

Surface-Mount Fast Switching Rectifier


SMC (DO-214AB)

 Cathode  —  Anode

ADDITIONAL RESOURCES


[3D Models](#)

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V
I_{FSM}	100 A
t_{rr}	150 ns, 250 ns, 500 ns
V_F	1.3 V
T_J max.	150 °C
Package	SMC (DO-214AB)
Circuit configuration	Single

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated pellet chip junction
- Fast switching for high efficiency
- High forward 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

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer, automotive and telecommunication.

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 cathode end

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL	RS3A	RS3B	RS3D	RS3G	RS3J	RS3K	UNIT
Device marking code		RA	RB	RD	RG	RJ	RK	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	500	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	V
Maximum average forward rectified current at $T_L = 75\text{ °C}$	$I_{F(AV)}$	3.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100						A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150						°C



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	RS3A	RS3B	RS3D	RS3G	RS3J	RS3K	UNIT
Maximum instantaneous forward voltage	2.5 A	V _F	1.3						V
Maximum DC reverse current at rated DC blocking voltage	T _A = 25 °C	I _R	10						μA
	T _A = 125 °C		250						
Maximum reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	t _{rr}	150				250	500	ns
Typical junction capacitance	4.0 V, 1 MHz	C _J	44				34		pF

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	RS3A	RS3B	RS3D	RS3G	RS3J	RS3K	UNIT	
Typical thermal resistance	R _{θJA} ⁽¹⁾	50						°C/W	
	R _{θJL} ⁽¹⁾	15							

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad area

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
RS3J-E3/57T	0.211	57T	850	7" diameter plastic tape and reel
RS3J-E3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel
RS3JHE3_A/H ⁽¹⁾	0.211	H	850	7" diameter plastic tape and reel
RS3JHE3_A/I ⁽¹⁾	0.211	I	3500	13" diameter plastic tape and reel
RS3J-M3/57T	0.211	57T	850	7" diameter plastic tape and reel
RS3J-M3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel
RS3JHM3_A/H ⁽¹⁾	0.211	H	850	7" diameter plastic tape and reel
RS3JHM3_A/I ⁽¹⁾	0.211	I	3500	13" diameter plastic tape and reel

Note

⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

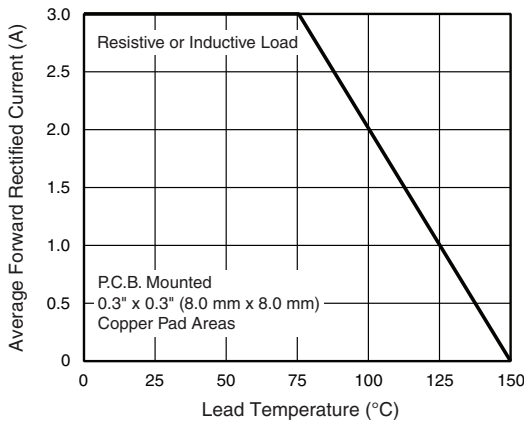


Fig. 1 - Forward Current Derating Curve

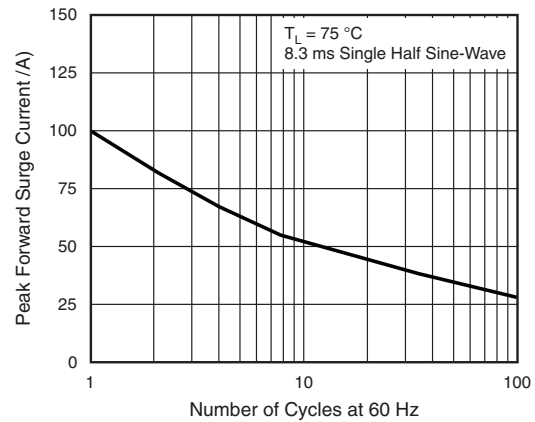


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

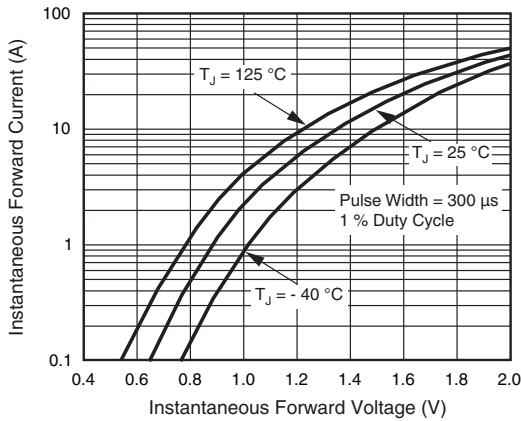


Fig. 3 - Typical Instantaneous Forward Characteristics

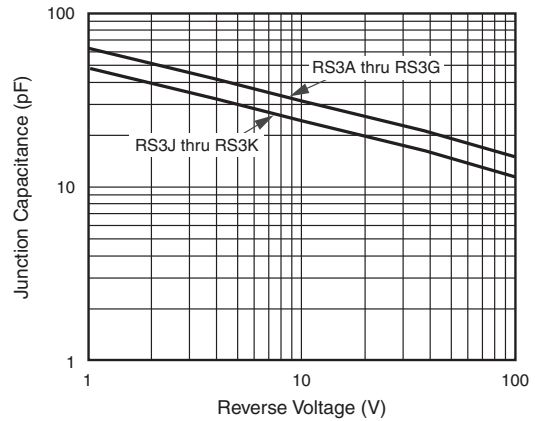


Fig. 5 - Typical Junction Capacitance

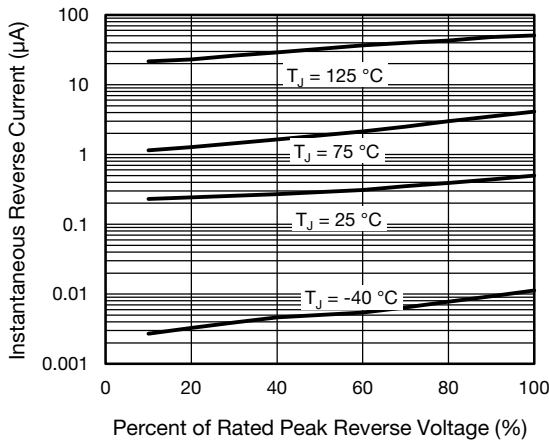


Fig. 4 - Typical Reverse Characteristics

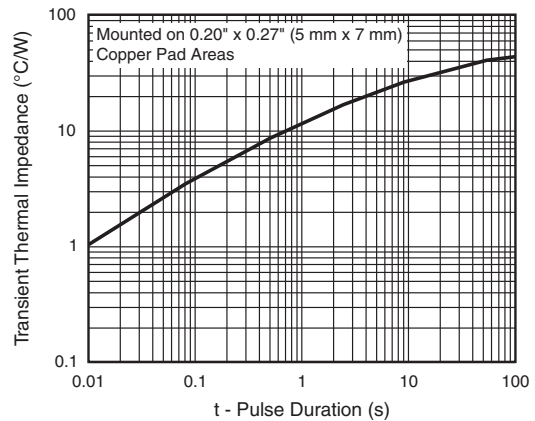
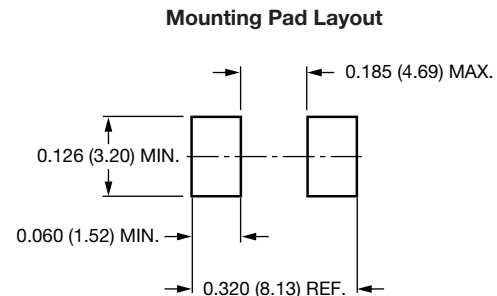
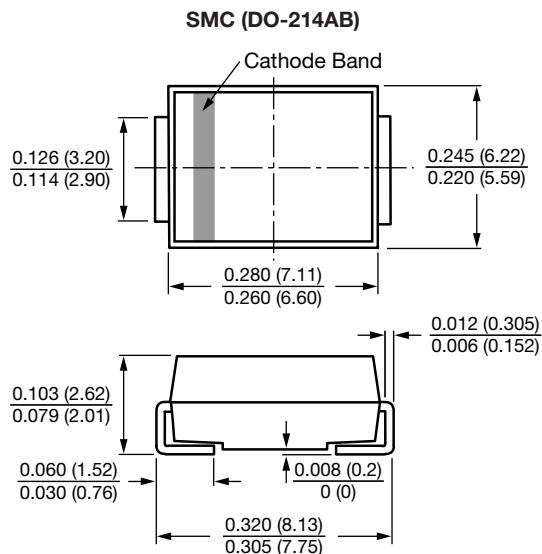


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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