

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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage, high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-214AC (SMA)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), 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 ($T_A = 25\text{ °C}$ 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/ 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 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SL12	SL13	UNIT
Maximum instantaneous forward voltage at ⁽¹⁾	I _F = 0.1 A	T _A = 125 °C	V _F	0.230		V
	I _F = 0.1 A	T _A = 25 °C		0.360		
	I _F = 1.0 A	T _A = 125 °C		0.340		
	I _F = 1.0 A	T _A = 25 °C		0.445		
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾		T _A = 25 °C T _A = 100 °C	I _R	0.2 6.0		mA

Note:

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SL12	SL13	UNIT
Maximum thermal resistance ⁽¹⁾	R _{θJA}	88		°C/W
	R _{θJL}	28		

Note:

(1) P.C.B. mounted on 0.2 x 0.2" (5.0 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

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

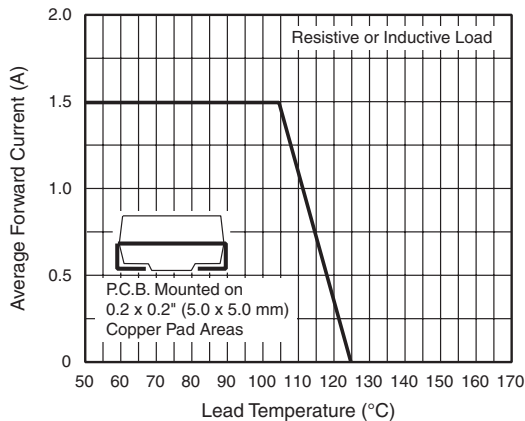


Figure 1. Forward Current Derating Curve

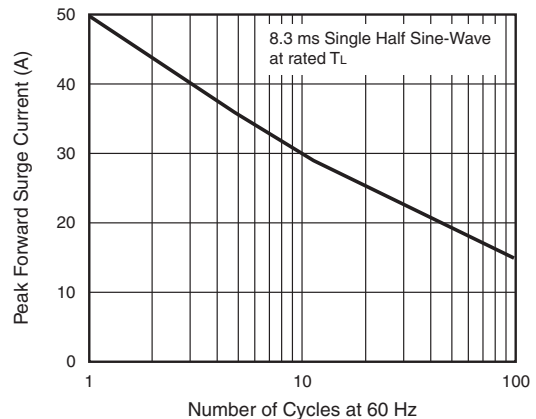


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

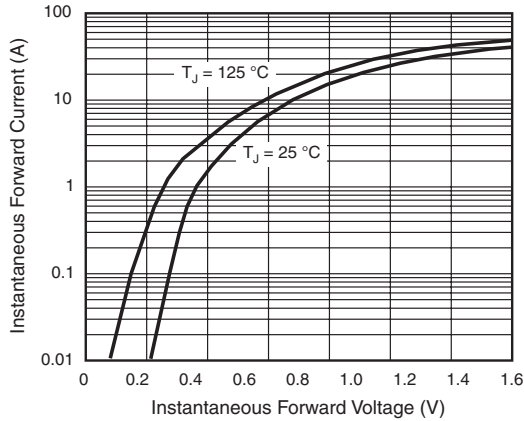


Figure 3. Typical Instantaneous Forward Characteristics

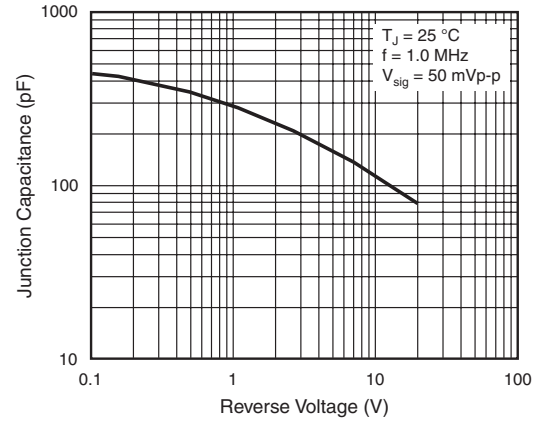


Figure 5. Typical Junction Capacitance

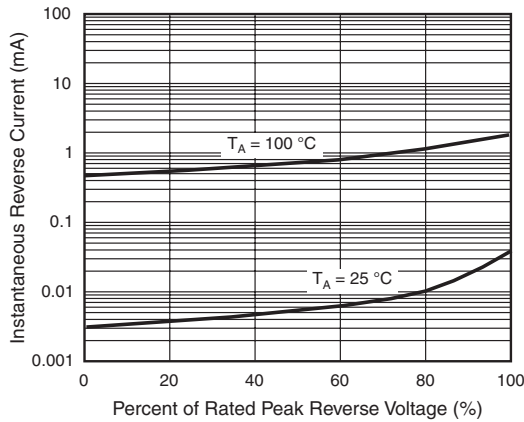
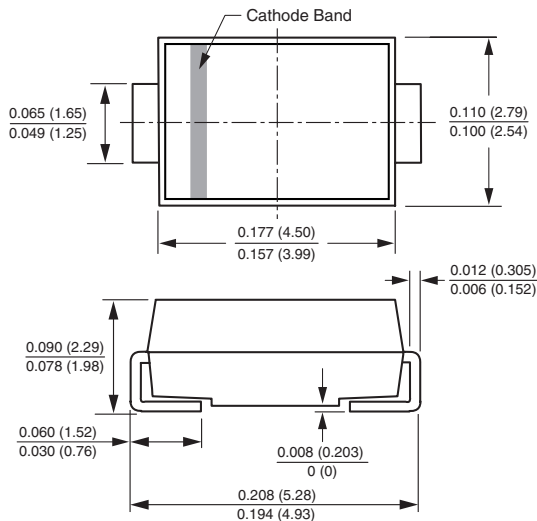
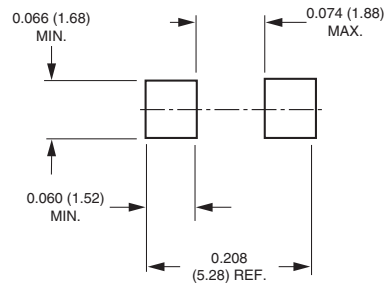


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)

Mounting Pad Layout




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