

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
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
V_{RRM}	400 V, 600 V
I_{FSM}	35 A
t_{rr}	50 ns
V_F at $I_F = 3.0$ A	1.20 V
T_J max.	175 °C
Package	DO-214AA (SMB)
Diode variation	Single die

MECHANICAL DATA

Case: DO-214AA (SMB)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-E3 - RoHS-compliant, commercial grade
 Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

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

E3 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	MURS340S	MURS360S	UNIT
Device marking codes		3GS	3JS	
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	V
Maximum average forward rectified current	$T_M = 130$ °C	$I_{F(AV)}^{(1)}$	3.0	A
	$T_A = 25$ °C	$I_{F(AV)}^{(2)}$	1.5	
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

Notes

(1) Units mounted on PCB with 8 mm x 8 mm, 1 oz. copper pad areas (fig. 1)

(2) Free air, mounted on recommended copper pad area (fig. 2)



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	MURS340S	MURS360S	UNIT
Maximum instantaneous forward voltage	$I_F = 3.0\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	1.45	V
		$T_J = 150\text{ }^\circ\text{C}$		1.20	
Maximum instantaneous reverse current	Rated V_R	$T_J = 25\text{ }^\circ\text{C}$	$I_R^{(2)}$	5.0	μA
		$T_J = 150\text{ }^\circ\text{C}$		150	
Maximum reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$	t_{rr}	50		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}	75		ns

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MURS340S	MURS360S	UNIT
Typical thermal resistance	$R_{\theta JM}^{(1)}$	12		$^\circ\text{C}/\text{W}$
	$R_{\theta JA}^{(2)}$	120		

Notes

- (1) Units mounted on PCB with 8 mm x 8 mm, 1 oz. copper pad areas. Thermal resistance $R_{\theta JM}$ - junction to mount
- (2) Free air, mounted on recommended copper pad area. Thermal resistance $R_{\theta JA}$ - junction to ambient

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MURS360S-E3/52T	0.093	52T	750	7" diameter plastic tape and reel
MURS360S-E3/5BT	0.093	5BT	3200	13" diameter plastic tape and reel
MURS360SHE3/52T ⁽¹⁾	0.093	52T	750	7" diameter plastic tape and reel
MURS360SHE3/5BT ⁽¹⁾	0.093	5BT	3200	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)

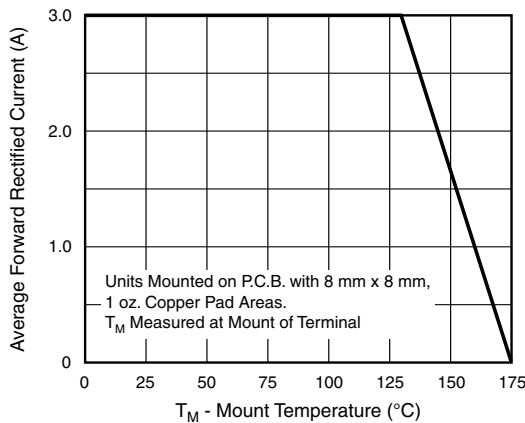


Fig. 1 - Forward Current Derating Curve

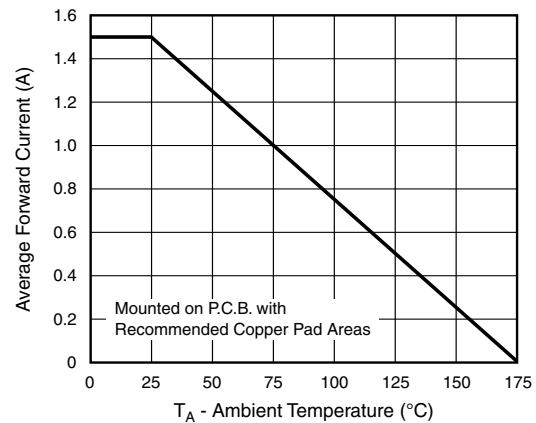


Fig. 2 - Forward Current Derating Curve

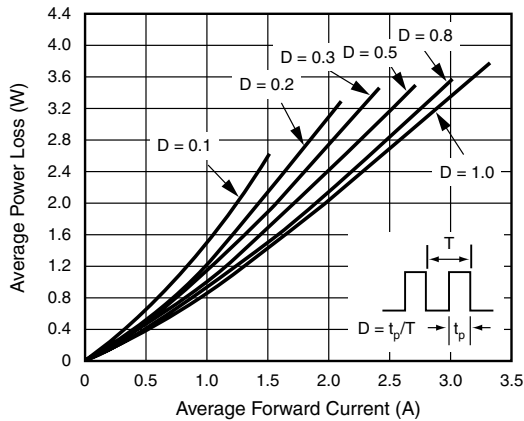


Fig. 3 - Forward Power Loss Characteristics

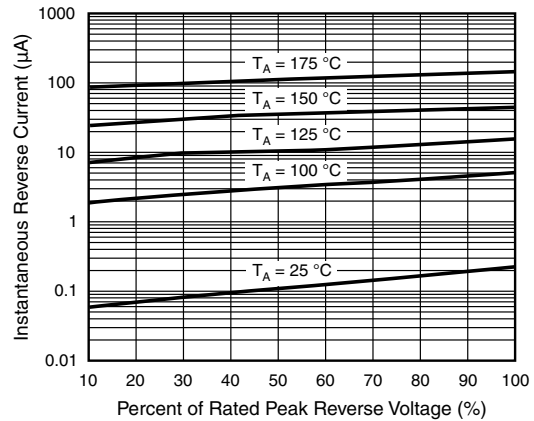


Fig. 5 - Typical Reverse Characteristics

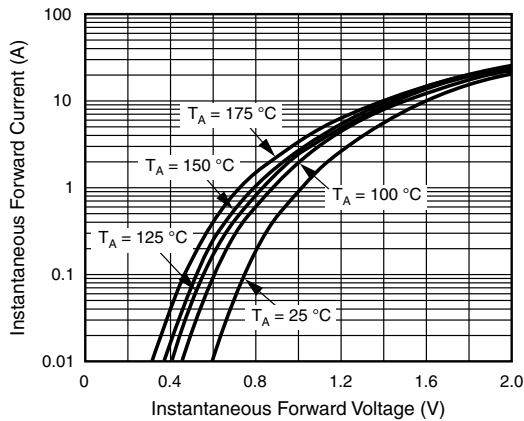


Fig. 4 - Typical Instantaneous Forward Characteristics

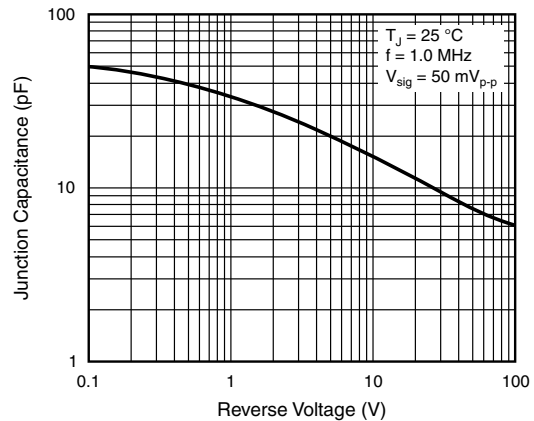
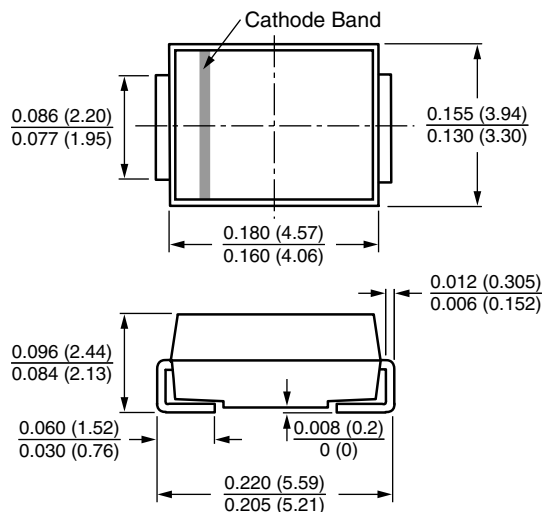


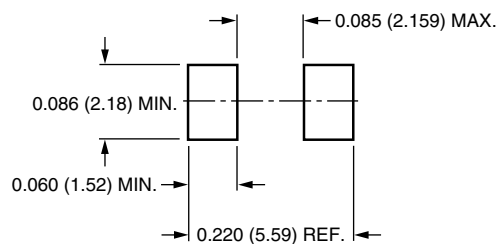
Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout





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