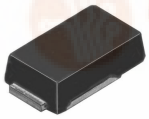
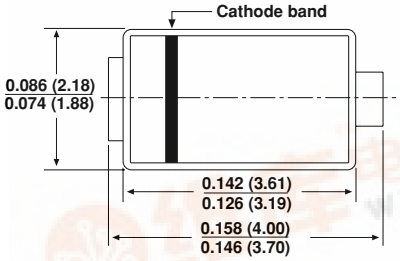
New Product

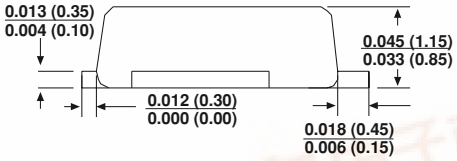
High Current Density Surface Mount Glass-Passivated Rectifiers



Case Style SMP

Reverse Voltage 50 to 600 V
Forward Current 1.0 A





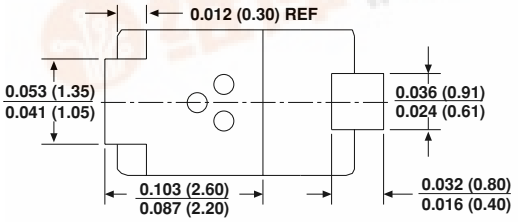
Features

- Very low profile - typical height of 1.0mm
- Ideal for automated placement
- Glass passivated chip junction
- For use in rectification, power supply, home appliances and telecommunication
- High temperature soldering: 260°C maximum/10 seconds at terminals
- Meets MSL level 1 per J-STD-020C

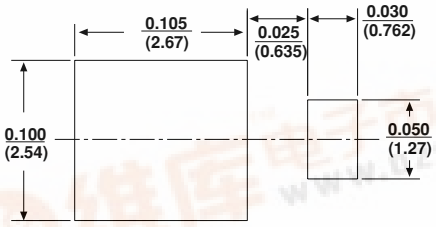
Mechanical Data

Case: SMP
Terminals: Matte Tin plated (E3 Suffix) leads, solderable per J-STD-002B and MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Weight: 0.0009 oz., 0.024 g
Epoxy meets UL 94V-0 flammability rating

Mounting Pad Layout



Dimensions in inches and (millimeters)



Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	S1PA	S1PB	S1PD	S1PG	S1PJ	Unit
Device marking code		SA	SB	SD	SG	SJ	
Maximum reverse voltage	V_{RM}	50	100	200	400	600	V
Maximum average forward rectified current Fig.1	$I_{F(AV)}$	1					A
Peak forward surge current 10ms single half sine-wave superimposed on rated load	I_{FSM}	30					A
Typical thermal resistance (1)	$R_{\theta JA}$ $R_{\theta JL}$ $R_{\theta JC}$	105 15 20					°C/W
Operating junction temperature	T_J,	150					°C
Storage temperature	T_{STG}	–55 to +150					°C

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Maximum instantaneous forward voltage(2) at I_F=1A, T_J=25°C at I_F=1A, T_J=125°C	V_F	1.1 0.95	V
Maximum reverse current at rated V_R(2) T_J = 25°C T_J =125°C	I_R	1.0 50	µA
Typical reverse recovery time at I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	trr	1.8	µs
Typical junction capacitance at 4.0V, 1MHz	C_J	6.0	pF

Notes: (1) Thermal resistance from junction to ambient and junction to lead mounted on P.C.B. with 5.0 x 5.0mm copper pad areas. $R_{\theta JL}$ is measured at the terminal of cathode band. $R_{\theta JC}$ is measured at the top centre of the body
(2) Pulse test: 300µs pulse width, 1% duty cycle

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

Fig. 1 – Maximum Forward Current Derating Curve

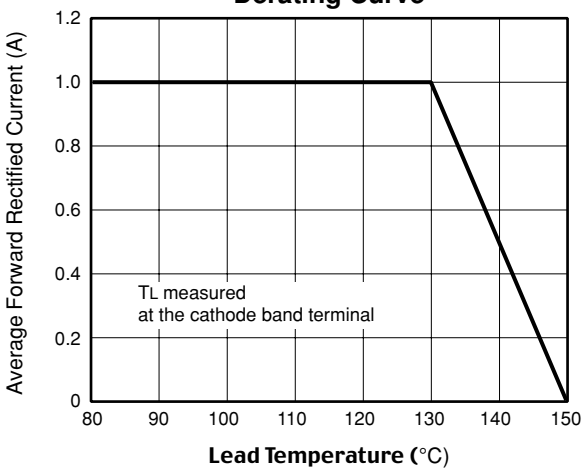


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

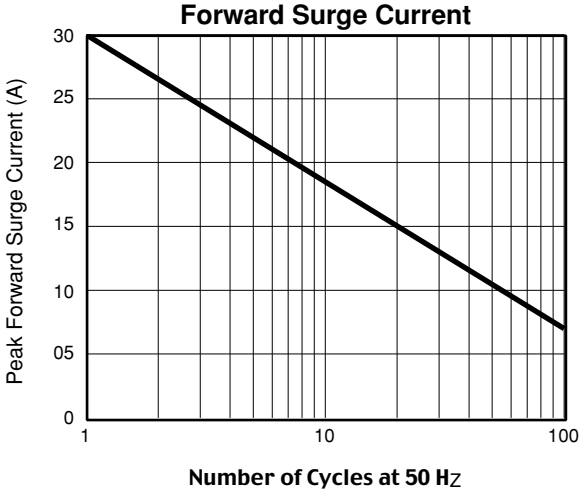


Fig. 3 – Typical Instantaneous Forward Characteristics

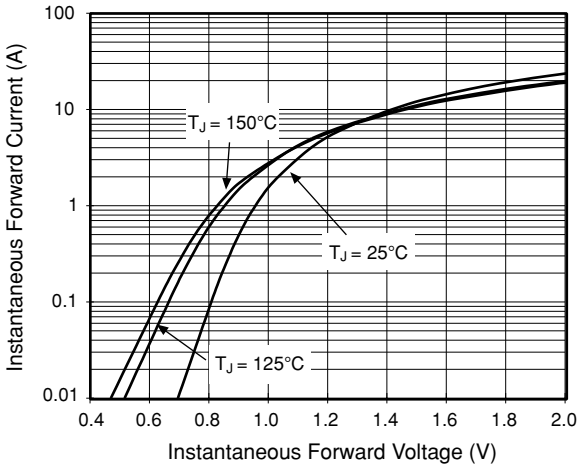


Fig. 4 – Typical Reverse Leakage Characteristics

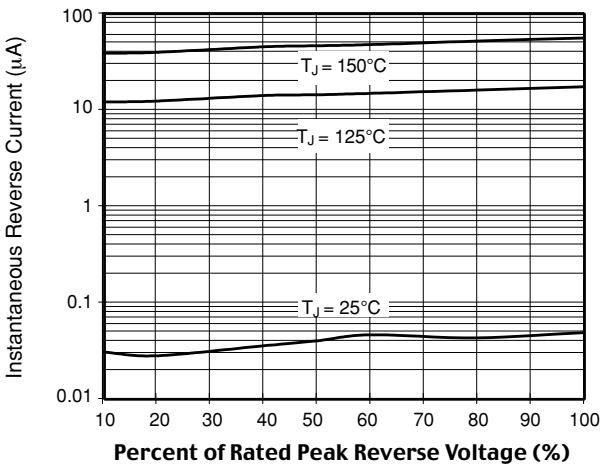


Fig. 5 – Typical Junction Capacitance

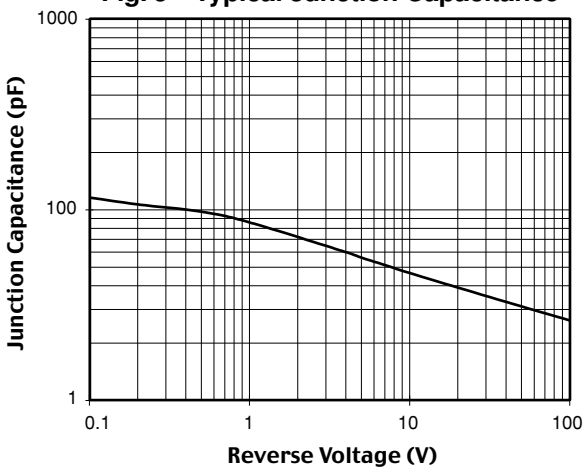


Fig. 6 – Typical Transient Thermal Impedance