Surface Mount Glass Passivated Rectifier



DO-214AC (SMA)

PRIMARY CHARACTERISTICS						
I _{F(AV)}	1.0 A					
V _{RRM}	200 V, 400 V, 600 V, 800 V, 1000 V					
I _{FSM}	30 A					
I _R	5.0 μA					
V_F at $I_F = 1.0$ A $(T_A = 125 ^{\circ}C)$	0.98 V					
T _J max.	150 °C					
Package	DO-214AC (SMA)					
Diode variations	Single die					

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

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-214AC (SMA)

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	CS1D	CS1G	CS1J	CS1K	CS1M	UNIT
Device marking code		D	G	J	K	М	
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	800	1000	V
Average forward rectified current	I _{F(AV)} (1)	1.0			Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	30			А		
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150				°C	

Note

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

CS1D, CS1G, CS1J, CS1K, CS1M

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT		
Maximum instantaneous forward voltage	I _F = 0.5 A	T _A = 25 °C	- V _F ⁽¹⁾	0.93	-	V		
	I _F = 1.0 A	1 _A = 25 C		1.0	1.12			
	I _F = 0.5 A	T 105 °C		0.82	-			
	I _F = 1.0 A	$T_A = 125 ^{\circ}C$		0.90	0.98			
Maximum DC reverse current at rated DC blocking voltage	Rated V _R	T _A = 25 °C	I _R ⁽²⁾	-	5.0	μА		
	nateu v _R	T _A = 125 °C	IR ^(−)	-	300			
Typical reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	1.5	-	μs		
Typical junction capacitance	4.0 V, 1 MHz		CJ	6	-	pF		

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: pulse width \leq 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	CS1D	CS1G	CS1J	CS1K	CS1M	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	105					°C/W
Typical thermal resistance	R _{0JM} (2)	30					C/VV

Notes

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

 $^{(2)}$ Mounted on 5 mm x 5 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				
CS1J-E3/I	0.064	1	7500	13" diameter plastic tape and reel				

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

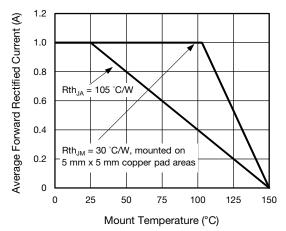


Fig. 1 - Maximum Forward Current Derating Curve

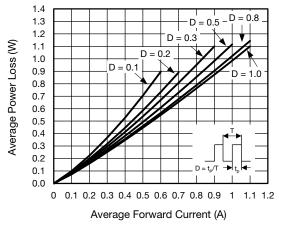


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

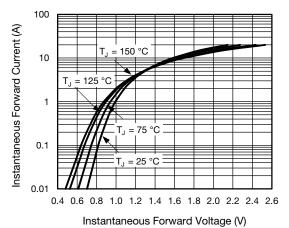


Fig. 3 - Typical Instantaneous Forward Characteristics

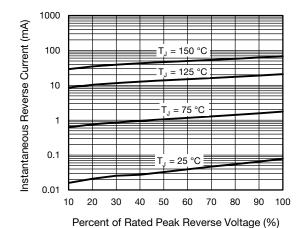


Fig. 4 - Typical Reverse Leakage Characteristics

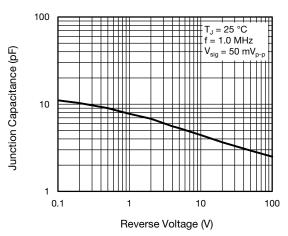


Fig. 5 - Typical Junction Capacitance

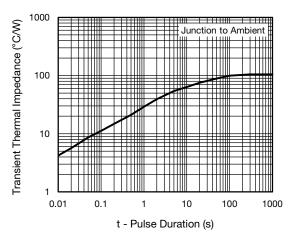


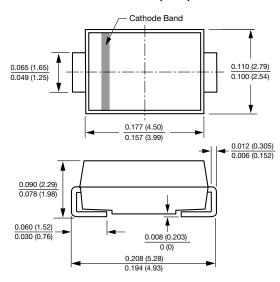
Fig. 6 - Typical Transient Thermal Impedance



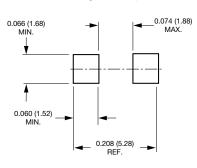
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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