

Features

- Glass passivated chip junctions
- Ideal for automated placement
- Ultrafast reverse recovery time for high efficiency
- Low profile package
- High forward surge capability
- High temperature soldering: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2002/95/1 and WEEE 2002/96/EC



SMB (DO – 214AA)

Mechanical Date

- **Case:** JEDEC DO-214AA molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per JESD22-B102
- **Polarity:** Laser band denotes cathode end

Major Ratings and Characteristics

$I_{F(AV)}$	3.0 A
V_{RRM}	50 V to 800 V
I_{FSM}	100 A
t_{rr}	35 nS
V_F	0.95 V, 1.25 V, 1.7 V
$T_j \text{ max.}$	150 °C

Maximum Ratings & Thermal Characteristics

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

Items	Symbol	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	ES3K	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	800	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	560	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	800	V
Maximum average forward rectified current	$I_{F(AV)}$	3								A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100								A
Thermal resistance from junction to lead ⁽¹⁾	$R_{\theta JL}$	25								°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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Items	Test conditions	Symbol	ES3A~D	ES3E~G	ES3J~K	UNIT
Maximum Instantaneous forward voltage	$I_F=3A^{(2)}$	V_F	0.95	1.25	1.70	V
Maximum reverse current	$V_R=V_{DC}$	I_R	$T_A=25^\circ\text{C}$			μA
			$T_A=100^\circ\text{C}$			
Reverse recovery time	$I_F=0.5A$ $I_R=1A$ $I_{rr}=0.25A$	t_{rr}	35			nS
Typical junction capacitance	4.0 V , 1MHz	C_J	45			pF

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

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

Fig.1 Forward Current Derating Curve

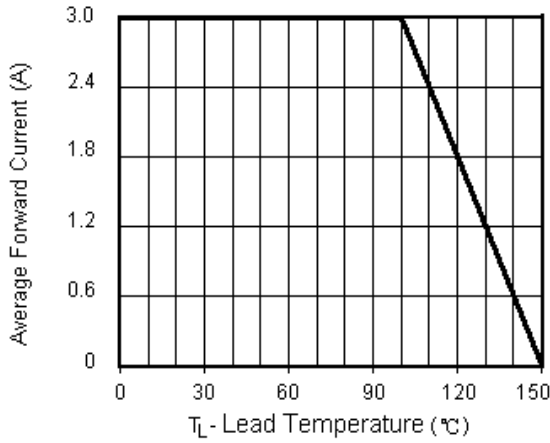


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

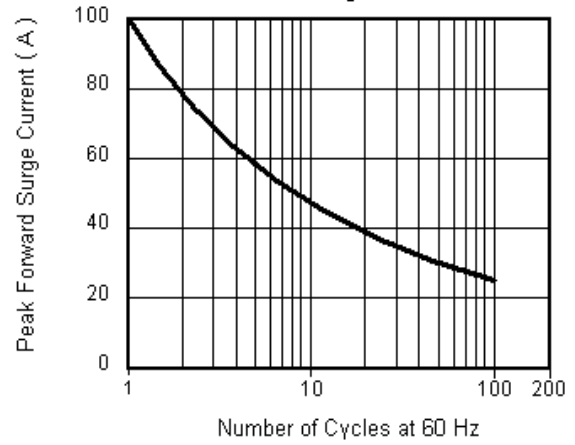


Fig.3 Typical Instantaneous Forward Characteristics

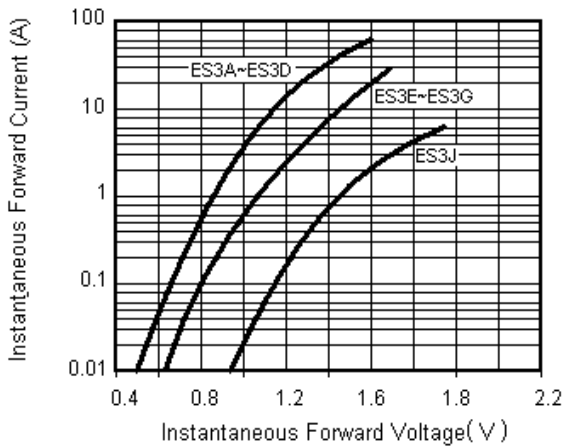
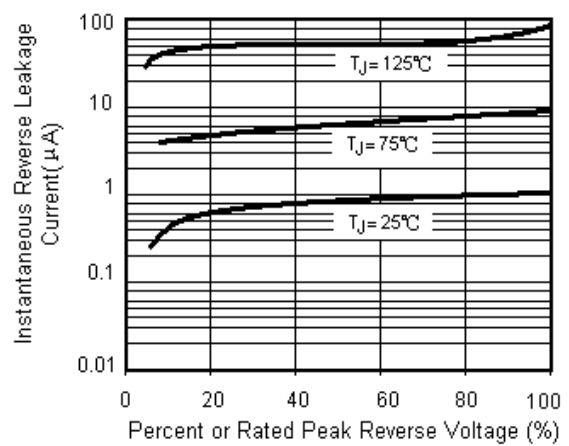
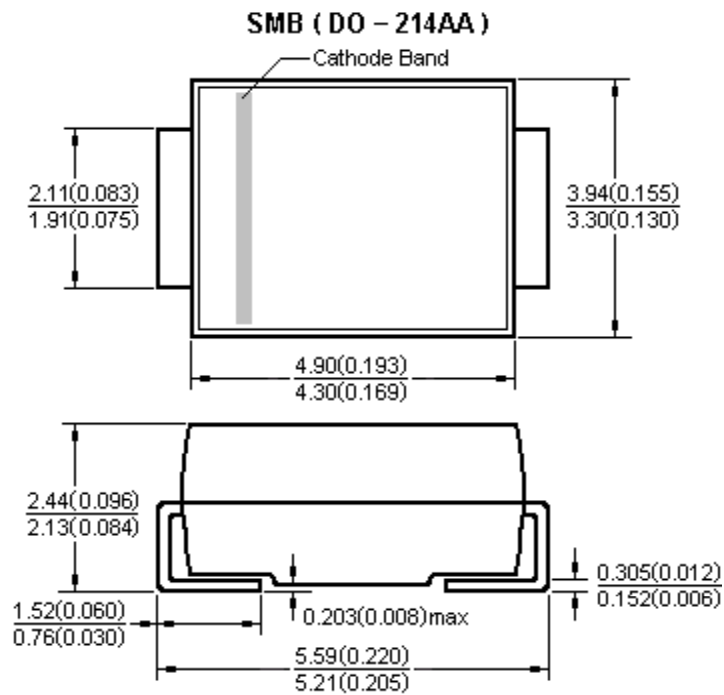


Fig.4 Typical Reverse Leakage Characteristics



Package Outline



Dimensions in millimeters and (inches)

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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