

## 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](http://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\_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 2 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
Package	DO-214AC (SMA)
Diode variations	Single

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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 $T_L = 105\text{ °C}$ (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/ $\mu$ s
Operating junction temperature range	$T_J$	-55 to +125		°C
Storage temperature range	$T_{STG}$	-55 to +150		°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SL12	SL13	UNIT
Maximum instantaneous forward voltage at <sup>(1)</sup>	I <sub>F</sub> = 0.1 A	T <sub>A</sub> = 125 °C	V <sub>F</sub>	0.230		V
		T <sub>A</sub> = 25 °C		0.360		
	I <sub>F</sub> = 1.0 A	T <sub>A</sub> = 125 °C		0.340		
		T <sub>A</sub> = 25 °C		0.445		
Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup>			I <sub>R</sub>	0.2		mA
				6.0		

**Note**
<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SL12	SL13	UNIT
Maximum thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	88		°C/W
	R <sub>θJL</sub>	28		

**Note**
<sup>(1)</sup> PCB mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

<b>ORDERING INFORMATION</b> (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_B/H <sup>(1)</sup>	0.064	H	1800	7" diameter plastic tape and reel
SL13HE3_B/I <sup>(1)</sup>	0.064	I	7500	13" diameter plastic tape and reel

**Note**
<sup>(1)</sup> AEC-Q101 qualified

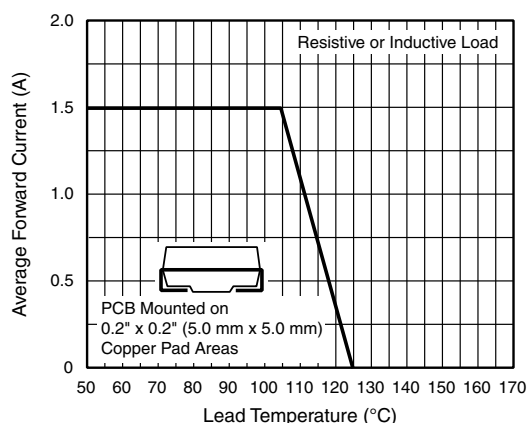
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

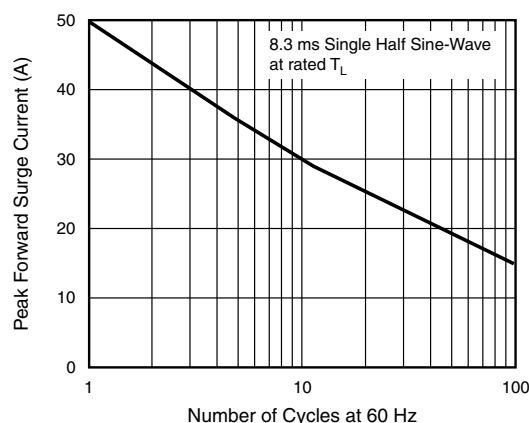


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

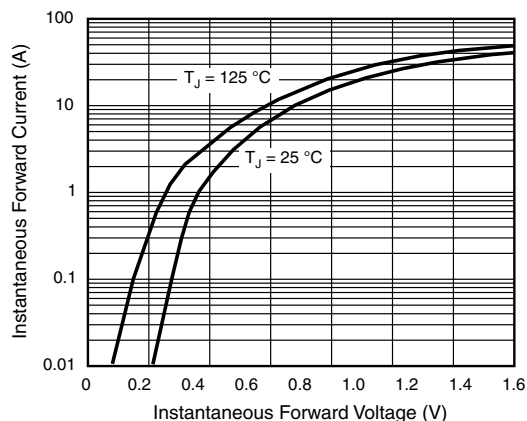


Fig. 3 - Typical Instantaneous Forward Characteristics

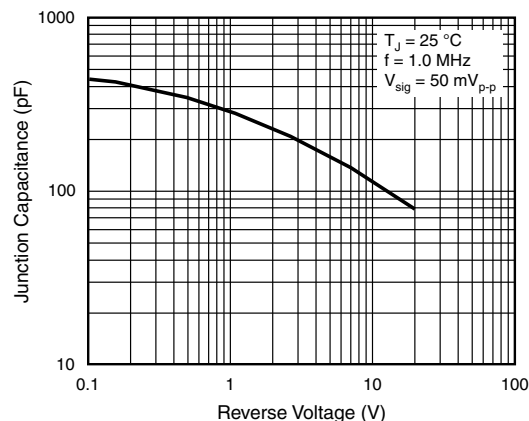


Fig. 5 - Typical Junction Capacitance

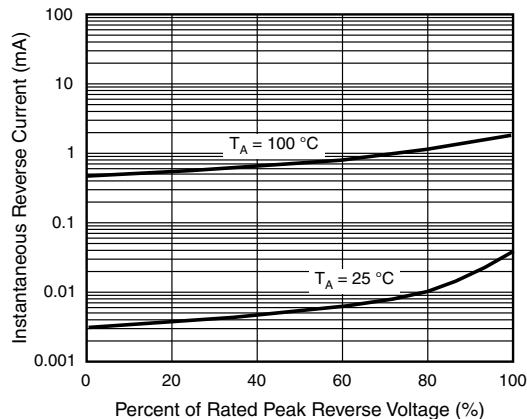
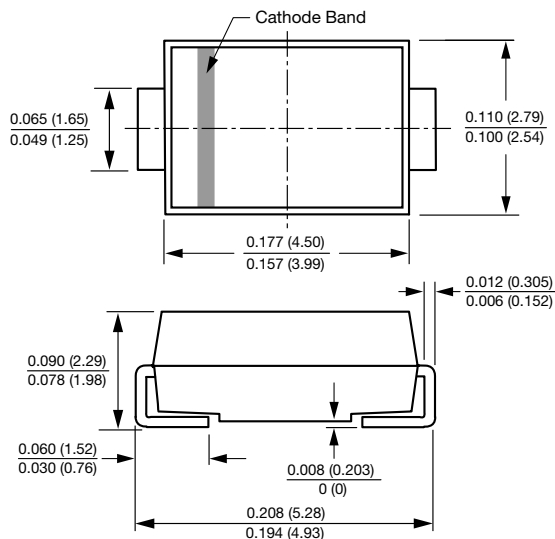


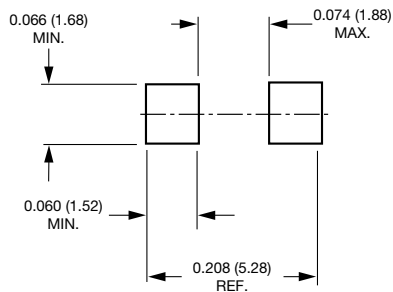
Fig. 4 - Typical Reverse Characteristics

# **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

## **DO-214AC (SMA)**



## **Mounting Pad Layout**





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