

## Surface Mount Glass Passivated Rectifier


**DO-214AB (SMC)**

### 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

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	DO-214AB (SMC)
Diode variations	Single die

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

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

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 <sub>A</sub> = 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 <sub>RRM</sub>	200	400	600	800	1000	V
Average forward rectified current	I <sub>F(AV)</sub> <sup>(1)</sup>	2.0					A
	I <sub>F(AV)</sub> <sup>(2)</sup>	3.0					
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	100					A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-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



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage	I <sub>F</sub> = 1.5 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.90	-	V
	I <sub>F</sub> = 3.0 A			0.95	1.2	
	I <sub>F</sub> = 1.5 A	T <sub>A</sub> = 125 °C		0.77	-	
	I <sub>F</sub> = 3.0 A			0.85	1.05	
Maximum DC reverse current at rated DC blocking voltage	Rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	-	10	μA
		T <sub>A</sub> = 125 °C		-	500	
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	2.8	-	μs
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	26	-	pF

**Notes**

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	CS3D	CS3G	CS3J	CS3K	CS3M	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	80					°C/W
	R <sub>θJM</sub> <sup>(2)</sup>	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

ORDERING INFORMATION (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

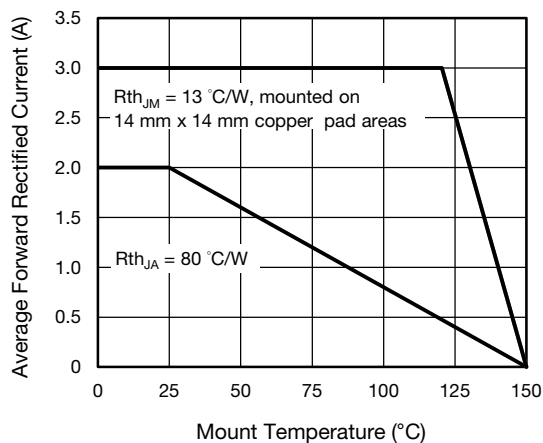
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

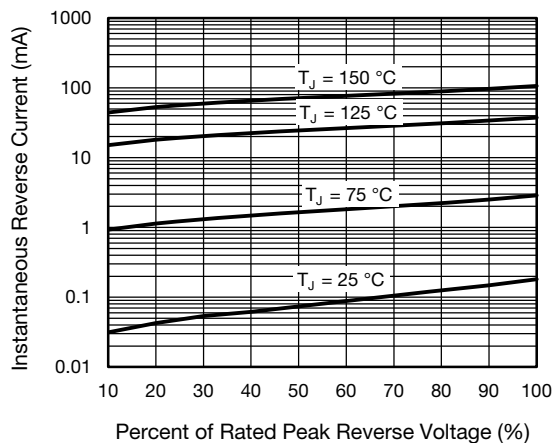


Fig. 4 - Typical Reverse Leakage Characteristics

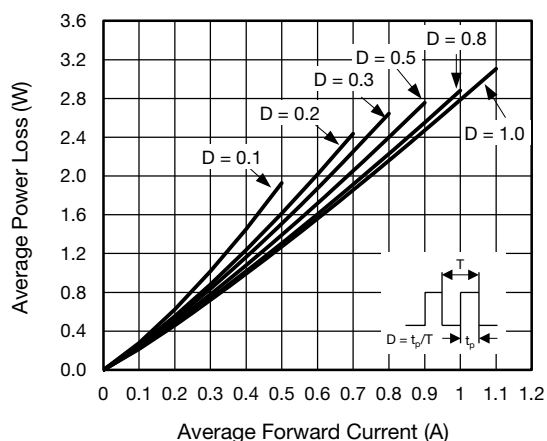


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

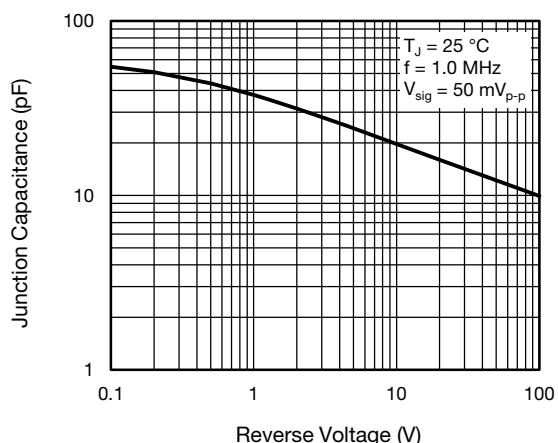


Fig. 5 - Typical Junction Capacitance

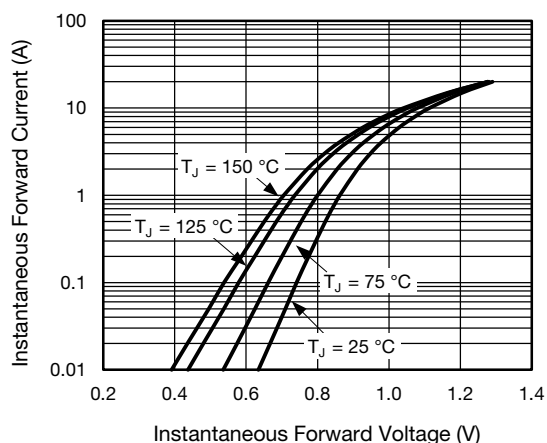


Fig. 3 - Typical Instantaneous Forward Characteristics

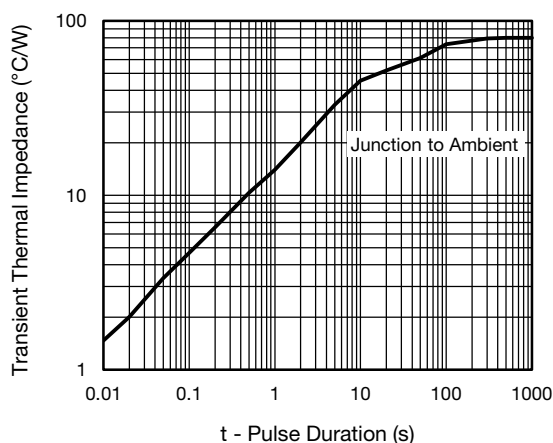
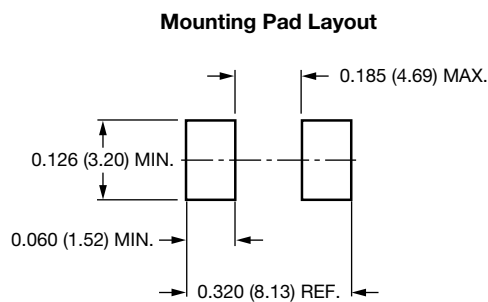
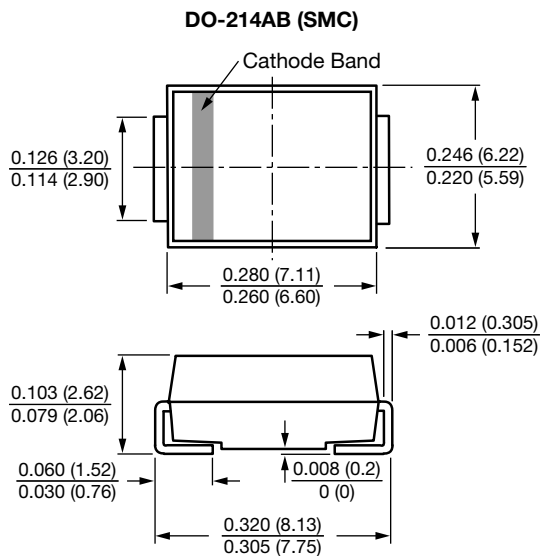


Fig. 6 - Typical Transient Thermal Impedance



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





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