

Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junctions
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- High temperature soldering:
260°C/10 seconds at terminals



SMAF



RoHS
COMPLIANT

Mechanical Date

- **Case:** JEDEC SMAF molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per JESD22-B102
- **Polarity:** Laser band denotes cathode end

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 1000 V
I_{FSM}	30 A
t_{rr}	50 nS , 75 nS
V_F	1.0 V , 1.3 V , 1.7 V
$T_j \text{ max.}$	150 °C

Maximum Ratings & Thermal Characteristics

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

Items	Symbol	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30							A
Thermal resistance from junction to lead ⁽¹⁾	$R_{\theta JL}$	35							°C/ W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							°C

Note 1: Mounted on P.C.B. with 0.28 x 0.28" (7.0 x 7.0mm) copper pad areas.

Electrical Characteristics

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

Items	Test conditions	Symbol	US1A~US1D	US1G	US1J~US1M	UNIT
Instantaneous forward voltage	$I_F = 1.0\text{ A}^{(2)}$	V_F	1.0	1.3	1.7	V
Reverse current	$V_R = V_{DC}$	I_R	$T_A = 25\text{ °C}$			μA
			$T_A = 100\text{ °C}$			
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$	t_{rr}	50		75	nS
Typical junction capacitance	4.0 V , 1MHz	C_J	15		10	pF

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

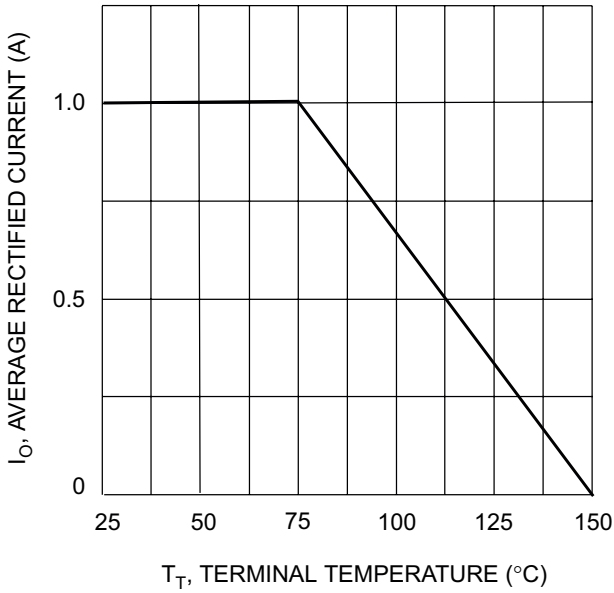


Fig. 2 Typical Forward Characteristics

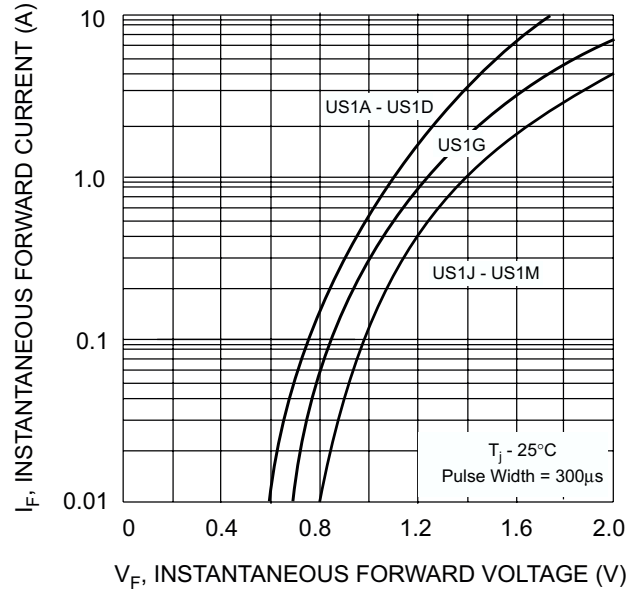


Fig. 3 Forward Surge Current Derating Curve

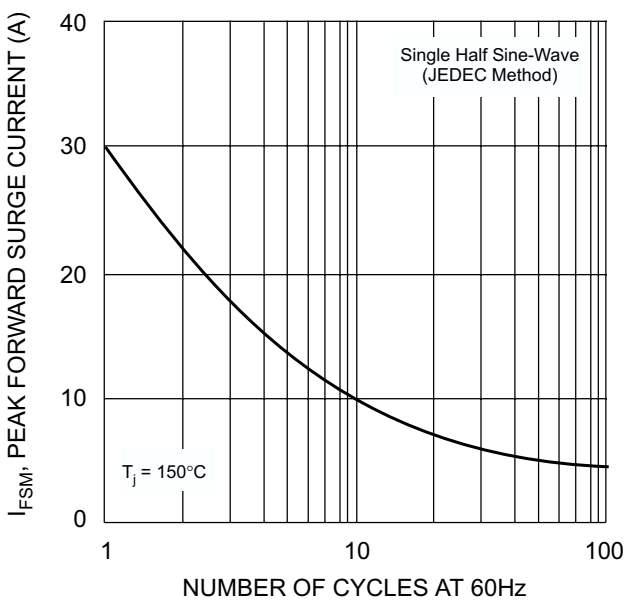
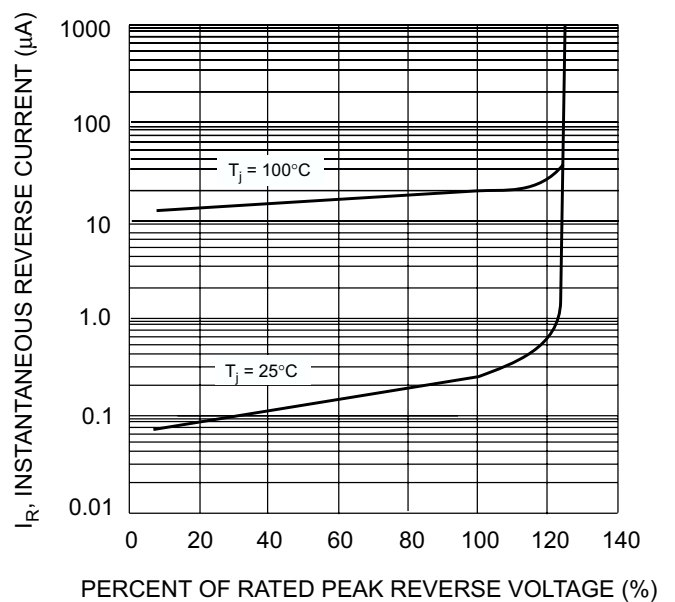
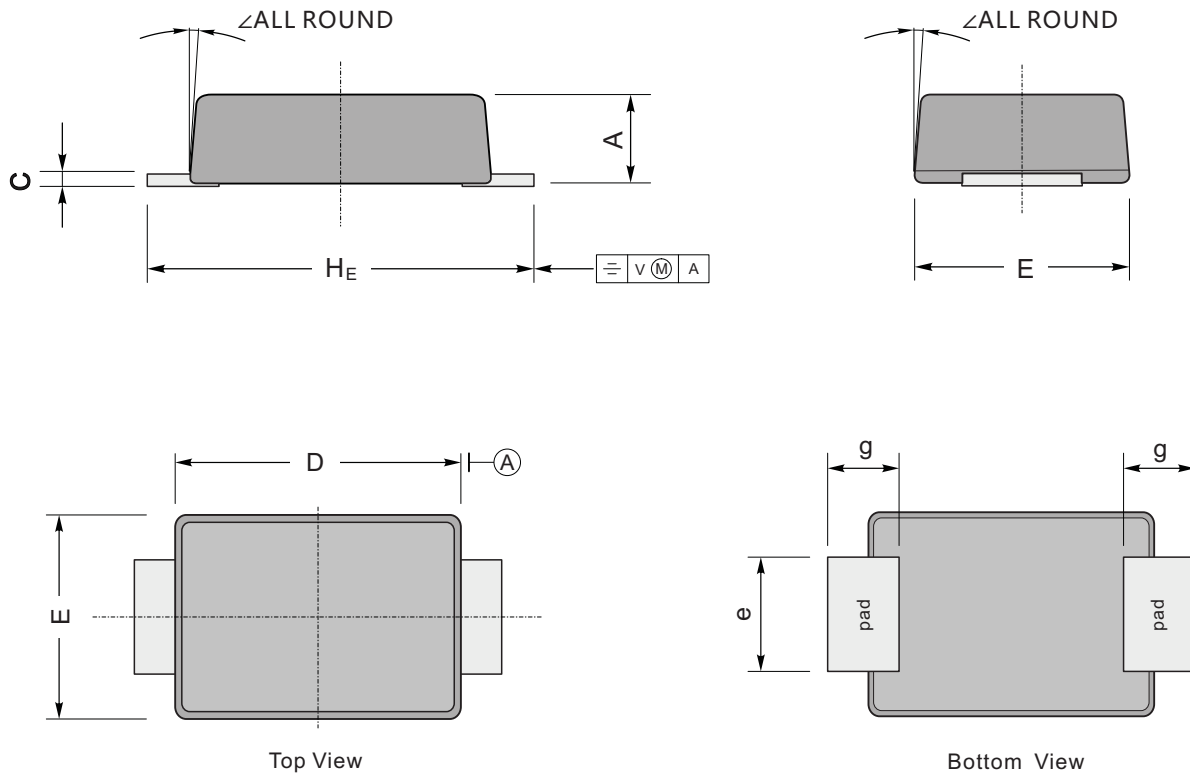


Fig. 4 Typical Reverse Characteristics



Package Outline



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 125°C.

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