



# THE DATASHEET OF SL13-M3/5AT



## Low $V_F$ Surface-Mount Schottky Rectifier


**SMA (DO-214AC)**

Cathode Anode

### 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
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
 COMPLIANT  
 HALOGEN  
**FREE**

### LINKS TO ADDITIONAL RESOURCES



3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.5 A
$V_{RRM}$	20 V, 30 V
$I_{FSM}$	50 A
$V_F$	0.34 V
$T_J$ max.	125 °C
Package	SMA (DO-214AC)
Circuit configuration	Single

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** SMA (DO-214AC)

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 2 whisker test

**Polarity:** color band denotes the cathode end

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 ( $T_A = 25\text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SL12	SL13	UNIT
Maximum instantaneous forward voltage	$I_F = 0.1\text{ A}$	$T_A = 125\text{ °C}$	$V_F$ <sup>(1)</sup>	0.230		V
		$T_A = 25\text{ °C}$		0.360		
	$I_F = 1.0\text{ A}$	$T_A = 125\text{ °C}$		0.340		
		$T_A = 25\text{ °C}$		0.445		
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ °C}$		$I_R$ <sup>(1)</sup>	0.2		mA
	$T_A = 100\text{ °C}$			6.0		

#### Note

<sup>(1)</sup> Pulse test: 300  $\mu$ s 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	$R_{\theta JA}^{(1)}$	88		$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$	28		

**Note**

(1) PCB 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-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SL13-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)**

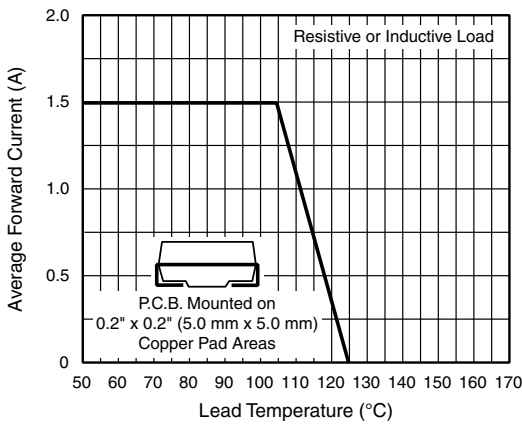


Fig. 1 - Forward Current Derating Curve

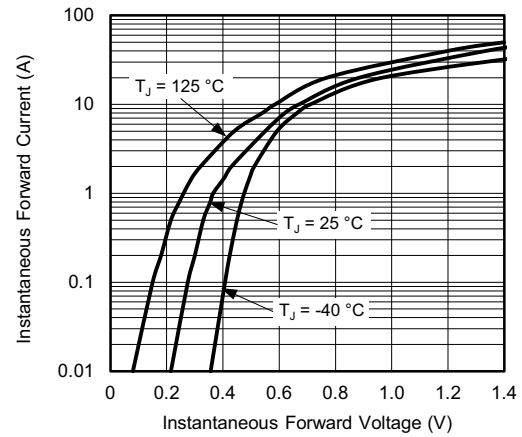


Fig. 3 - Typical Instantaneous Forward Characteristics

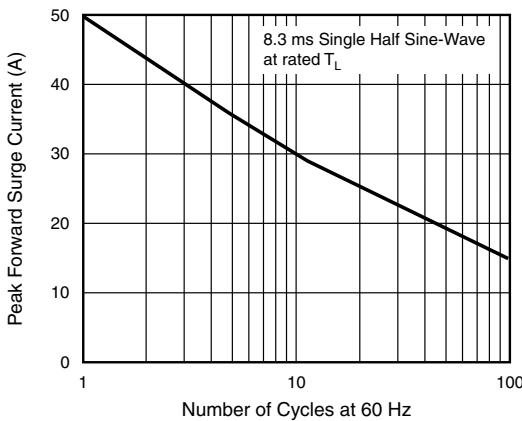


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

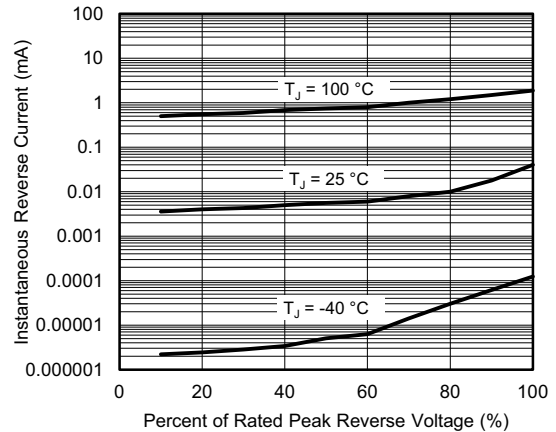


Fig. 4 - Typical Reverse Characteristics

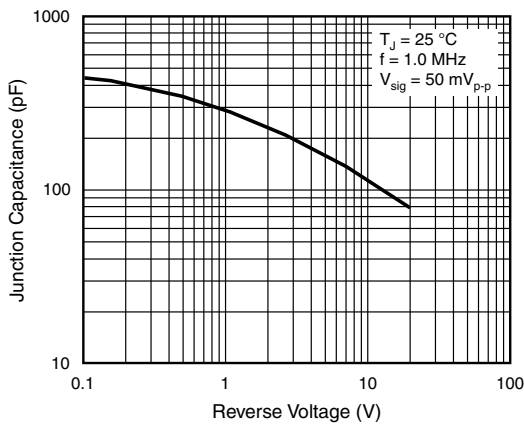
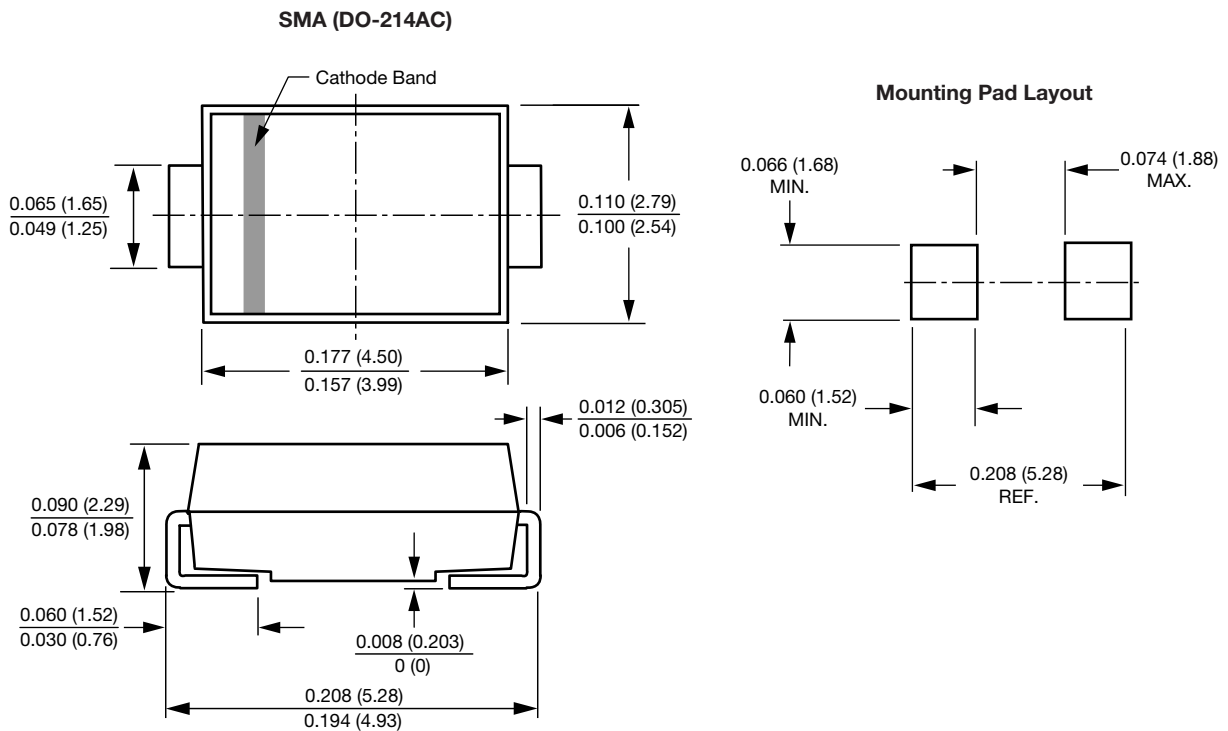


Fig. 5 - Typical Junction Capacitance

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





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