SURFACE MOUNT GLASS PASSIVATED STANDARD RECTIFIER

GS1A THRU GS1M

VOLTAGE RANGE 50 to 1000 Volts

CURRENT 1.0 Ampere

RoHS COMPLIANT

Features

- Glass passivated chip
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering: 260℃/10S at terminals
- Component in accordance to ROHS 2002/95/1 and WEEE 2002/96/EC

DO-214AC (SMA)

Mechanical Data

- Case: JEDEC SMAFL mold plastic Body over glass passivated chip
- Terminals:Solder plated, solderable per J-STD-002B and JESD22-B102D
- Polarity: Laser band denote cathode band
- 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	S1A GS1A	S1B GS1B	S1C GS1C	S1D GS1D	S1G GS1G	S1K GS1K	S1M GS1M	UNITS
Maximum Repetitive Peak Reverse 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 Current		$I_{(AV)}$	1.0							Amps
Peak Forward Surge Current 8.3mS single half sine-wave superimposed on rated load (JEDEC method)		I_{FSM}	30							Amps
Maximum Instantaneous Forward Voltage at 1.0A		V_F	1.1							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_A = 25℃	I_R	5.0							μA
	T_A = 125℃		100							
Typical Junction Capacitance (NOTE 1)		C_J	15							pF
Typical Thermal Resistance (NOTE 2)		$R_{\theta JA}$	50							℃/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 and from junction to lead mounted on 0.2×0.2"(5.0 × 5.0mm) copper pad areas.

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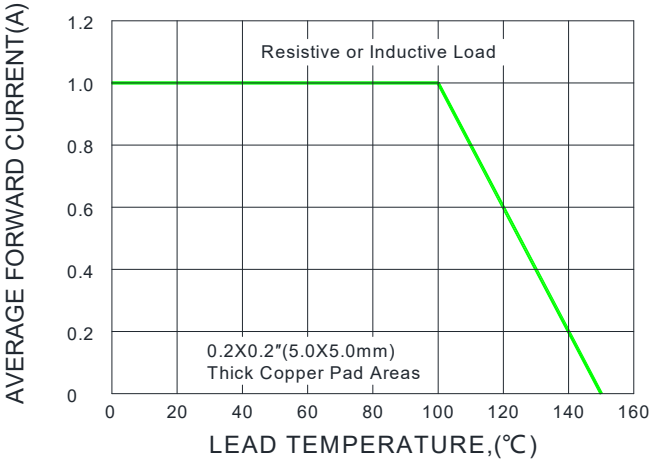
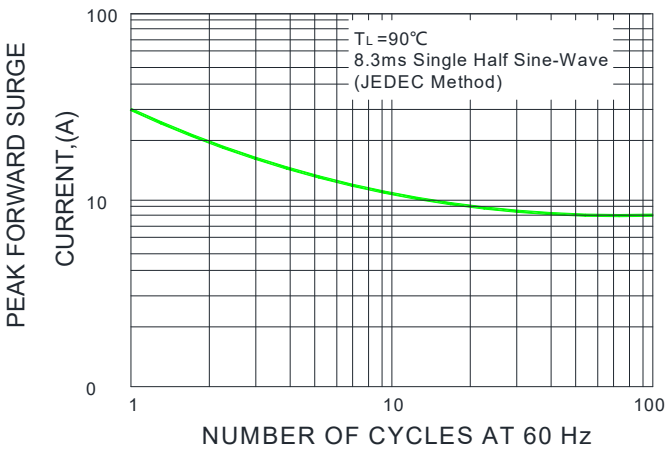
Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

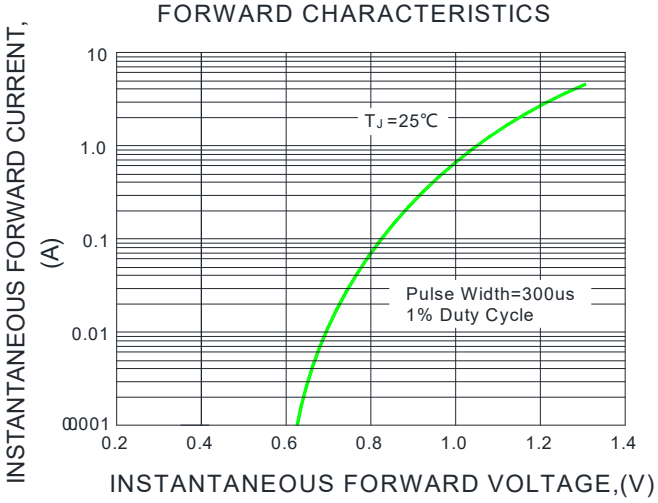
F1G.1-FORWARD CURRENT DERATING CURVE



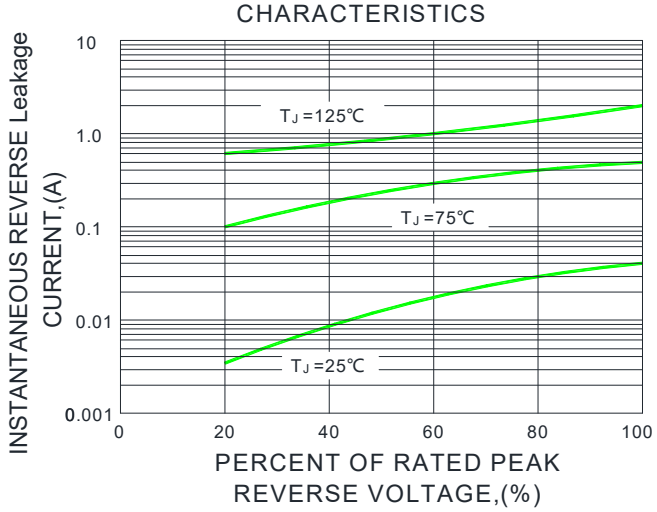
F1G.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



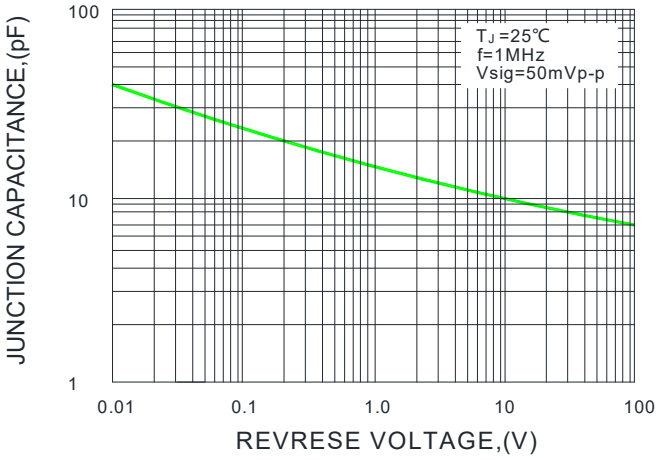
F1G.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



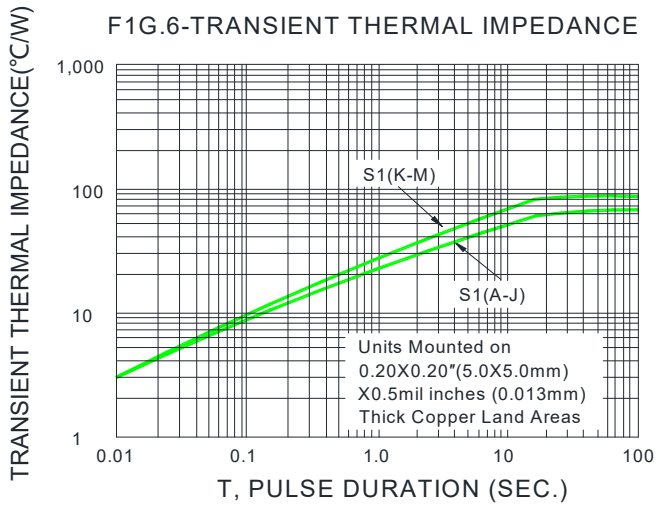
F1G.4-TYPICAL REVERSE CHARACTERISTICS



F1G.5-TYPICAL JUNCTION CAPACITANCE



F1G.6-TRANSIENT THERMAL IMPEDANCE



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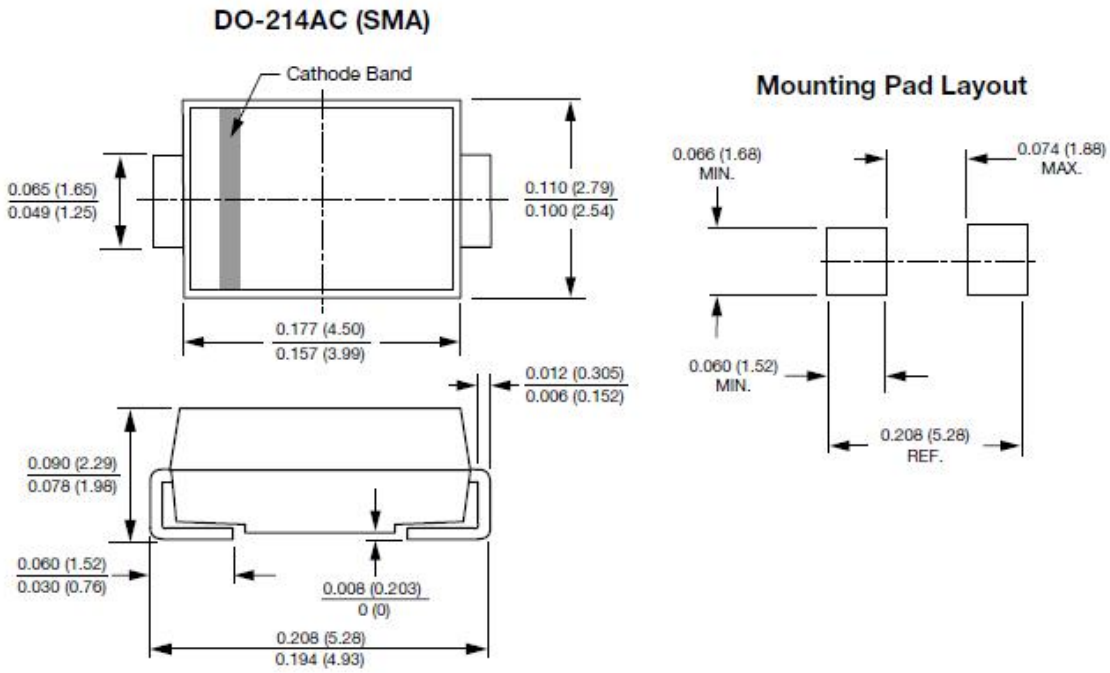
Package Outline Dimensions in inches (millimeters)

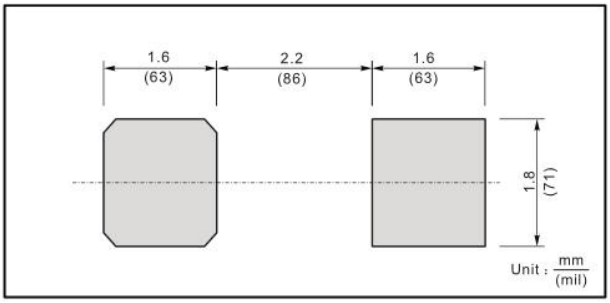


The Recommended Mounting Pad Size

Marking

Type number	Marking code
GS1A	S1A
GS1B	S1B
GS1C	S1C
GS1D	S1D
GS1G	S1G
GS1K	S1K
GS1M	S1M

The recommended mounting pad size



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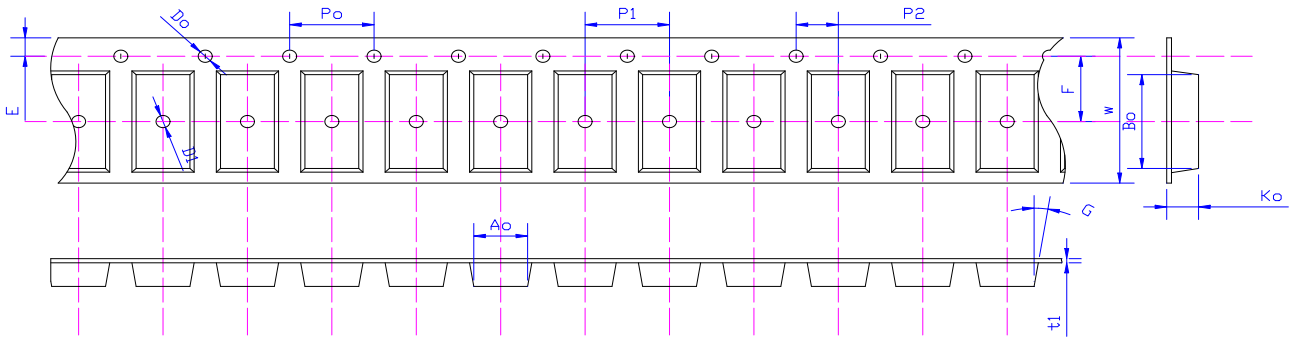
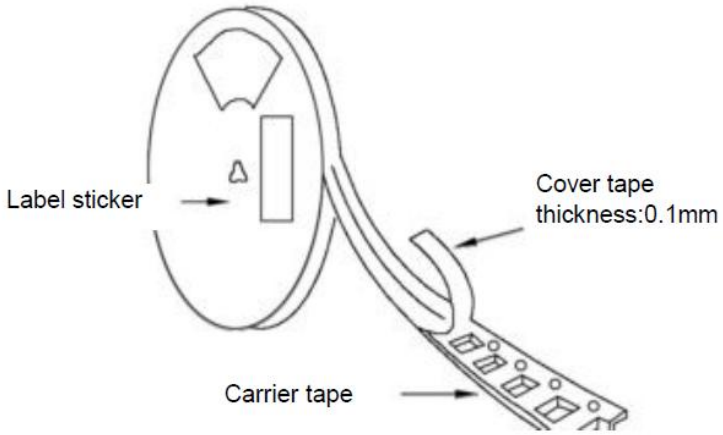
Package Reel Information



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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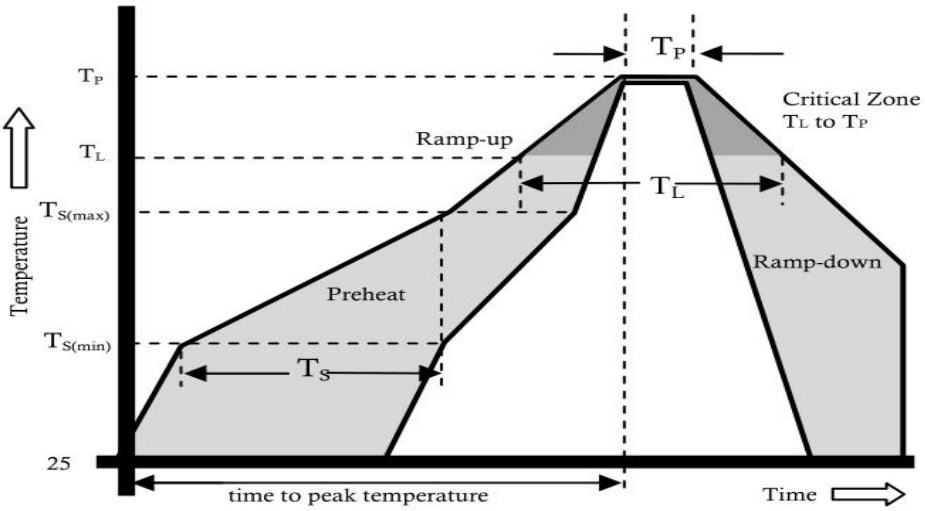
Reflow Profile



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

Disclaimer

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