

Surface-Mount Ultrafast Plastic Rectifier


SMB (DO-214AA)

Cathode  Anode

LINKS TO ADDITIONAL RESOURCES



3D Models

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


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: 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

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

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	$I_{F(AV)}^{(1)}$	3.0	1.5	A
$T_M = 130$ °C $T_A = 25$ °C	$I_{F(AV)}^{(2)}$			
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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	MURS340S	MURS360S	UNIT
Maximum instantaneous forward voltage	$I_F = 3.0 \text{ A}$	$T_J = 25^\circ\text{C}$ $T_J = 150^\circ\text{C}$	V_F ⁽¹⁾	1.45	V
				1.20	
Maximum instantaneous reverse current	Rated V_R	$T_J = 25^\circ\text{C}$ $T_J = 150^\circ\text{C}$	I_R ⁽²⁾	5.0	μA
				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

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

(4) Pulse test: pulse width $\leq 40 \text{ ms}$

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

PARAMETER	SYMBOL	MURS340S	MURS360S	UNIT
Typical thermal resistance	$R_{\theta JM}$ ⁽¹⁾	12	120	$^\circ\text{C}/\text{W}$
	$R_{\theta JA}$ ⁽²⁾			

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

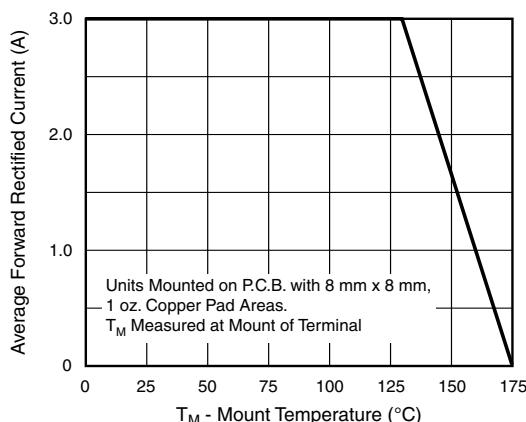
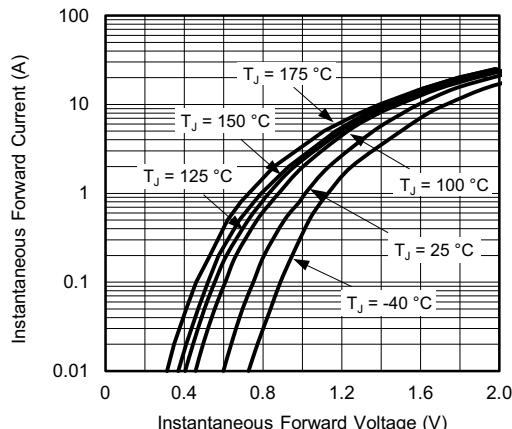
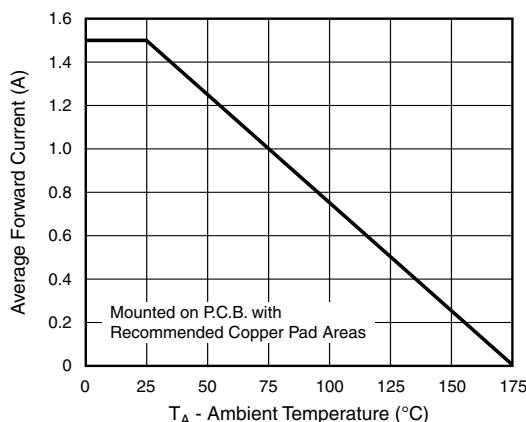
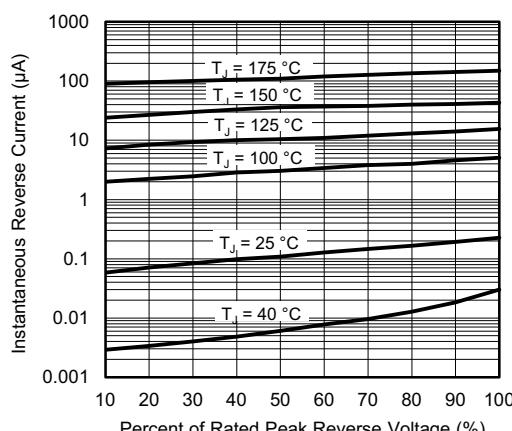
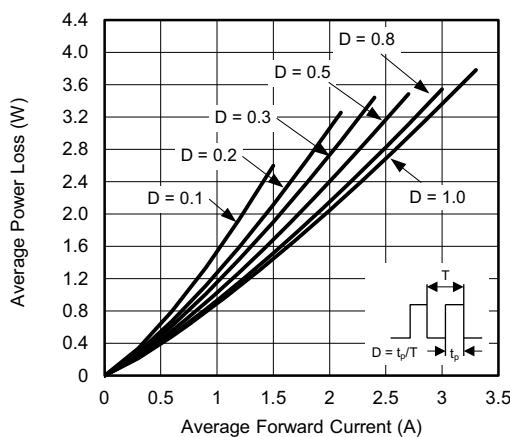
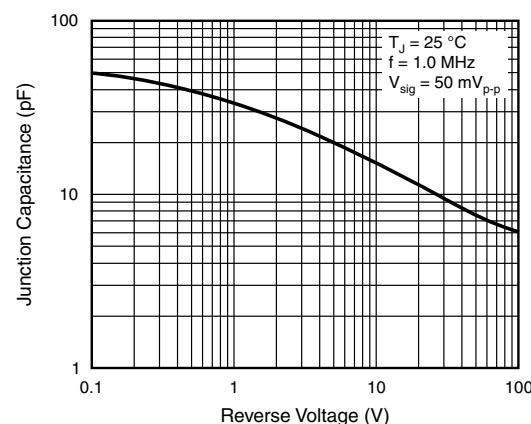
(2) Free air, mounted on recommended copper pad area. Thermal resistance $R_{\theta JA}$ - junction to ambient

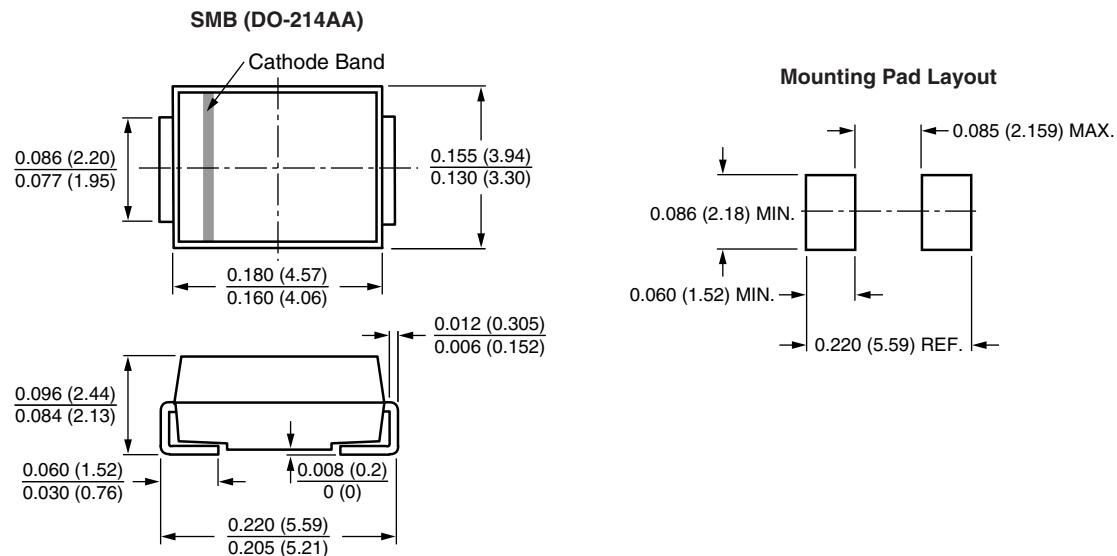
ORDERING INFORMATION (Example)

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

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

Fig. 1 - Forward Current Derating Curve

Fig. 4 - Typical Instantaneous Forward Characteristics

Fig. 2 - Forward Current Derating Curve

Fig. 5 - Typical Reverse Characteristics

Fig. 3 - Forward Power Loss Characteristics

Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)


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