

Surface Mount Ultrafast Plastic Rectifier



DO-214AA (SMB)

FEATURES

- Glass passivated 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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-214AA (SMB)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	400 V, 600 V
I_{FSM}	35 A
t_{rr}	50 ns
V_F	1.20 V
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MURS240	MURS260	UNIT
Device marking codes		M2G	M2J	
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	V
Maximum average forward rectified current at $T_L = 125 \text{ °C}$ (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}	35		A
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175		°C

MURS240 & MURS260

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	MURS240	MURS260	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	I _F = 2.0 A	T _J = 25 °C T _J = 125 °C	V _F	1.45 1.20		V
Maximum instantaneous reverse current ⁽²⁾	rated V _R	T _J = 25 °C T _J = 125 °C	I _R	5.0 150		μA
Maximum reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	50		ns
Maximum reverse recovery time	I _F = 1.0 A, di/dt = 50 A/μs, V _R = 30 V, I _{rr} = 10 % I _{RM}		t _{rr}	75		ns
Maximum forward recovery time	I _F = 1.0 A, di/dt = 100 A/μs, recovery to 1.0 V		t _{fr}	50		ns

Notes:

- (1) Pulse test: t_p = 300 μs, duty cycle ≤ 2 %
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	MURS240	MURS260	UNIT
Typical thermal resistance junction to lead	R _{θJL}	15		°C/W

Note:

- (1) Units mounted on P.C.B. with 30 mm x 30 mm copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MURS240-E3/52T	0.093	52T	750	7" diameter plastic tape and reel
MURS240-E3/5BT	0.093	5BT	3200	13" diameter plastic tape and reel
MURS240HE3/52T ⁽¹⁾	0.093	52T	750	7" diameter plastic tape and reel
MURS240HE3/5BT ⁽¹⁾	0.093	5BT	3200	13" diameter plastic tape and reel

Note:

- (1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

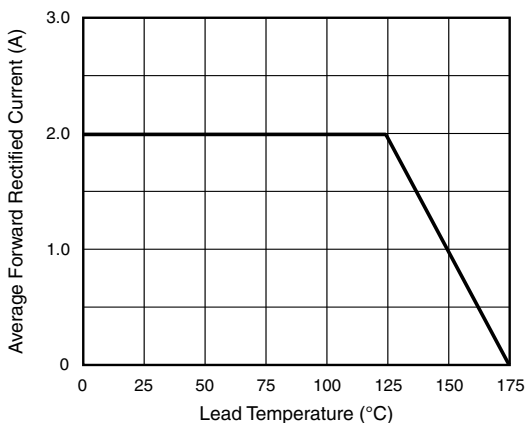


Figure 1. Forward Current Derating Curve

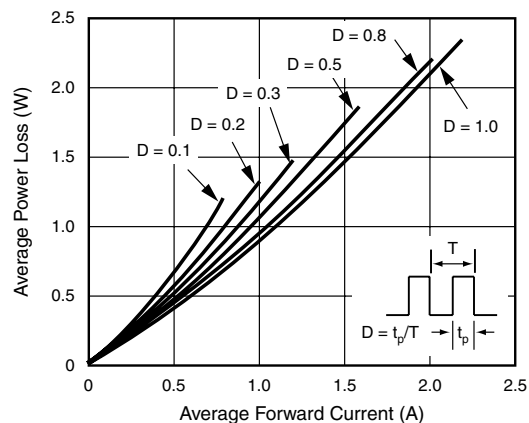


Figure 2. Forward Power Loss Characteristics

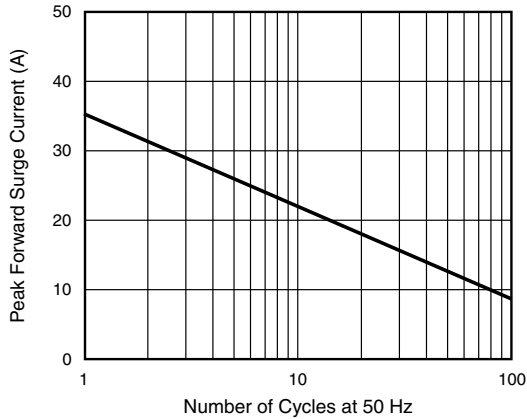


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

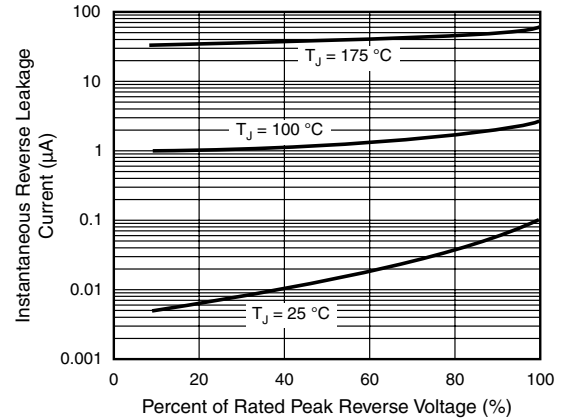


Figure 5. Typical Reverse Leakage Characteristics

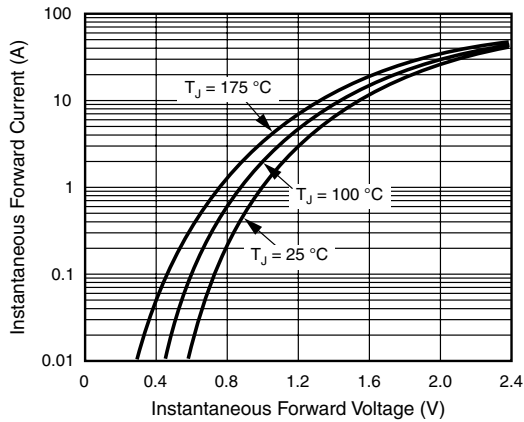


Figure 4. Typical Instantaneous Forward Characteristics

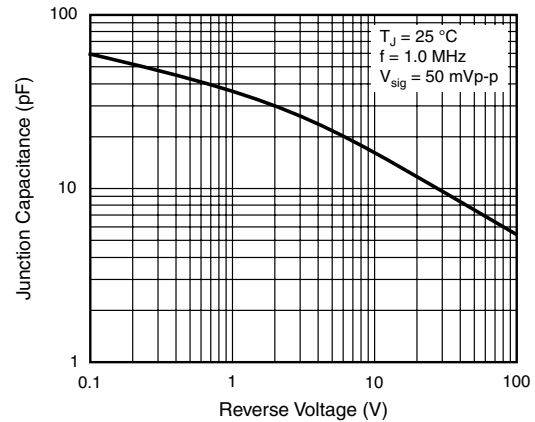
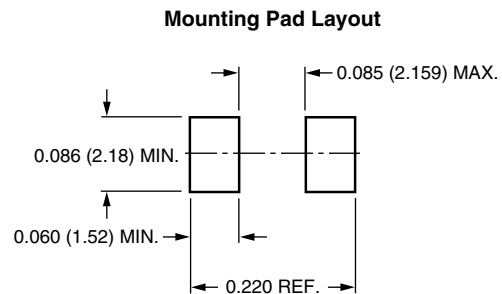
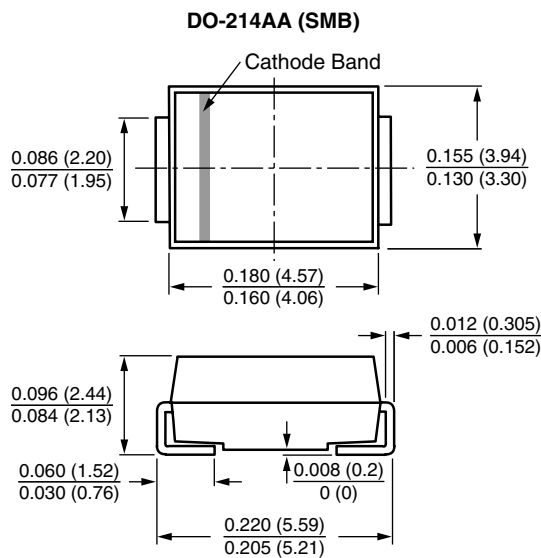


Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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