

Surface Mount Schottky Barrier Rectifier



DO-214AA (SMB)

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-214AA (SMB)

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

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

$I_{F(AV)}$	2.0 A
V_{RRM}	20 V to 30 V
I_{FSM}	100 A
V_F	0.32 V
$T_J \text{ max.}$	125 °C

MAXIMUM RATINGS (TA = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SL22	SL23	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 (fig.1)	$I_{F(AV)}$	2.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100		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 (TA = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SL22	SL23	UNIT
Maximum instantaneous forward voltage at ⁽¹⁾	IF = 1.0 A	TA = 125 °C	VF	0.280		V
		TA = 25 °C		0.395		
	IF = 2.0 A	TA = 125 °C		0.320		
		TA = 25 °C		0.440		
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾			IR	0.4		mA
				10		

Note

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

THERMAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SL22	SL23	UNIT
Maximum thermal resistance ⁽¹⁾	RθJA	75		°C/W
	RθJL	17		

Note

⁽¹⁾ P.C.B. mounted 0.55" x 0.55" (14 mm x 14 mm) copper pad areas, T_L = 90 °C

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SL23-E3/52T	0.096	52T	750	7" diameter plastic tape and reel
SL23-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SL23HE3/52T ⁽¹⁾	0.096	52T	750	7" diameter plastic tape and reel
SL23HE3/5BT ⁽¹⁾	0.096	5BT	3200	13" diameter plastic tape and reel

Note

⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

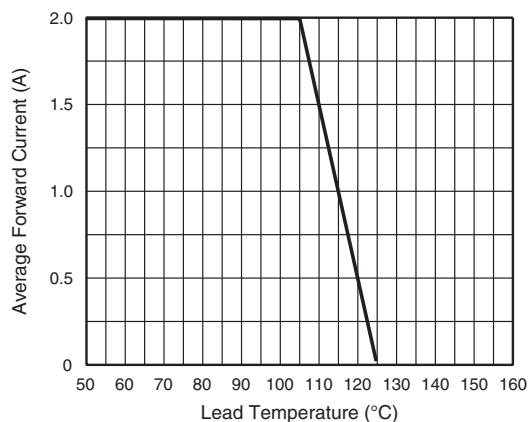


Fig. 1 - Forward Derating Curve

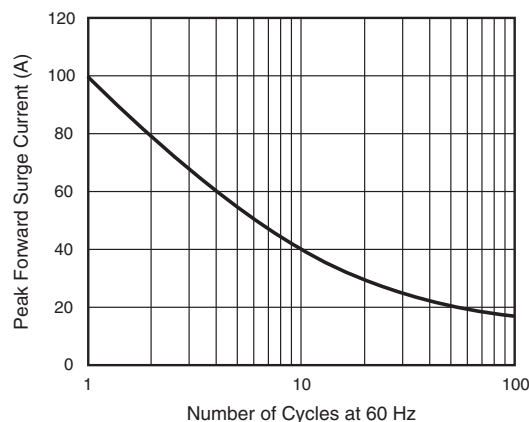


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

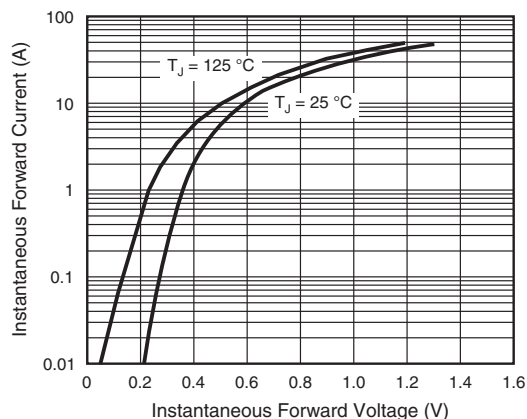


Fig. 3 - Typical Instantaneous Forward Characteristics

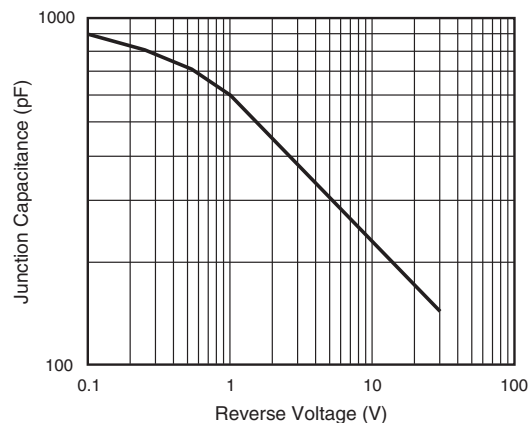


Fig. 5 - Typical Junction Capacitance

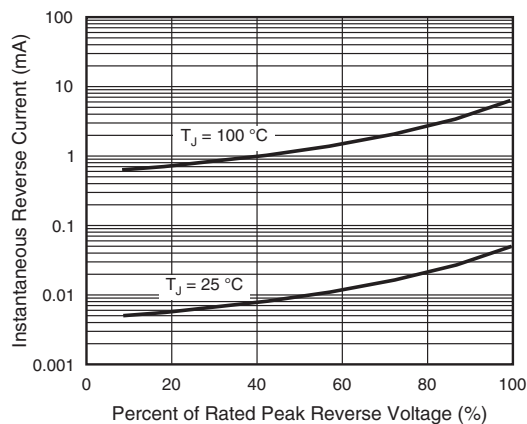
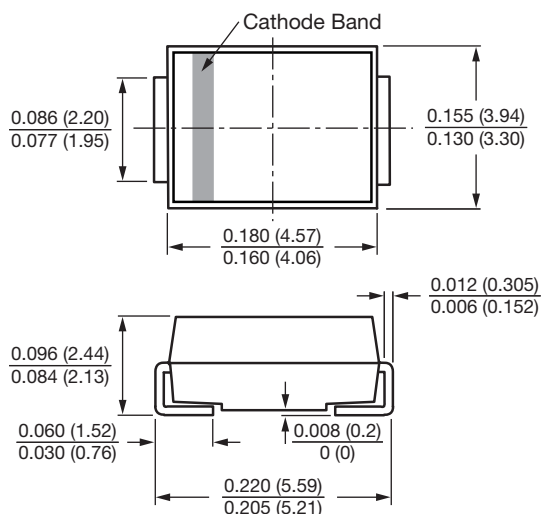


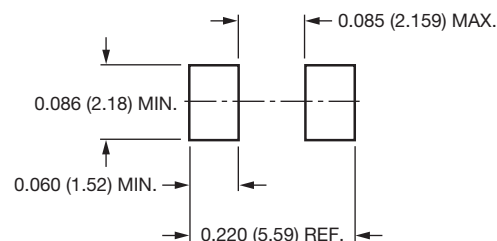
Fig. 4 - Typical Reverse Current Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout





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