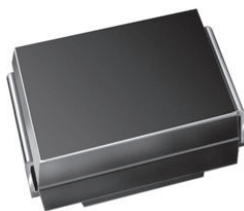


Surface-Mount Ultrafast Plastic Rectifier


SMB (DO-214AA)

Cathode  Anode

FEATURES

- Glass passivated pellet chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT
HALOGEN
FREE

LINKS TO ADDITIONAL RESOURCES



TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, and telecommunication.

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	1.0 A
V_{RRM}	200 V
I_{FSM}	40 A
t_{rr}	25 ns
V_F	0.71 V
T_J max.	175 °C
Package	SMB (DO-214AA)
Circuit configuration	Single

MECHANICAL DATA

Case: SMB (DO-214AA)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 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	VALUE	UNIT
Device marking code		MD	
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Working peak reverse voltage	V_{RWM}	200	V
Maximum DC blocking voltage	V_{DC}	200	V
Maximum average forward rectified current at (fig. 1)	$I_{F(AV)}$	$T_L = 155\text{ °C}$	A
		$T_L = 145\text{ °C}$	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40	A
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175	°C

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

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage	$I_F = 1.0\text{ A}$	$V_F^{(1)}$	0.875	V
			0.71	
Maximum instantaneous reverse current at rated DC blocking voltage		$I_R^{(1)}$	2.0	μA
			50	
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$	t_{rr}	25	ns
Maximum reverse recovery time	$I_F = 1.0\text{ A}$, $dI/dt = 50\text{ A}/\mu\text{s}$, $V_R = 30\text{ V}$, $I_{rr} = 10\% I_{RM}$	t_{rr}	35	ns
Maximum forward recovery time	$I_F = 1.0\text{ A}$, $dI/dt = 100\text{ A}/\mu\text{s}$, recovery to 1.0 V	t_{fr}	25	ns

Note

⁽¹⁾ Pulse test: $t_p = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$

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

PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to lead	$R_{\theta JL}$	13	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MURS120-M3/52T	0.096	52T	750	7" diameter plastic tape and reel
MURS120-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel

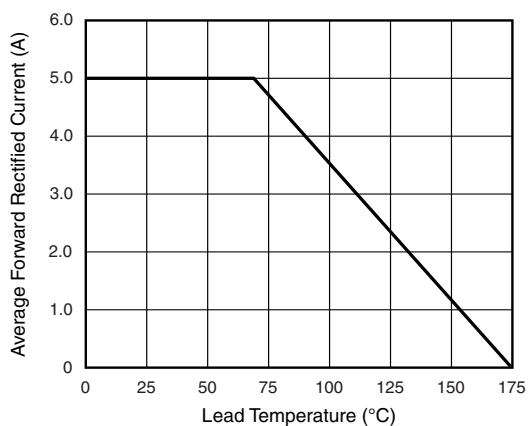
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

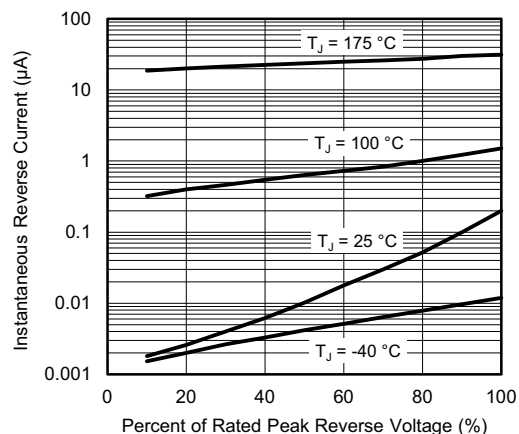


Fig. 4 - Typical Reverse Leakage Characteristics

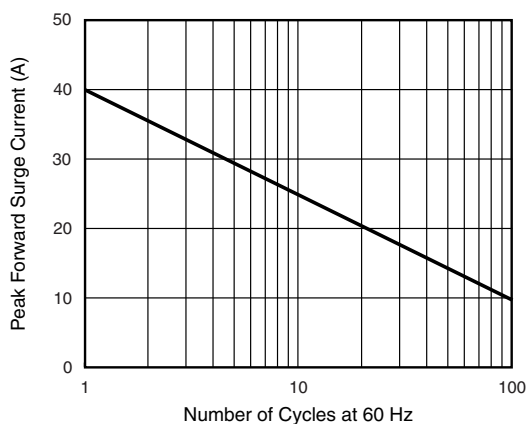


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

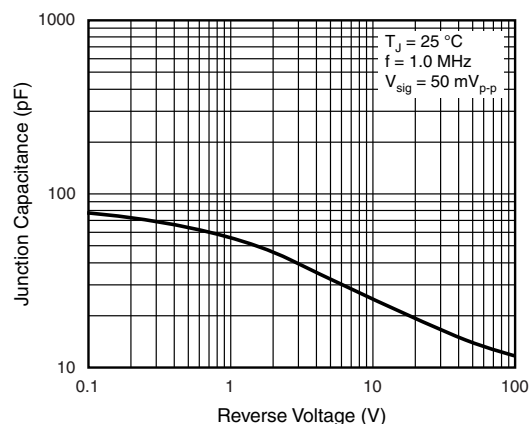


Fig. 5 - Typical Junction Capacitance

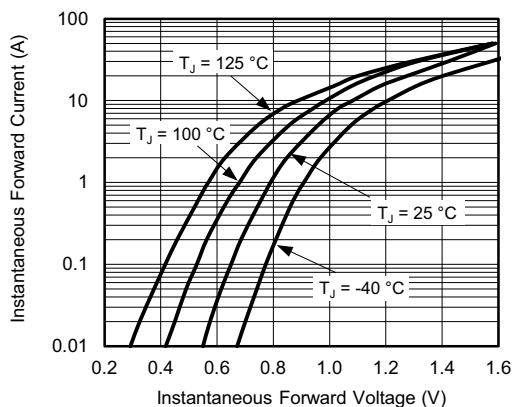
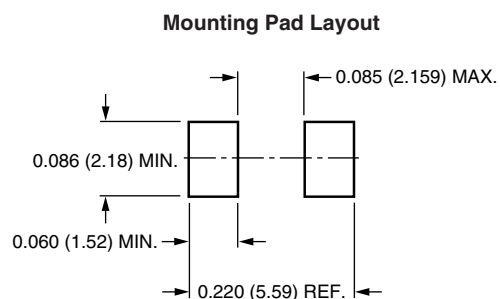
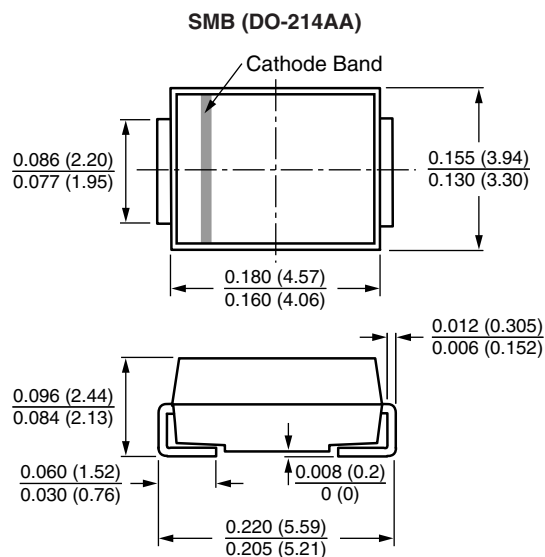


Fig. 3 - Typical Instantaneous Forward Characteristics



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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