

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
- Low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 - 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

("_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	
$I_{F(AV)}$	3.0 A
V_{RRM}	20 V, 30 V, 40 V, 50 V, 60 V
I_{FSM}	100 A
EAS	20 mJ
V_F	0.5 V, 0.75 V
T_J max.	150 °C
Package	SMC (DO-214AB)
Circuit configuration	Single

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL	SS32	SS33	SS34	SS35	SS36	UNIT	
Device marking code		S2	S3	S4	S5	S6		
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	V	
Maximum RMS voltage	V_{RMS}	14	21	28	35	42	V	
Maximum DC blocking voltage	V_{DC}	20	30	40	50	60	V	
Maximum average forward rectified current at T_L (fig. 1)	$I_{F(AV)}$	3.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100						A
Non-repetitive avalanche energy at $T_A = 25\text{ °C}$, $I_{AS} = 2.0\text{ A}$, $L = 10\text{ mH}$	E_{AS}	20						mJ
Voltage rate of change (rated V_R)	dV/dt	10 000						V/ μ s
Operating junction temperature range	T_J	-55 to +150						°C
Storage temperature range	T_{STG}	-55 to +150						°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	SS32	SS33	SS34	SS35	SS36	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	3.0 A	V_F	0.5			0.75		V
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾	$T_A = 25\text{ }^\circ\text{C}$	I_R	0.5					mA
	$T_A = 100\text{ }^\circ\text{C}$		20		10			

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	SS32	SS33	SS34	SS35	SS36	UNIT	
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$	55					$^\circ\text{C/W}$	
	$R_{\theta JL}$	17						

Note
⁽¹⁾ PCB mounted with 0.55" x 0.55" (14 mm x 14 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS36-E3/57T	0.235	57T	850	7" diameter plastic tape and reel
SS36-E3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel
SS36HE3_B/H ⁽¹⁾	0.235	H	850	7" diameter plastic tape and reel
SS36HE3_B/I ⁽¹⁾	0.235	I	3500	13" diameter plastic tape and reel
SS36-M3/57T	0.235	57T	850	7" diameter plastic tape and reel
SS36-M3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel
SS36HM3_A/H ⁽¹⁾	0.235	H	850	7" diameter plastic tape and reel
SS36HM3_A/I ⁽¹⁾	0.235	I	3500	13" diameter plastic tape and reel

Note
⁽¹⁾ AEC-Q101 qualified

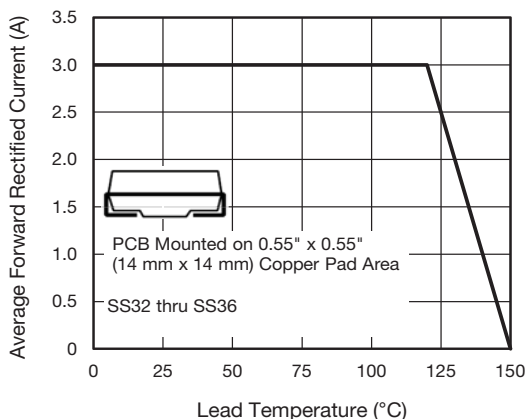
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

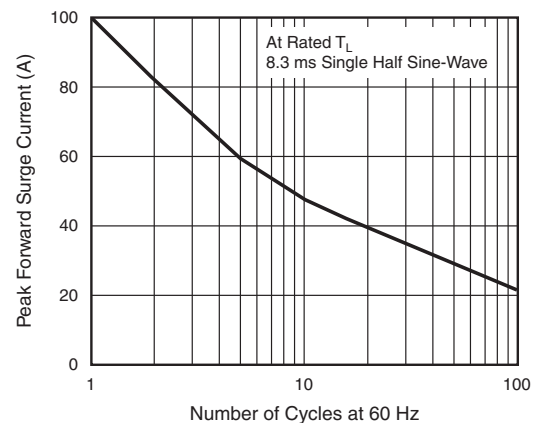


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

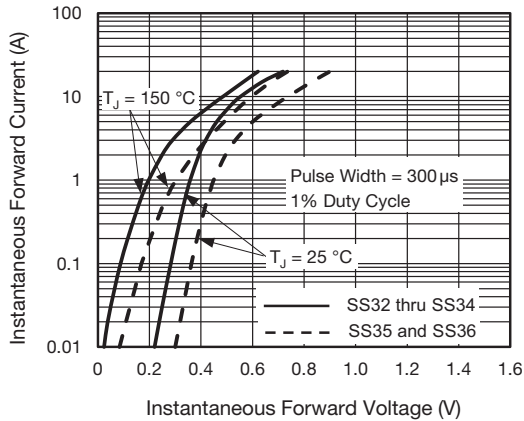


Fig. 3 - Typical Instantaneous Forward Characteristics

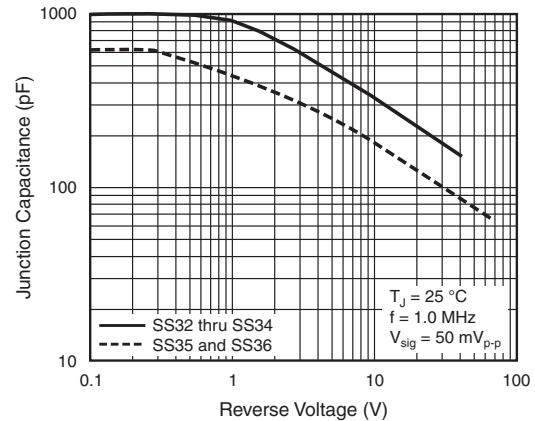


Fig. 5 - Typical Junction Capacitance

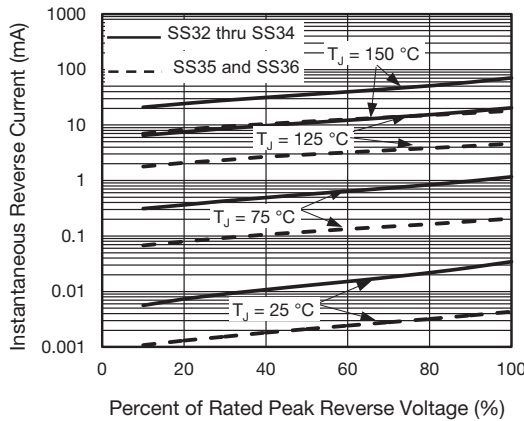


Fig. 4 - Typical Reverse Current Characteristics

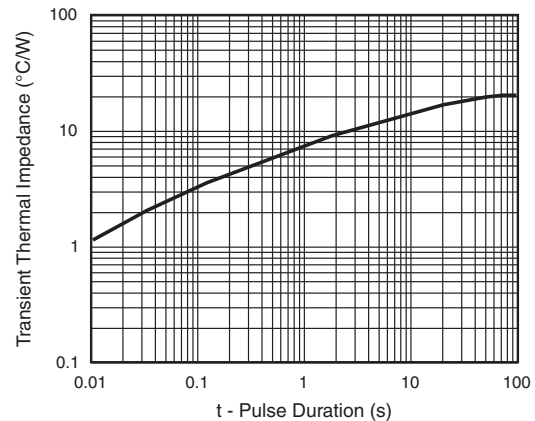
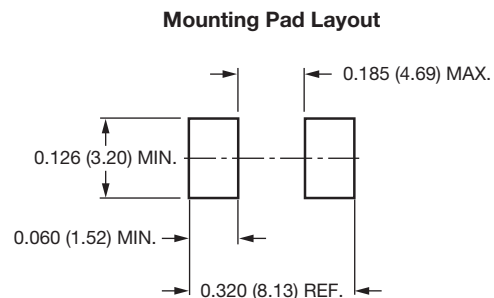
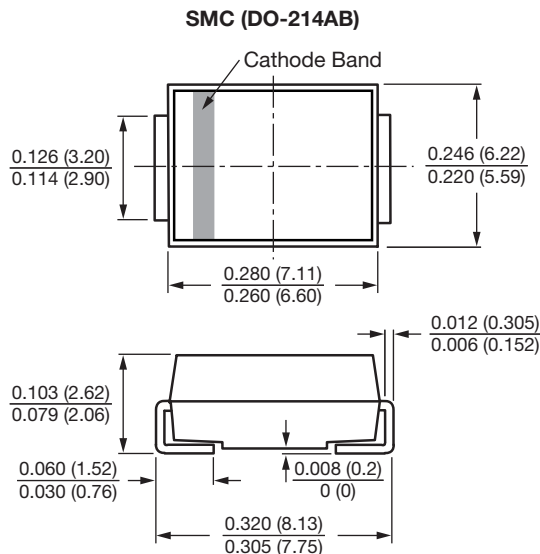


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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