

## Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junctions
- Fast switching for high efficiency
- 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



SMA (DO - 214AC)

## Mechanical Date

- **Case:** JEDEC DO-214AC 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
$t_{rr}$	150nS, 250nS, 500nS
$V_F$	1.3 V
$T_j \text{ max.}$	150 °C

## Maximum Ratings & Thermal Characteristics

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

Items	Symbol	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	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 <sup>(1)</sup>	$R_{\theta JL}$	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 0.2 x 0.2" (5.0 x 5.0mm) copper pad areas.

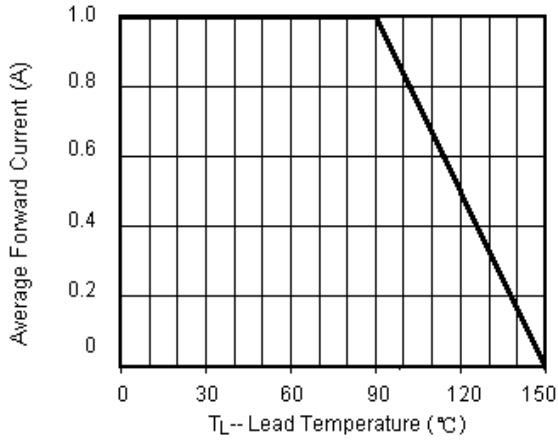
## Electrical Characteristics ( $T_A = 25\text{ °C}$ unless otherwise noted)

Items	Test conditions	Symbol	RS1A~RS1G	RS1J	RS1K~RS1M	UNIT
Instantaneous forward voltage	$I_F = 1.0\text{ A}^{(2)}$	$V_F$	1.3			V
Reverse current	$V_R = V_{DC}$	$I_R$	$T_j = 25\text{ °C}$			$\mu\text{A}$
			$T_j = 125\text{ °C}$			
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{tr} = 0.25\text{ A}$	$t_{rr}$	150	250	500	nS
Typical junction capacitance	4.0 V, 1MHz	$C_J$	11		8	pF

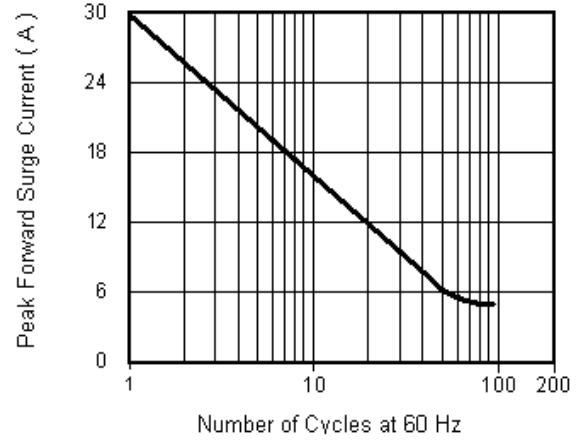
Note 2: Pulse test: 300µs pulse width, 1% duty cycle.

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

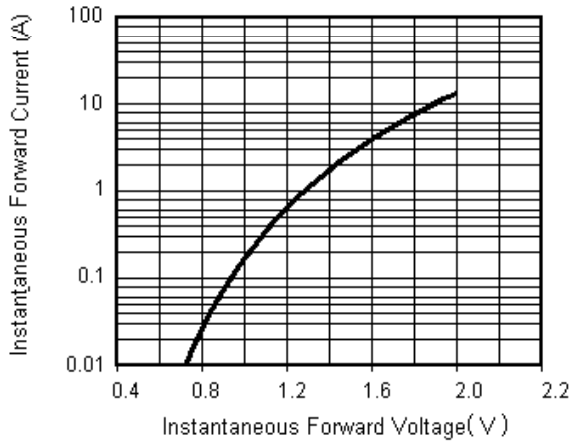
**Fig.1 Forward Current Derating Curve**



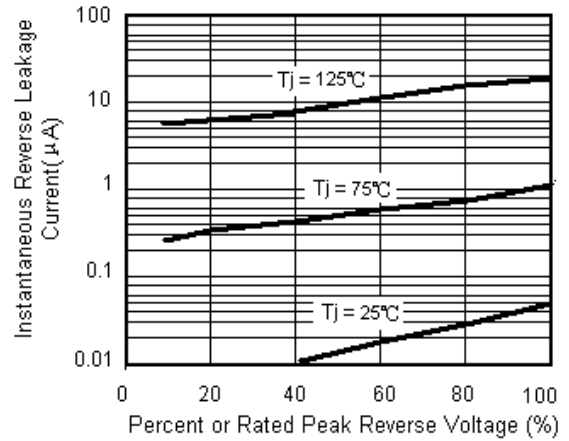
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



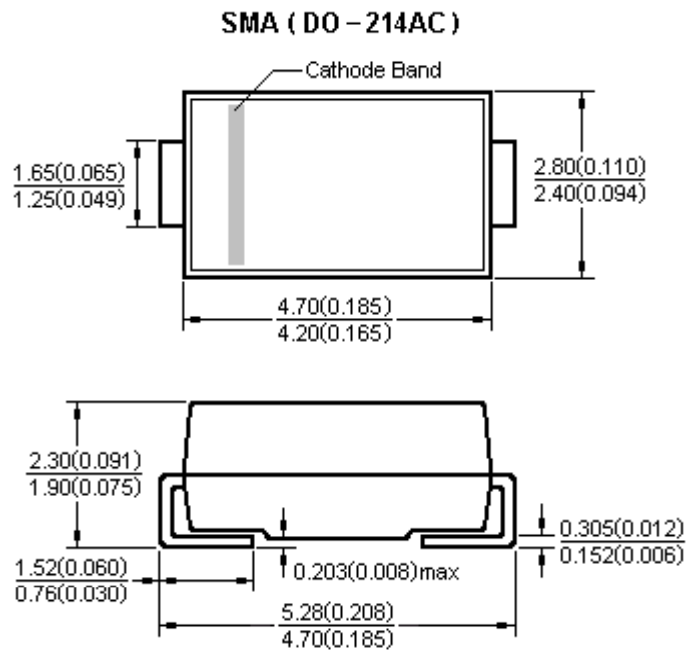
**Fig.3 Typical Instantaneous Forward Characteristics**



**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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