

Features

- Low profile package
- Ideal for automated placement
- Low power losses, high efficiency
- Low forward voltage drop
- High surge capability
- High temperature soldering:
260°C/10 seconds at terminals
- Component in accordance to
RoHS 2002/95/1 and WEEE 2002/96/EC



SMAF



Mechanical Data

- **Case:** JEDEC SMAF molded plastic
- **Terminals:** Solder plated, solderable per
JESD22-B102D
- **Polarity:** Laser band denotes cathode end

Major Ratings and Characteristics

$I_{F(AV)}$	1.0A
V_{RRM}	20 V to 200 V
I_{FSM}	40A
V_F	0.50V, 0.55V, 0.70V, 0.85V, 0.95V
$T_j \text{ max.}$	125 °C

Maximum Ratings & Thermal Characteristics

($T_A = 25\text{ °C}$ unless otherwise noted)

Items	Symbol	SS12	SS13	SS14	SS15	SS16	SS18	SS110	SS115	SS120	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	80	100	150	200	V
Maximum RMS voltage	V_{RMS}	14	21	28	35	42	56	70	105	140	V
Maximum DC blocking voltage	V_{DC}	20	30	40	50	60	80	100	150	200	V
Maximum average forward rectified current	$I_{F(AV)}$	1									A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40									A
Voltage rate of change (rated V_R)	dv/dt	10000									V/μs
Thermal resistance from junction to lead ⁽¹⁾	$R_{θJL}$	35									°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +125									°C

Note 1: Mounted on P.C.B. with 0.2 x 0.2" (5.0 x 5.0mm) copper pad areas.

Electrical Characteristics ($T_A = 25\text{ °C}$ unless otherwise noted)

Items	Test conditions		Symbol	SS12	SS13~24	SS15~26	SS18~210	SS115~220	UNIT
Instantaneous forward voltage	$I_F=1.0A^{(2)}$		V_F	0.50	0.55	0.70	0.85	0.95	V
Reverse current	$V_R=V_{DC}$	$T_J=25^{\circ}C$	I_R	0.5					mA
		$T_J=100^{\circ}C$		5.0					

Note 2: Pulse test: 300μs pulse width, 1% duty cycle.

Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

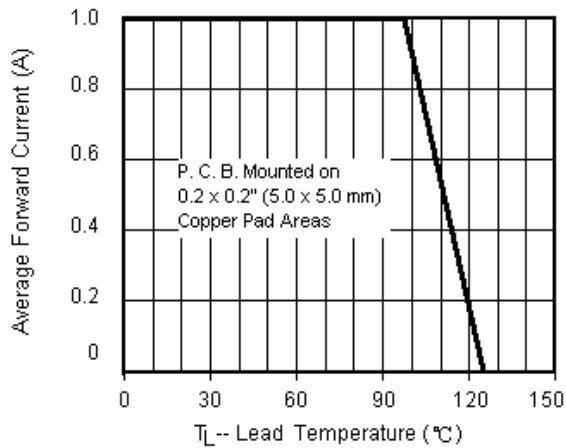


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

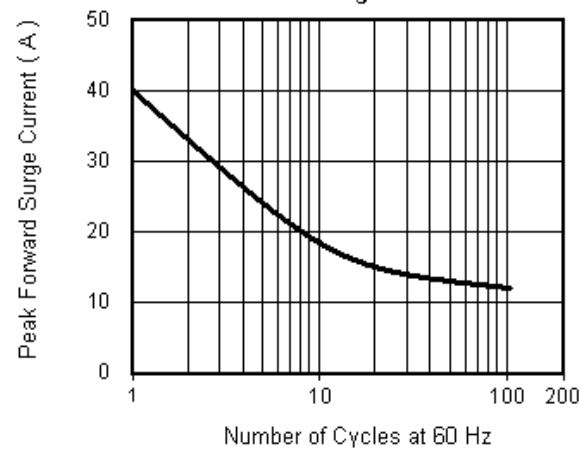


Fig.3 Typical Instantaneous Forward Characteristics

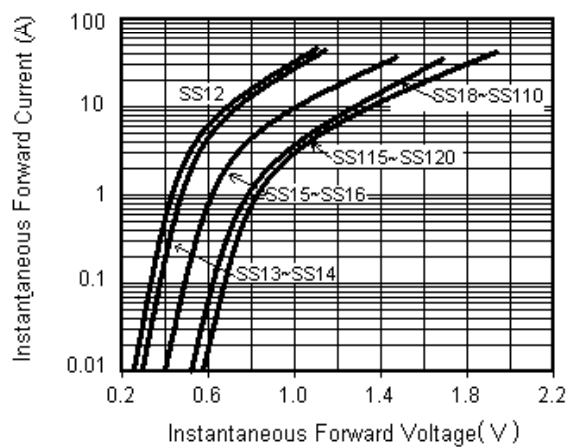
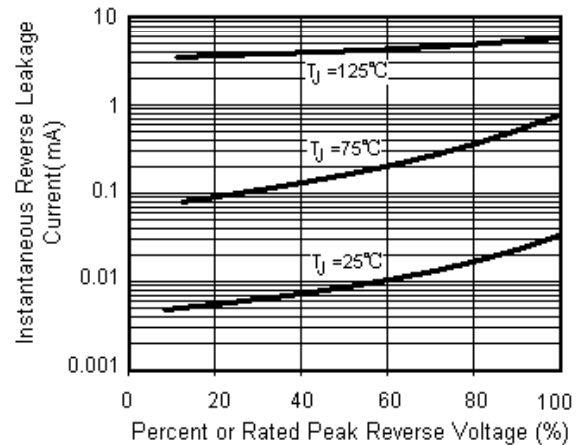
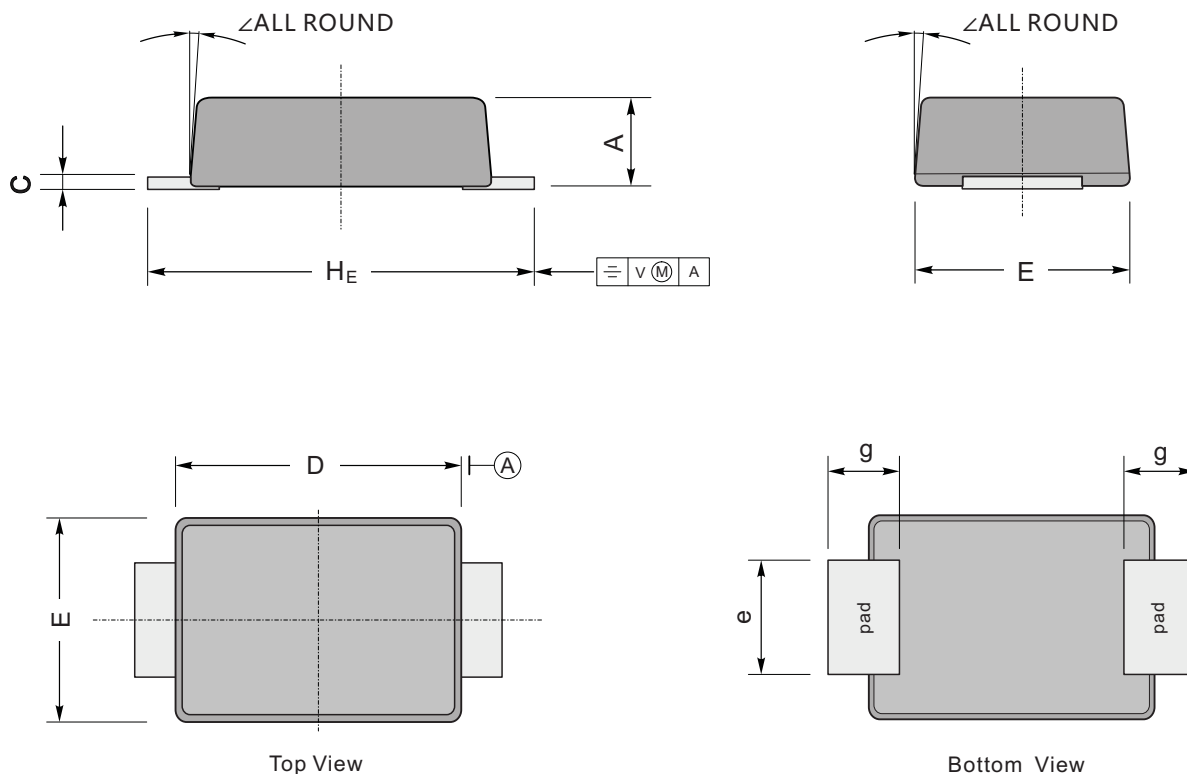


Fig.4 Typical Reverse Leakage Characteristics



Package Outline

SMAF



UNIT		A	C	D	E	e	g	H _E	∠
mm	max	1.1	0.20	3.7	2.7	1.6	1.2	4.9	7°
	min	0.9	0.12	3.3	2.4	1.3	0.8	4.4	
mil	max	43	7.9	146	106	63	47	193	
	min	35	4.7	130	94	51	31	173	

Notice

- Product is intended for use in general electronics applications.
- Product should be worked less than the ratings; if exceeded, may cause permanent damage or introduce latent failure mechanisms.
- The absolute maximum ratings are rated values and must not be exceeded during operation. The following are the general derating methods you design a circuit with a device.
 $I_{F(AV)}$: We recommend that the worst case current be no greater than 80% .
 T_J : Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a T_J of below 100°C.

- TRR is registered trademark of Zhejiang TRR Microelectronics Inc..Zhejiang TRR Microelectronics Inc. reserves the right to make changes to any product in this specification without notice.
- Zhejiang TRR Microelectronics Inc. does not assure any liability arising out of the applications or use of any product described in this specification.
- Zhejiang TRR Microelectronics Inc. advises customers to obtain the latest version of the device information before placing orders to verify that the required information is current.