

Low V_F Surface Mount Schottky Rectifier


DO-214AC (SMA)

FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Very low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage, high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-214AC (SMA)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-E3 - RoHS-compliant, commercial grade
 Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified
 Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified (“_X” denotes revision code e.g. A, B,))

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.5 A
V_{RRM}	20 V, 30 V
I_{FSM}	50 A
V_F	0.34 V
$T_J \text{ max.}$	125 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	SL12	SL13	UNIT
Device marking code		SL2	SL3	
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	V
Maximum RMS voltage	V_{RMS}	14	21	V
Maximum DC blocking voltage	V_{DC}	20	30	V
Maximum average forward rectified current at $T_L = 105$ °C (fig. 1)	$I_{F(AV)}$	1.5		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50		A
Voltage rate of change (rated V_R)	dV/dt	10 000		V/ μ s
Operating junction temperature range	T_J	- 55 to + 125		°C
Storage temperature range	T_{STG}	- 55 to + 150		°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SL12	SL13	UNIT
Maximum instantaneous forward voltage at ⁽¹⁾	$I_F = 0.1\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$	V_F	0.230		V
		$T_A = 25\text{ }^\circ\text{C}$		0.360		
	$I_F = 1.0\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$		0.340		
		$T_A = 25\text{ }^\circ\text{C}$		0.445		
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾			I_R	0.2		mA
				6.0		

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SL12	SL13	UNIT
Maximum thermal resistance ⁽¹⁾	$R_{\theta JA}$	88		$^\circ\text{C/W}$
	$R_{\theta JL}$	28		

Note
⁽¹⁾ P.C.B. mounted on 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
SL13-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SL13-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
SL13HE3/61T ⁽¹⁾	0.064	61T	1800	7" diameter plastic tape and reel
SL13HE3/5AT ⁽¹⁾	0.064	5AT	7500	13" diameter plastic tape and reel
SL13HE3_A/H ⁽¹⁾	0.064	H	1800	7" diameter plastic tape and reel
SL13HE3_A/I ⁽¹⁾	0.064	I	7500	13" diameter plastic tape and reel

Note
⁽¹⁾ AEC-Q101 qualified

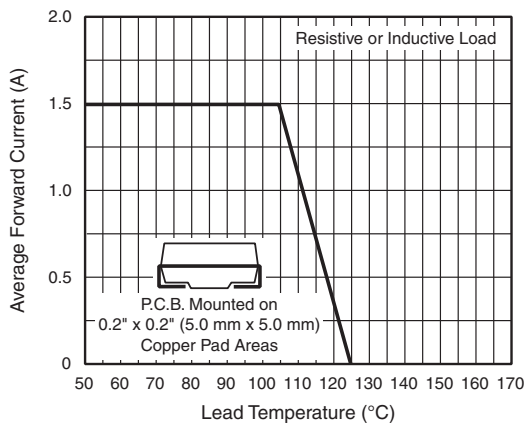
RATINGS AND CHARACTERISTICS CURVES
 $(T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

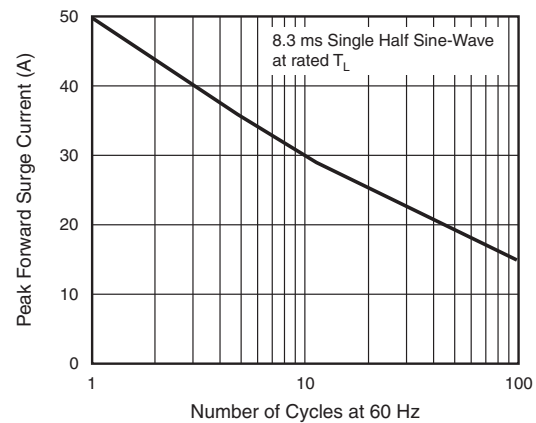


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

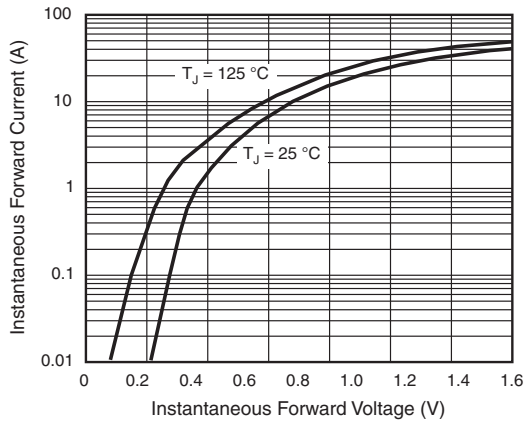


Fig. 3 - Typical Instantaneous Forward Characteristics

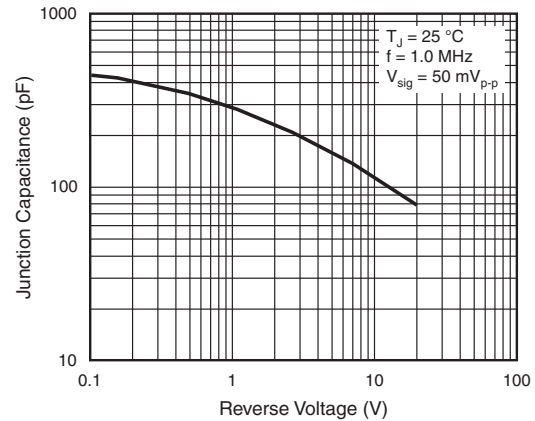


Fig. 5 - Typical Junction Capacitance

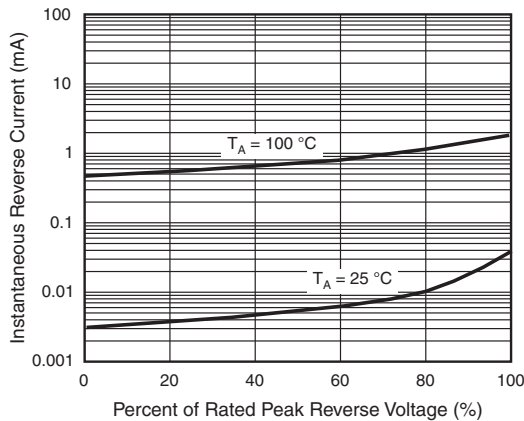
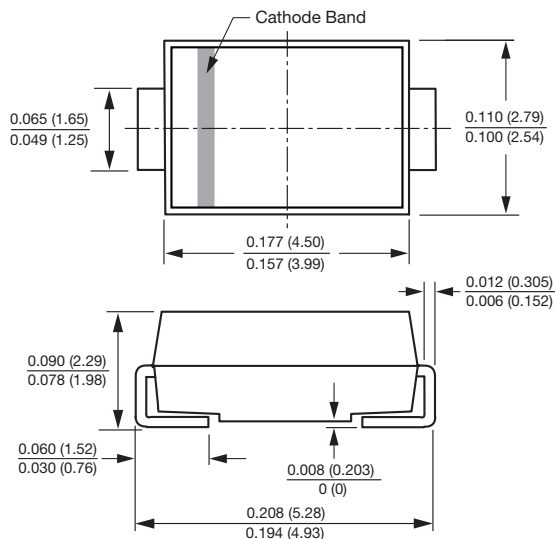


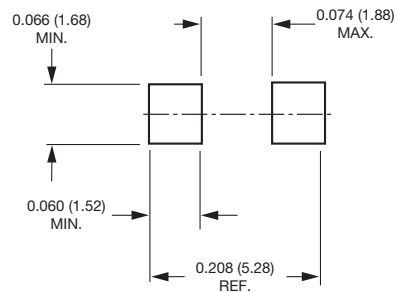
Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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