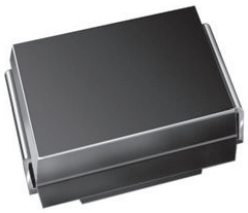
Surface-Mount Ultrafast Plastic Rectifier



SMB (DO-214AA)

Cathode ○—|◀—○ Anode

FEATURES

- Glass passivated pellet chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
  - Automotive ordering code: base P/NHE3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE

Pb

e3

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models

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	SMB (DO-214AA)
Circuit configuration	Single

MECHANICAL DATA

Case: SMB (DO-214AA)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/NHE3_X - 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 and HE3 suffix meet 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)

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	MURS340S	MURS360S	UNIT
Maximum instantaneous forward voltage	I_F = 3.0 A	T_J = 25 °C	V_F (1)	1.45		V
		T_J = 150 °C		1.20		
Maximum instantaneous reverse current	Rated V_R	T_J = 25 °C	I_R (2)	5.0		μA
		T_J = 150 °C		150		
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

Notes

(3) Pulse test: 300 μs pulse width, 1 % duty cycle

(4) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	MURS340S	MURS360S	UNIT
Typical thermal resistance	$R_{\theta JM}$ (1)	12		°C/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_A/H (1)	0.093	H	750	7" diameter plastic tape and reel
MURS360SHE3_A/I (1)	0.093	I	3200	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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

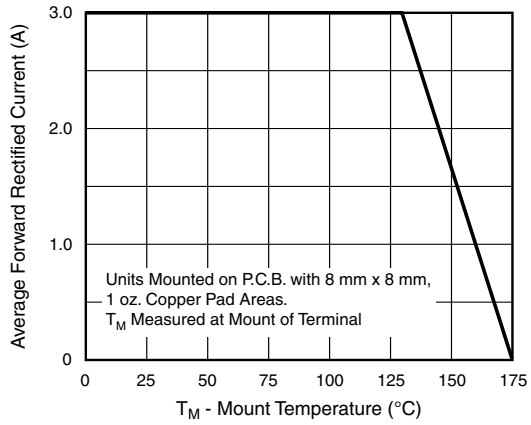


Fig. 1 - Forward Current Derating Curve

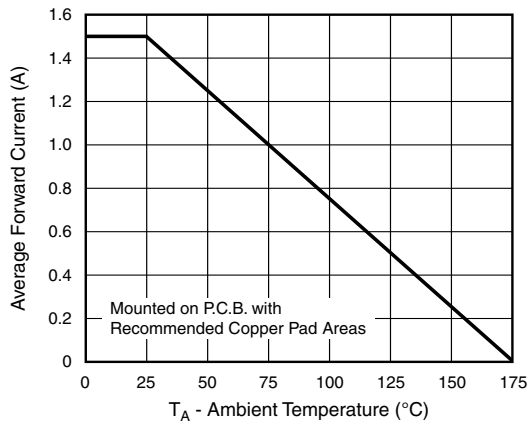


Fig. 2 - Forward Current Derating Curve

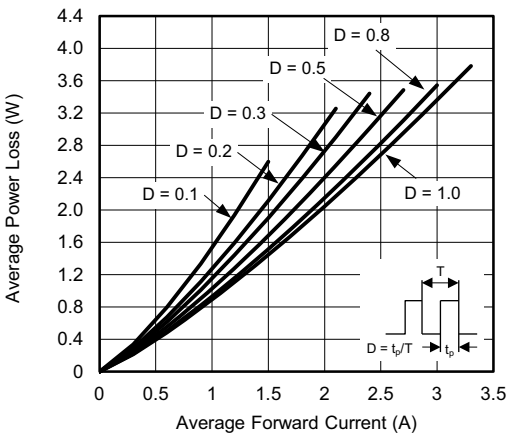


Fig. 3 - Forward Power Loss Characteristics

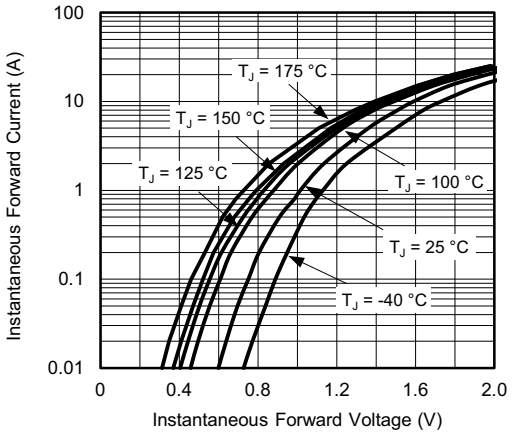


Fig. 4 - Typical Instantaneous Forward Characteristics

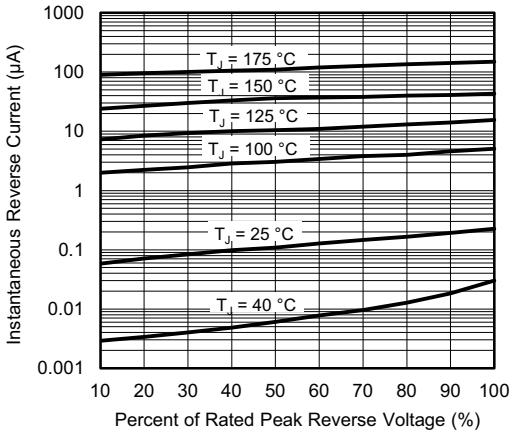


Fig. 5 - Typical Reverse Characteristics

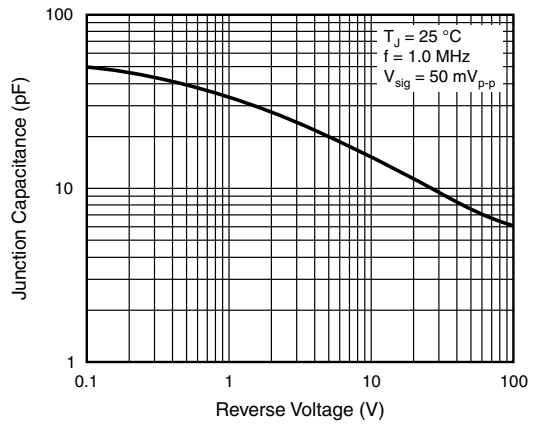


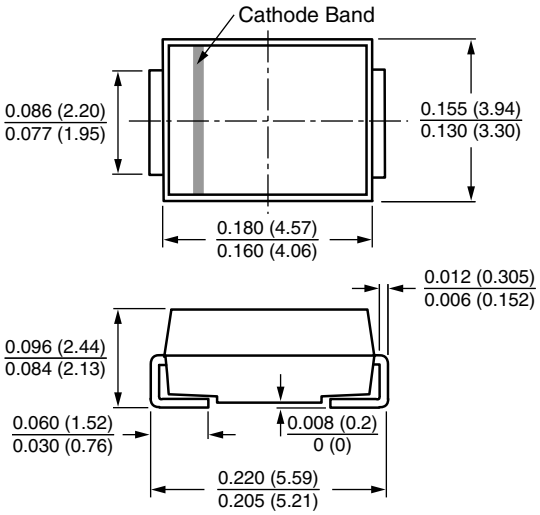
Fig. 6 - Typical Junction Capacitance

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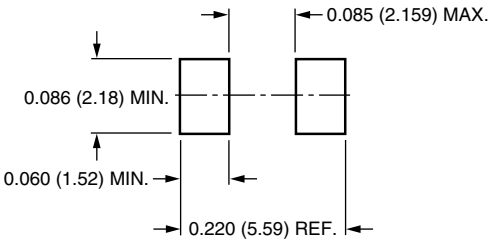
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMB (DO-214AA)



Mounting Pad Layout



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