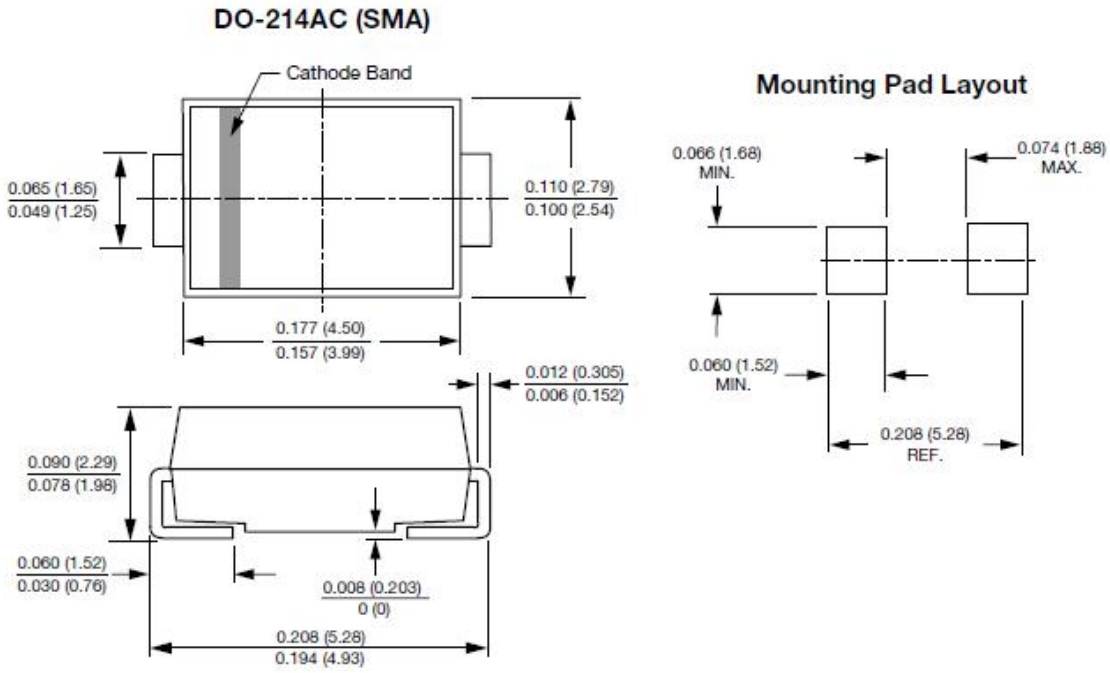
Package Outline Dimensions in inches (millimeters)

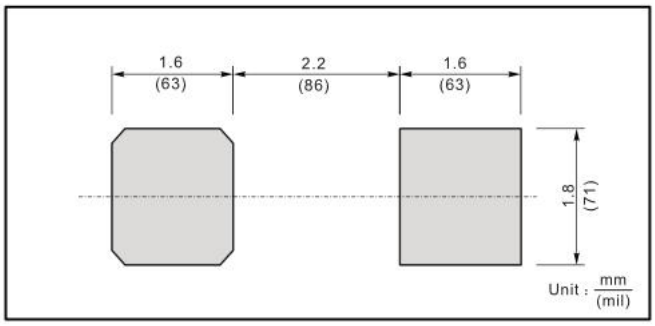


The Recommended Mounting Pad Size

Marking

Type number	Marking code
S3AA	S3A
S3BA	S3B
S3CA	S3C
S3DA	S3D
S3GA	S3G
S3KA	S3K
S3MA	S3M

The recommended mounting pad size



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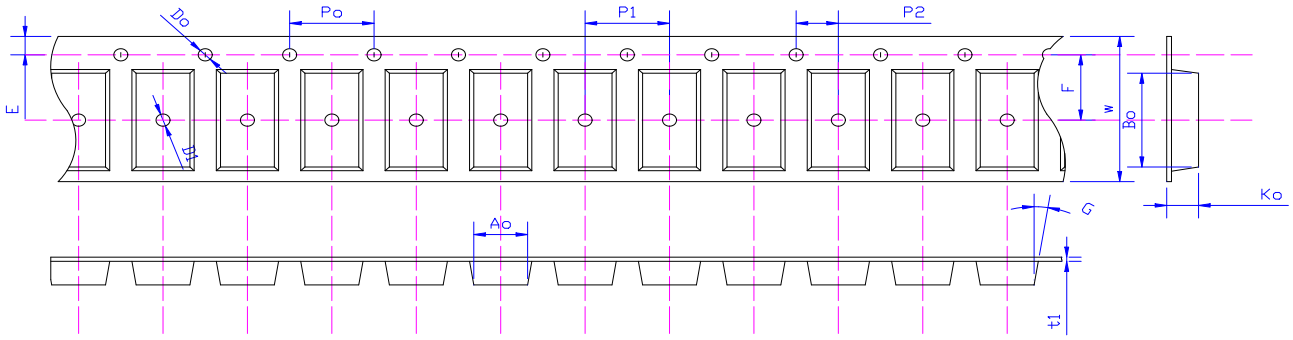
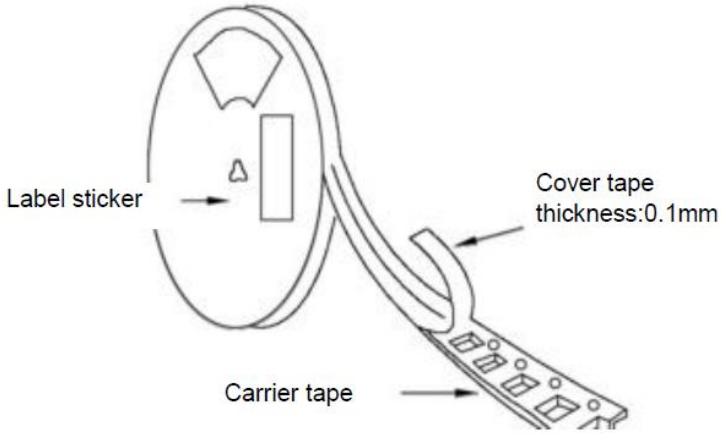
Package Reel Information



Specifications	Ao	Bo	Ko	Po	W	t1
SMA	2.55±0.10	5.10±0.10	2.36±0.10	4.00±0.1	12.0±0.05	0.23±0.02



DEVICE TYPE	Tape Width	13"Reel			07"Reel			
		Q'TY/REEL(pcs)	BOX/CARTOON	Q'TY/CARTON(pcs)	Q'TY/REEL(pcs)	REEL/BOX	BOX/CARTOON	Q'TY/CARTON(pcs)
SMA	12mm	5000	8	80000	1500	2	16	48000

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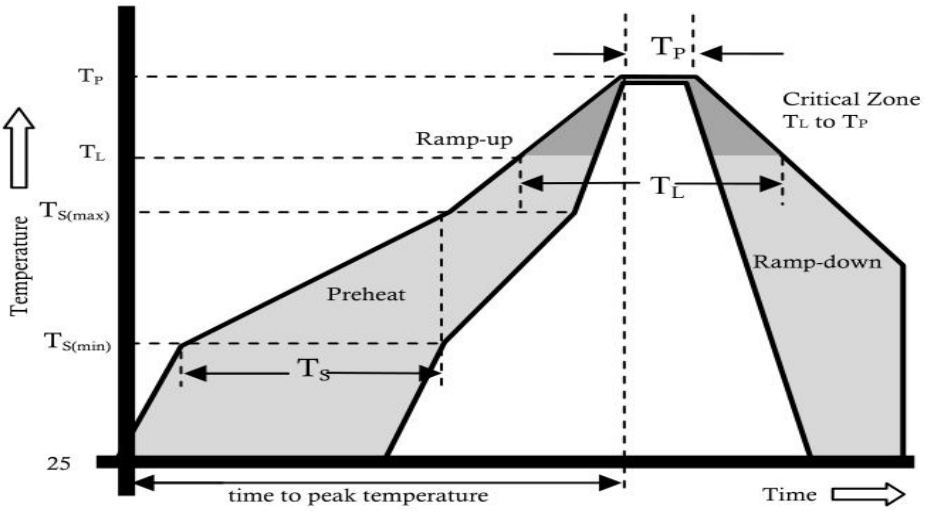
Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp(T_L) to peak)		3°C/sec. Max.
T_S(max) to T_L - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature (T_L)(Liquidus)	+217°C
	Temperature (T_L)	60-150 secs.
Peak Temp (T_P)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (T_P)		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (T_P)		8 min. Max.
Do not exceed		+260°C

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