

Surface Mount Glass Passivated Rectifier


DO-214AA (SMB)

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: DO-214AA (SMB)

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	200 V, 400 V, 600 V, 800 V, 1000 V
I_{FSM}	50 A
I_R	5.0 μ A
V_F at $I_F = 2.0$ A ($T_A = 125$ °C)	0.90 V
T_J max.	150 °C
Package	DO-214AA (SMB)
Diode variations	Single die

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	CS2D	CS2G	CS2J	CS2K	CS2M	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	$I_{F(AV)}^{(1)}$	1.6					A
	$I_{F(AV)}^{(2)}$	2.0					
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50					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 8 mm x 8 mm copper pad areas

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Maximum instantaneous forward voltage	$I_F = 1.0 \text{ A}$	$T_A = 25^\circ\text{C}$	V_F ⁽¹⁾	0.92	-	V	
	$I_F = 2.0 \text{ A}$			0.99	1.2		
	$I_F = 1.0 \text{ A}$	$T_A = 125^\circ\text{C}$		0.81	-		
	$I_F = 2.0 \text{ A}$			0.90	0.98		
Maximum DC reverse current at rated DC blocking voltage	Rated V_R	$T_A = 25^\circ\text{C}$	I_R ⁽²⁾	-	5.0	μA	
		$T_A = 125^\circ\text{C}$		-	350		
Typical reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$		t_{rr}	2.1	-	μs	
Typical junction capacitance	4.0 V, 1 MHz		C_J	12	-	pF	

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: pulse width $\leq 40 \text{ ms}$

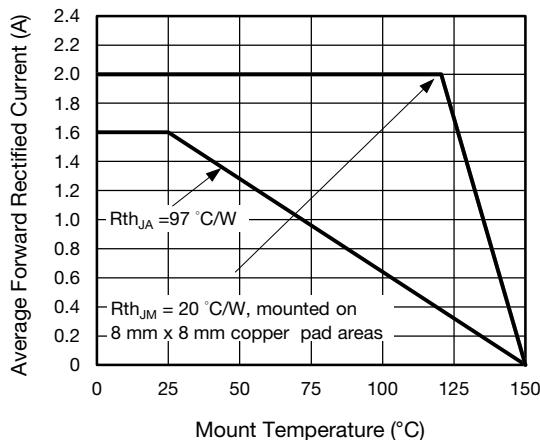
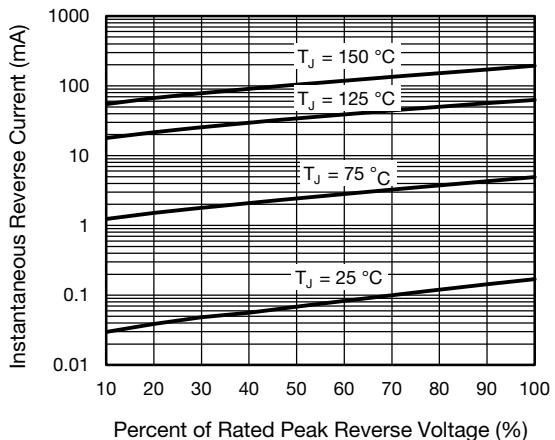
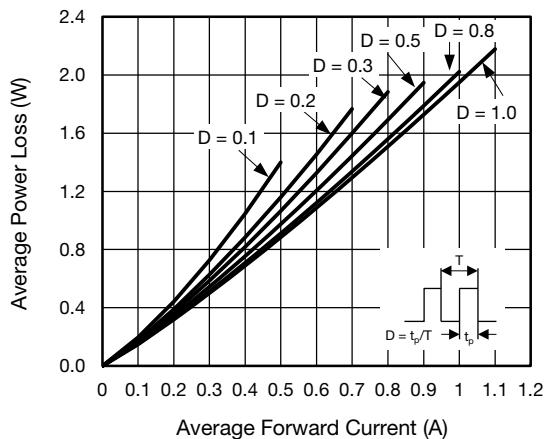
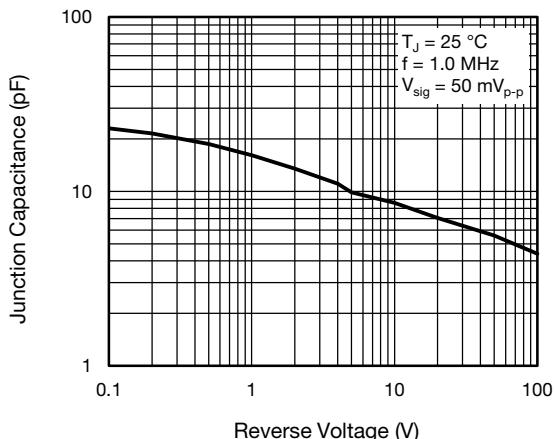
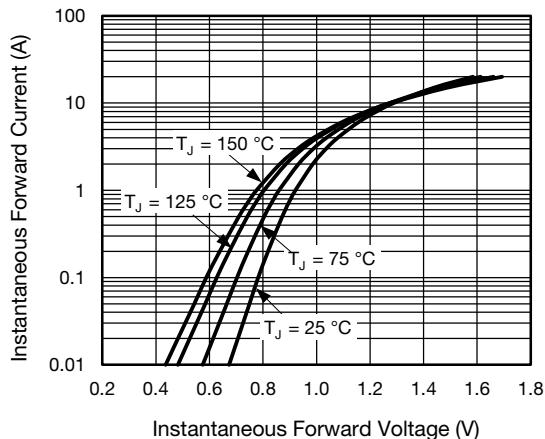
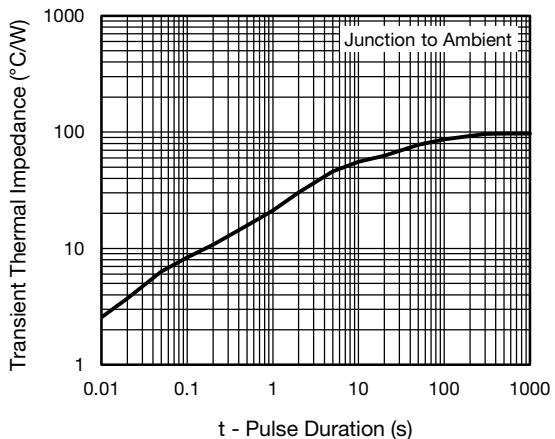
THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	CS2D	CS2G	CS2J	CS2K	CS2M	UNIT
Typical thermal resistance	$R_{0,JA}$ ⁽¹⁾	97		$^{\circ}\text{C/W}$			
	$R_{0,JM}$ ⁽²⁾	20					

Notes

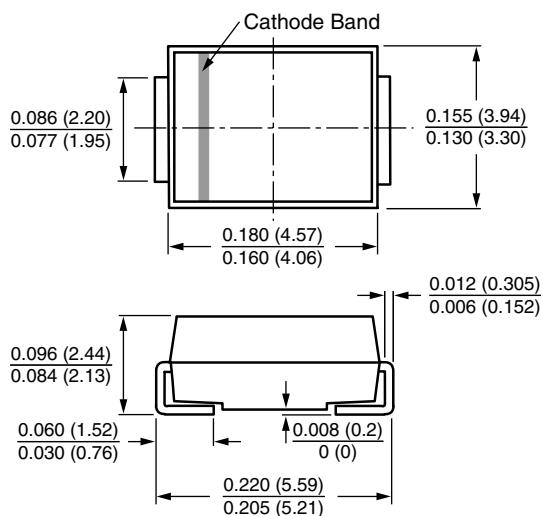
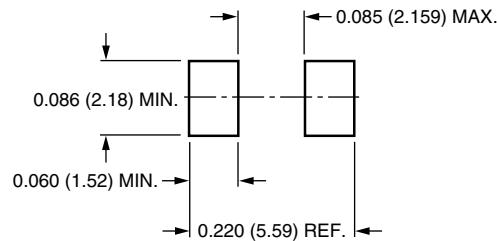
(1) Free air, mounted on recommended copper pad area; thermal resistance $R_{0,JA}$ - junction to ambient

(2) Mounted on 8 mm x 8 mm copper pad areas, $R_{0,JM}$ - junction to mount at the terminal

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
CS2J-E3/I	0.096	I	3200	13" diameter plastic tape and reel

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

DO-214AA (SMB)

Mounting Pad Layout


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