

## Surface-Mount Glass Passivated Rectifier



SMC (DO-214AB)

**DESIGN SUPPORT TOOLS**
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PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
$V_{RRM}$	200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	100 A
$I_R$	5.0 $\mu$ A
$V_F$ at $I_F = 3.0$ A ( $T_A = 125$ °C)	0.85 V
$T_J$ max.	150 °C
Package	SMC (DO-214AB)
Circuit configuration	Single

**FEATURES**

- Low profile package
- Ideal for automated placement
- Glass passivated pellet chip junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

**TYPICAL APPLICATIONS**

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.

**MECHANICAL DATA**

**Case:** SMC (DO-214AB)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 2 whisker test

**Polarity:** color band denotes cathode end

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	CS3D	CS3G	CS3J	CS3K	CS3M	UNIT
Device marking code		D	G	J	K	M	
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	V
Average forward rectified current	$I_{F(AV)}^{(1)}$	2.0					A
	$I_{F(AV)}^{(2)}$	3.0					
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	100					A
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150					°C

**Notes**

(1) Free air, mounted on recommended copper pad area

(2) Mounted on 14 mm x 14 mm copper pad areas



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage	$I_F = 1.5\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	0.90	-	V
	$I_F = 3.0\text{ A}$			0.95	1.2	
	$I_F = 1.5\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$		0.77	-	
	$I_F = 3.0\text{ A}$			0.85	1.05	
Maximum DC reverse current at rated DC blocking voltage	Rated $V_R$	$T_A = 25\text{ }^\circ\text{C}$	$I_R^{(2)}$	-	10	$\mu\text{A}$
		$T_A = 125\text{ }^\circ\text{C}$		-	500	
Typical reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$		$t_{rr}$	2.8	-	$\mu\text{s}$
Typical junction capacitance	4.0 V, 1 MHz		$C_J$	26	-	pF

**Notes**

- (1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle
- (2) Pulse test: pulse width  $\leq 40\text{ ms}$

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	CS3D	CS3G	CS3J	CS3K	CS3M	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	80					$^\circ\text{C/W}$
	$R_{\theta JM}^{(2)}$	13					

**Notes**

- (1) Free air, mounted on recommended copper pad area; thermal resistance  $R_{\theta JA}$  - junction to ambient
- (2) Mounted on 14 mm x 14 mm copper pad areas,  $R_{\theta JM}$  - junction to mount at the terminal

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
CS3J-E3/I	0.211	I	3500	13" diameter plastic tape and reel

**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

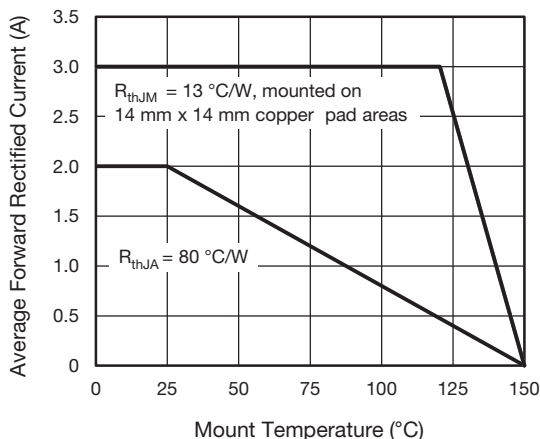


Fig. 1 - Maximum Forward Current Derating Curve

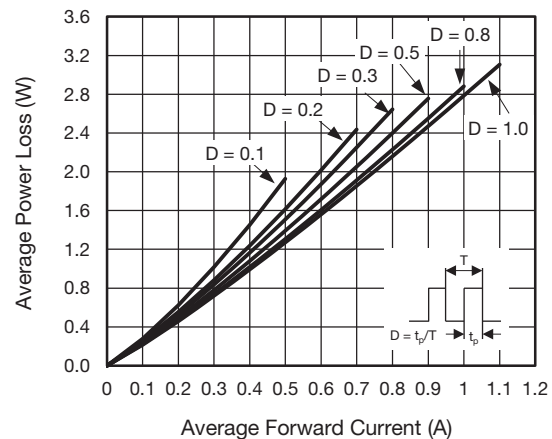


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

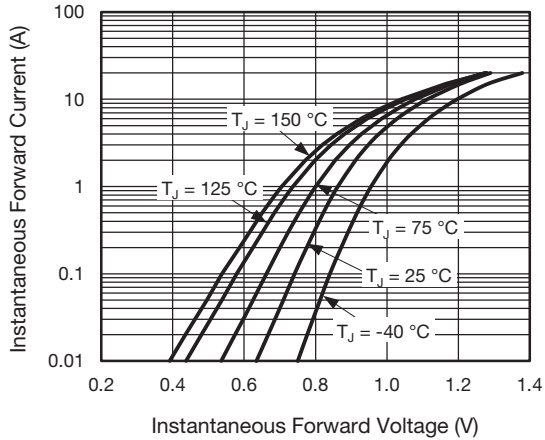


Fig. 3 - Typical Instantaneous Forward Characteristics

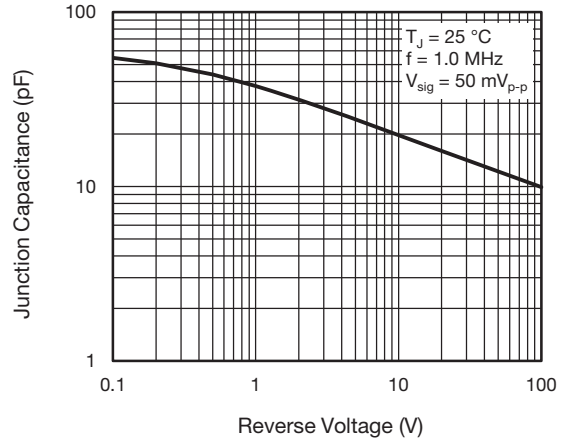


Fig. 5 - Typical Junction Capacitance

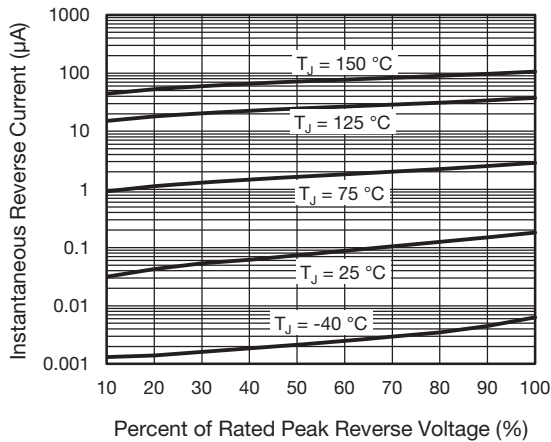


Fig. 4 - Typical Reverse Leakage Characteristics

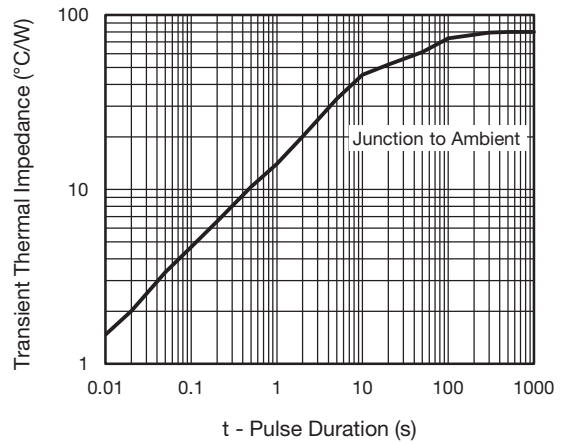
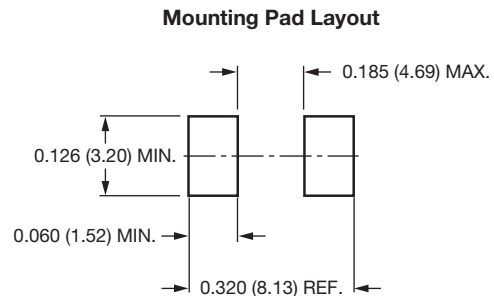
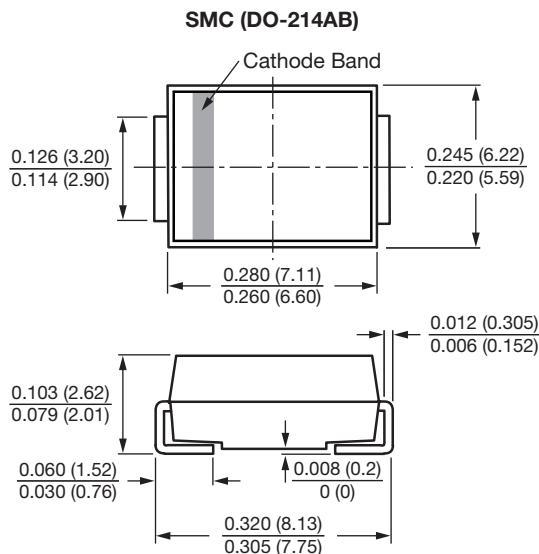


Fig. 6 - Typical Transient Thermal Impedance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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