

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 μ 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


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



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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	μA
		$T_A = 125\text{ }^\circ\text{C}$		-	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	-	μs
Typical junction capacitance	4.0 V, 1 MHz		C_J	26	-	pF

Notes

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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

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)

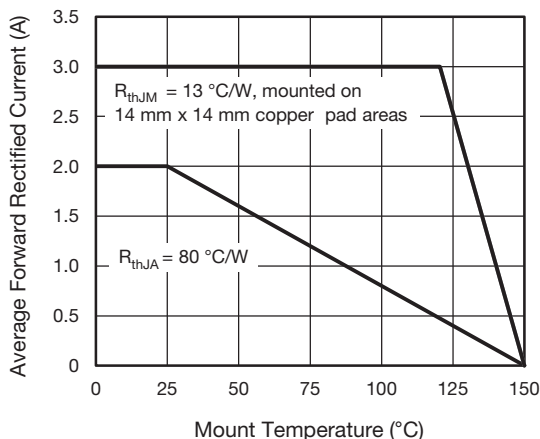


Fig. 1 - Maximum Forward Current Derating Curve

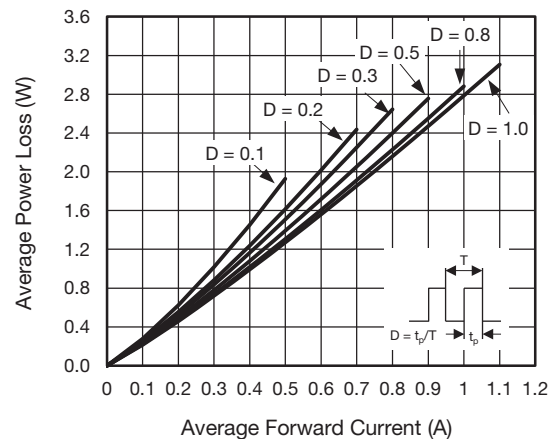


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

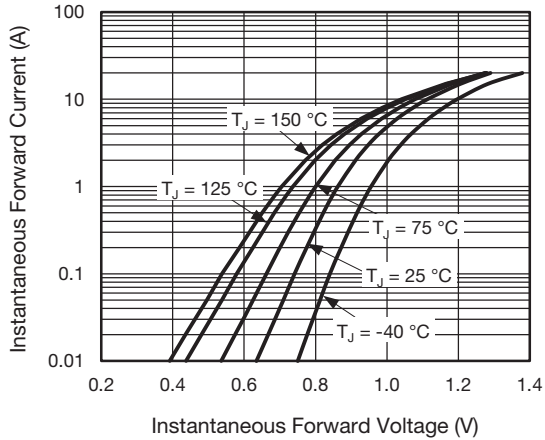


Fig. 3 - Typical Instantaneous Forward Characteristics

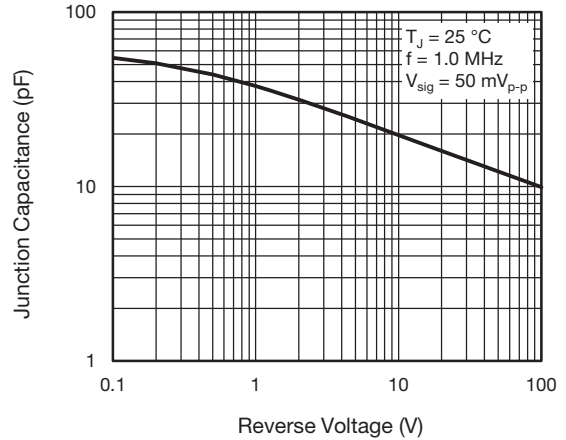


Fig. 5 - Typical Junction Capacitance

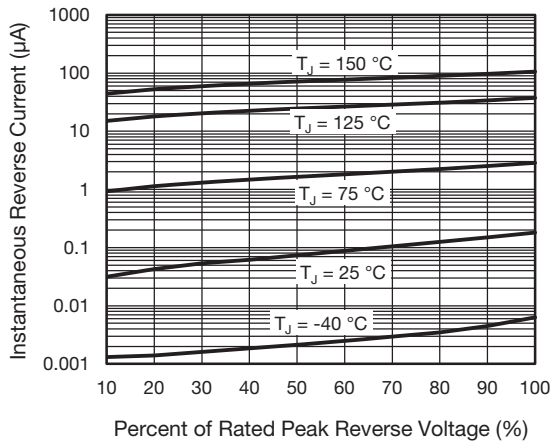


Fig. 4 - Typical Reverse Leakage Characteristics

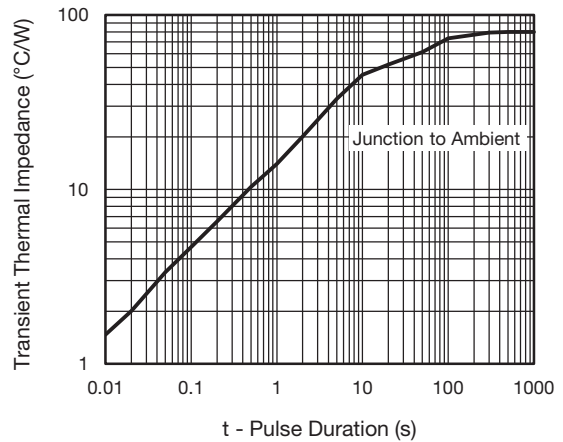
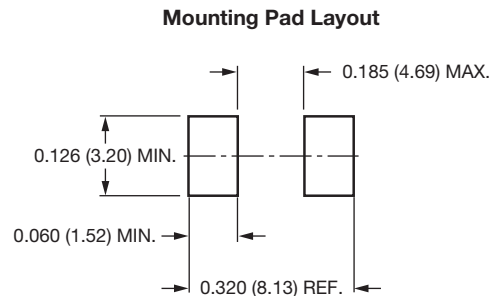
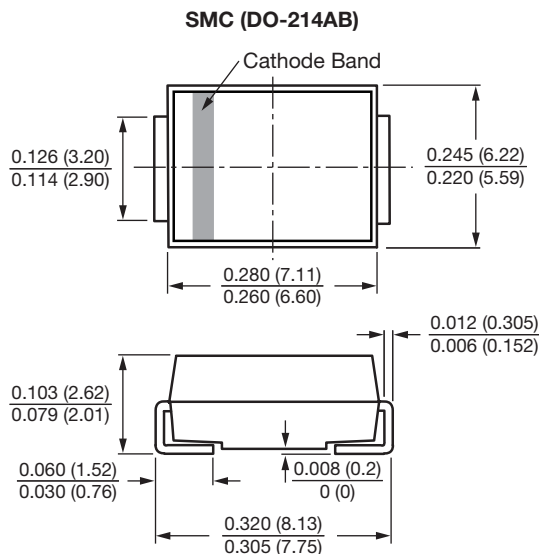


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9