



Surface Mount Glass Passivated Rectifier

**DO-214AC (SMA)****RoHS**
COMPLIANT
HALOGEN
FREE**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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
I_{FSM}	40 A, 30 A
E_{AS}	5 mJ
I_R	1.0 μ A, 5.0 μ A
V_F	1.1 V
T_J max.	150 °C
Package	DO-214AC (SMA)
Diode variations	Single die

MECHANICAL DATA**Case:** DO-214AC (SMA)Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end**TYPICAL APPLICATIONS**

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

MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	S1A	S1B	S1D	S1G	S1J	S1K	S1M	UNIT
Device marking code		SA	SB	SD	SG	SJ	SK	SM	
Max. recurrent peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Max. RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Max. DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Max. average forward rectified current (fig. 1)	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40					30		A
Non-repetitive peak reverse avalanche energy at 25 °C, $I_{AS} = 1\text{ A}$, $L = 10\text{ mH}$	E_{AS}	5							mJ
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							°C



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	S1A	S1B	S1D	S1G	S1J	S1K	S1M	UNIT
Max. instantaneous forward voltage	1.0 A	V_F	1.1							V
Max. DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$	I_R	1.0					5.0		μA
	$T_A = 125\text{ }^\circ\text{C}$		50							
Typical reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$	t_{rr}	1.8				μs			
Typical junction capacitance	4.0 V, 1 MHz	C_J	12							pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	S1A	S1B	S1D	S1G	S1J	S1K	S1M	UNIT	
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$	75					85		$^\circ\text{C/W}$	
	$R_{\theta JL}$	27					30			

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
S1J-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel
S1J-M3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel

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

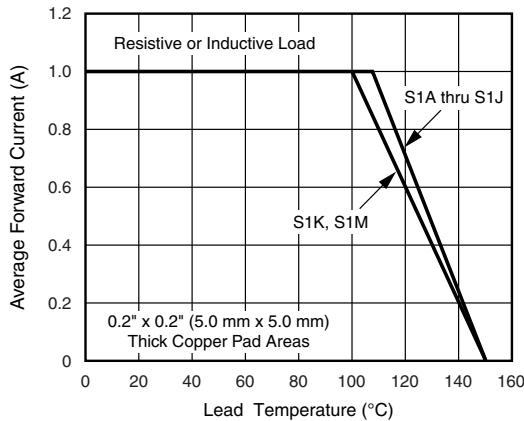


Fig. 1 - Forward Current Derating Curve

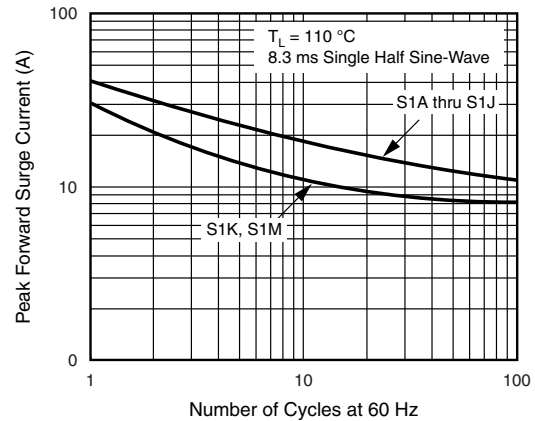


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

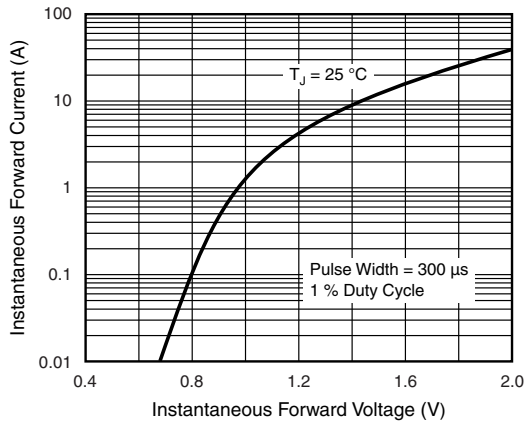


Fig. 3 - Typical Instantaneous Forward Characteristics

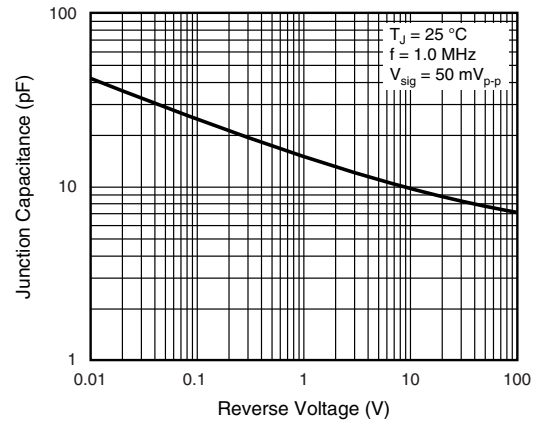


Fig. 5 - Typical Junction Capacitance

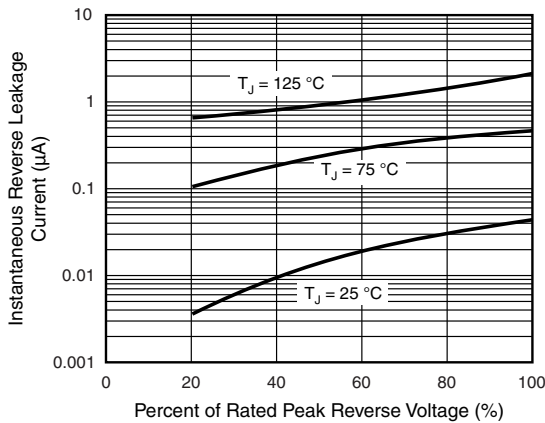


Fig. 4 - Typical Reverse Leakage Characteristics

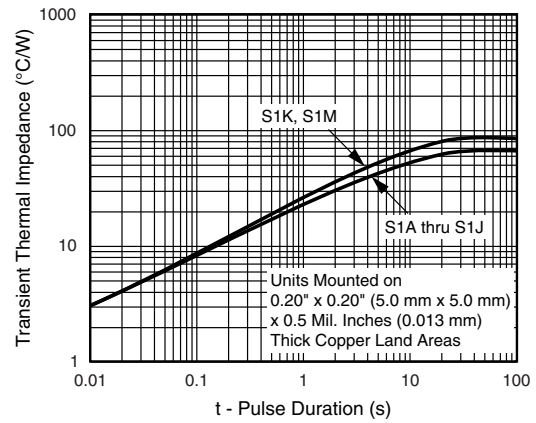
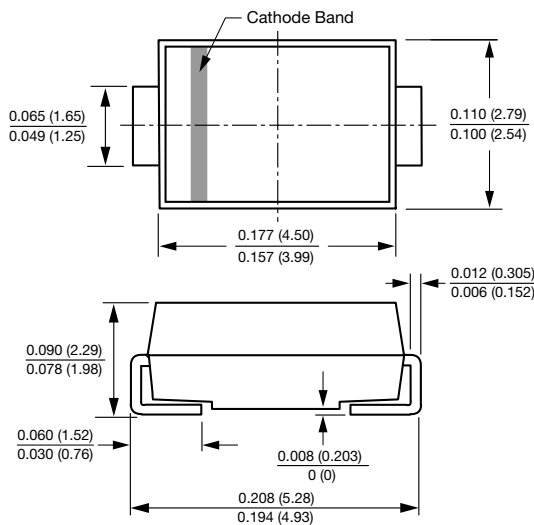


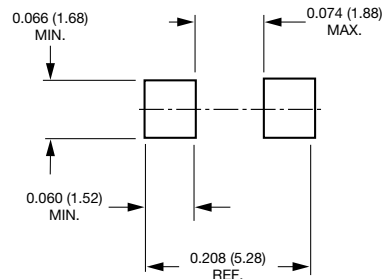
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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