

Surface Mount Schottky Barrier Rectifier



SMC (DO-214AB)



RoHS
COMPLIANT
HALOGEN
FREE
Available

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
 - Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: SMC (DO-214AB)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified

Base P/NHM3_X - halogen-free, RoHS-compliant, and AEC-Q101 qualified

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, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	4.0 A
V_{RRM}	20 V, 30 V, 40 V
I_{FSM}	150 A
V_F	0.31 V, 0.35 V
T_J max.	125 °C
Package	SMC (DO-214AB)
Diode variations	Single

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SL42	SL43	SL44	UNIT
Device marking code		SL2	SL3	SL4	
Maximum repetitive peak reverse voltage	V _{RRM}	20	30	40	V
Maximum RMS voltage	V _{RMS}	14	21	28	V
Maximum DC blocking voltage	V _{DC}	20	30	40	V
Maximum average forward rectified current ⁽¹⁾ at T _L (fig. 1)	I _{F(AV)}	4.0			A
		8.0			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150			A
Operating junction temperature range	T _J	-55 to +125			°C
Storage temperature range	T _{STG}	-55 to +150			°C

Note

⁽¹⁾ PCB mounted 0.55" x 0.55" (14 mm x 14 mm) copper pad areas, $T_L = 90\text{ °C}$

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

PARAMETER	TEST CONDITIONS		SYMBOL	SL42	SL43	SL44	UNIT
Maximum instantaneous forward voltage at ⁽¹⁾	I _F = 4.0 A	T _A = 125 °C	V _F	0.31		0.35	V
		T _A = 25 °C		0.42		0.44	
	I _F = 8.0 A	T _A = 125 °C		0.37		0.41	
		T _A = 25 °C		0.47		0.50	
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾		T _A = 25 °C	I _R	0.5			mA
		T _A = 100 °C		35			

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	SL42	SL43	SL44	UNIT
Typical thermal resistance ⁽¹⁾	R _{θJA}	50			°C/W
	R _{θJL}	14			

Note

⁽¹⁾ PCB mounted 0.55" x 0.55" (14 mm x 14 mm) copper pad areas, $T_L = 90\text{ }^{\circ}\text{C}$

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SL44-E3/57T	0.235	57T	850	7" diameter plastic tape and reel
SL44-E3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel
SL44HE3_A/H ⁽¹⁾	0.235	H	850	7" diameter plastic tape and reel
SL44HE3_A/I ⁽¹⁾	0.235	I	3500	13" diameter plastic tape and reel
SL44-M3/57T	0.235	57T	850	7" diameter plastic tape and reel
SL44-M3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel
SL44HM3_A/H ⁽¹⁾	0.235	H	850	7" diameter plastic tape and reel
SL44HM3_A/I ⁽¹⁾	0.235	I	3500	13" diameter plastic tape and reel

Note

⁽¹⁾ AEC-Q101 qualified

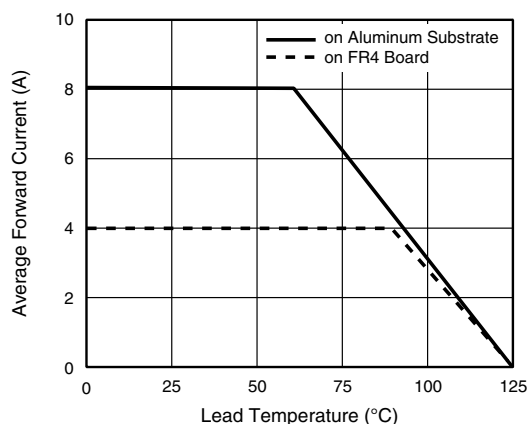
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

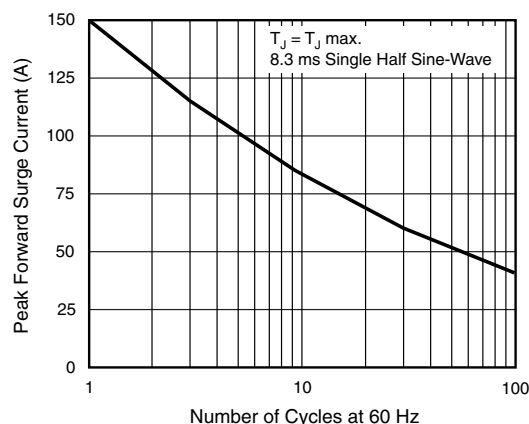


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

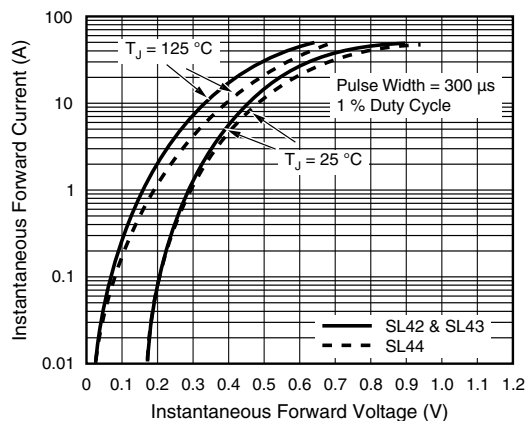


Fig. 3 - Typical Instantaneous Forward Characteristics

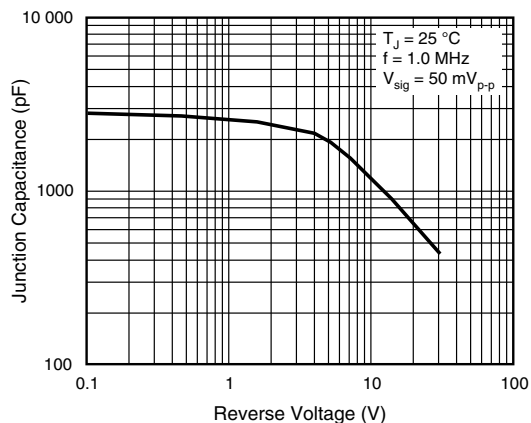


Fig. 5 - Typical Junction Capacitance

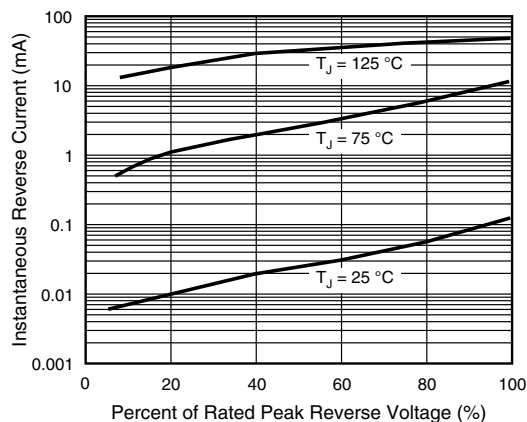
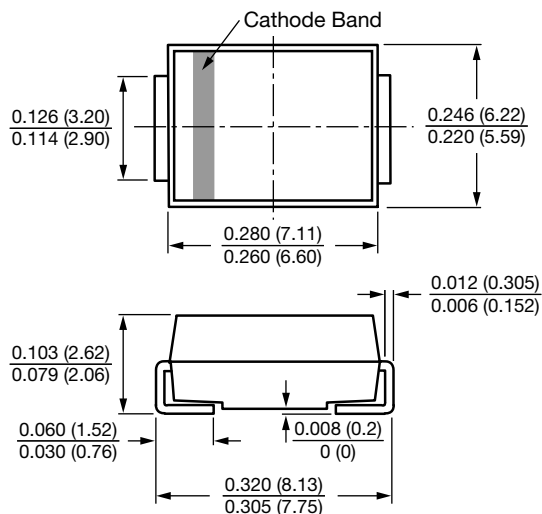


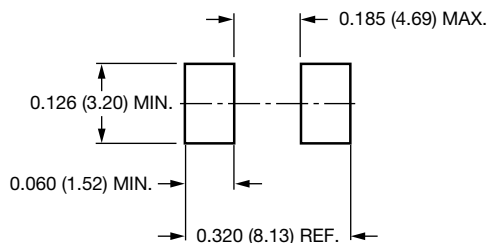
Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMC (DO-214AB)



Mounting Pad Layout





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