

## 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



SMC (DO - 214AB)

## Mechanical Date

- **Case:** JEDEC DO-214AB 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 600 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	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	300	400	600	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 <sup>(1)</sup>	$R_{\theta JL}$	20							°C/W
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150							°C

Note 1: Mounted on P.C.B. with 0.32 x 0.32" (8.0 x 8.0mm) copper pad areas.

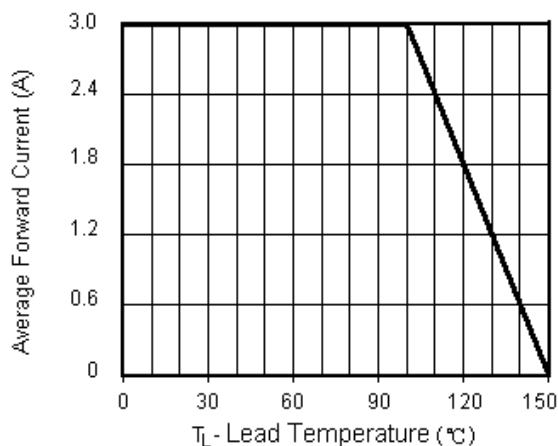
## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Items	Test conditions		Symbol	ES3A~D	ES3E~G	ES3J	UNIT
Maximum Instantaneous forward voltage	$I_F=3A^{(2)}$		$V_F$	0.95	1.25	1.70	V
Maximum reverse current	$V_R=V_{DC}$	$T_J=25^{\circ}C$	$I_R$	5			$\mu A$
		$T_J=125^{\circ}C$		50			
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

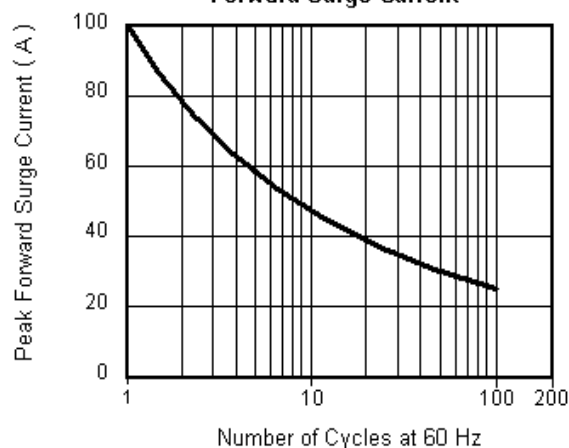
Note 2: Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle.

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

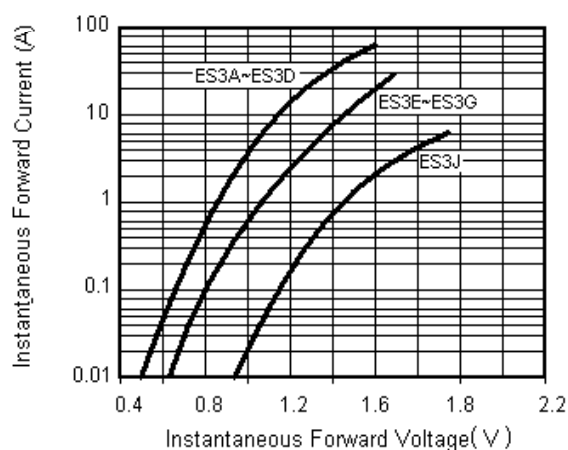
**Fig.1 Forward Current Derating Curve**



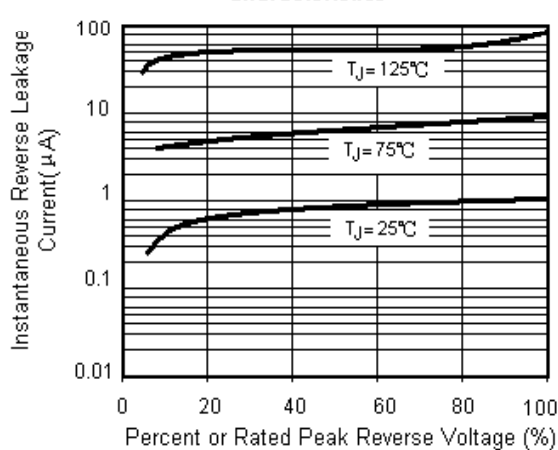
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



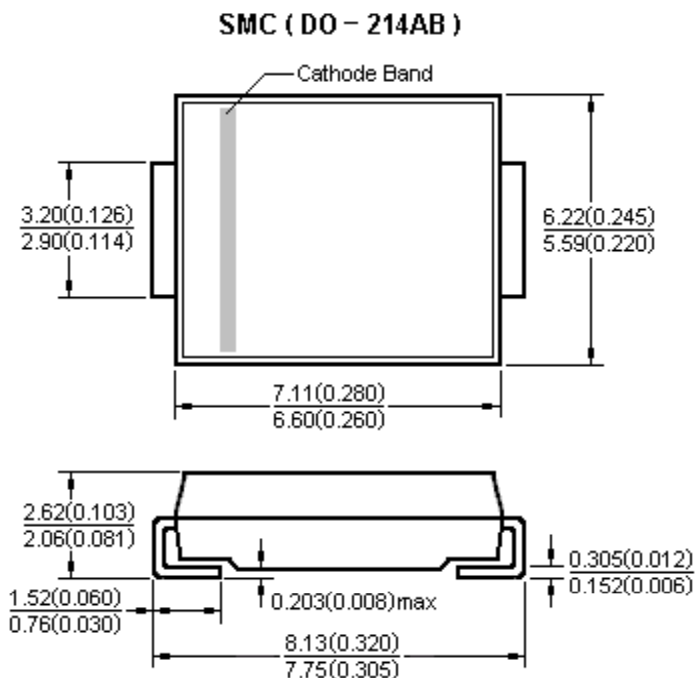
**Fig.3 Typical Instantaneous Forward Characteristics**



**Fig.4 Typical Reverse Leakage Characteristics**



**Package Outline**



Dimensions in millimeters and (inches)

Symbol	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J
MARKING	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J