



## 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
- Solder dip 260 °C, 40 s
- Compliant to RoHS directive 2002/95/EC and in accordance to 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 94 V-0 flammability rating

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

$I_{F(AV)}$	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

### 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 <sup>(1)</sup> $T_A = 25$ °C <sup>(2)</sup>	$I_{F(AV)}$	3.0 1.5		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

#### Notes:

- (1) Units mounted on P.C.B. with 8 mm x 8 mm, 1 oz. copper pad areas (Fig. 1)
- (2) Free air, mounted on recommended copper pad area (Fig. 2)

## MURS340S &amp; MURS360S

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	MURS340S	MURS360S	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	$I_F = 3.0\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$ $T_J = 150\text{ }^\circ\text{C}$	$V_F$	1.45 1.20		V
Maximum instantaneous reverse current <sup>(2)</sup>	Rated $V_R$	$T_J = 25\text{ }^\circ\text{C}$ $T_J = 150\text{ }^\circ\text{C}$	$I_R$	5.0 150		$\mu\text{A}$
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  $\mu\text{s}$  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 <sup>(1)</sup>	$R_{\theta JM}$	12		$^\circ\text{C}/\text{W}$
Typical thermal resistance <sup>(2)</sup>	$R_{\theta JA}$	120		$^\circ\text{C}/\text{W}$

**Notes:**(1) Units mounted on P.C.B. 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 <sup>(1)</sup>	0.093	52T	750	7" diameter plastic tape and reel
MURS360SHE3/5BT <sup>(1)</sup>	0.093	5BT	3200	13" diameter plastic tape and reel

**Note:**

(1) AEC-Q101 qualified

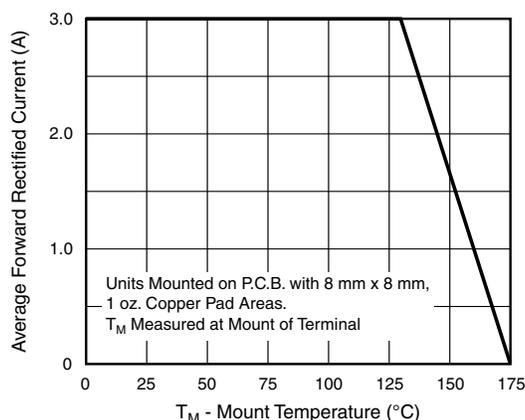
**RATINGS AND CHARACTERISTICS CURVES** $(T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

Figure 1. Forward Current Derating Curve

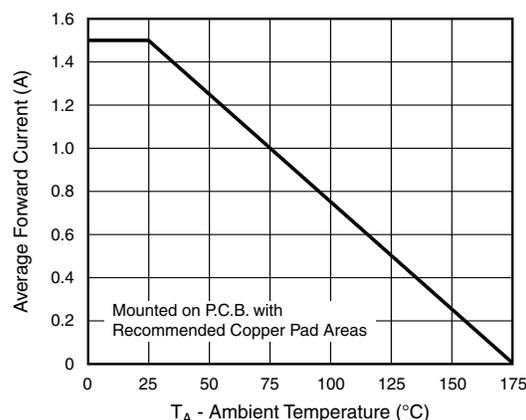


Figure 2. Forward Current Derating Curve



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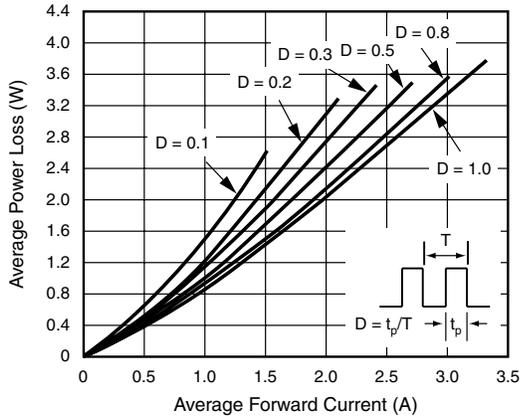


Figure 3. Forward Power Loss Characteristics

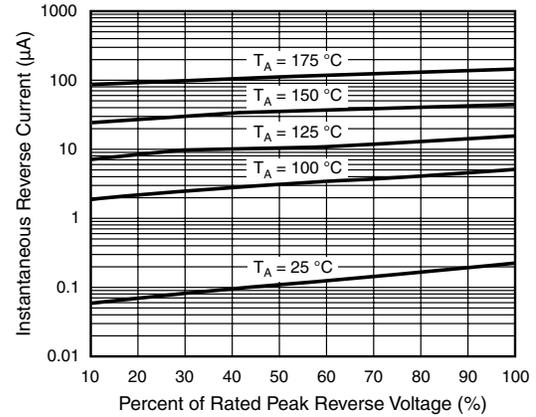


Figure 5. Typical Reverse Characteristics

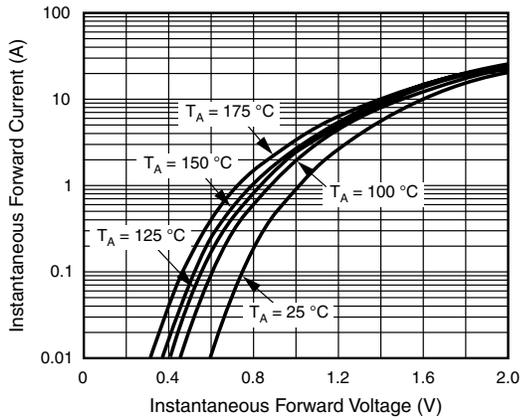


Figure 4. Typical Instantaneous Forward Characteristics

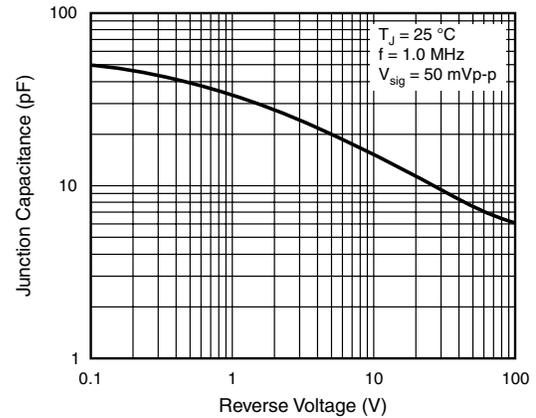
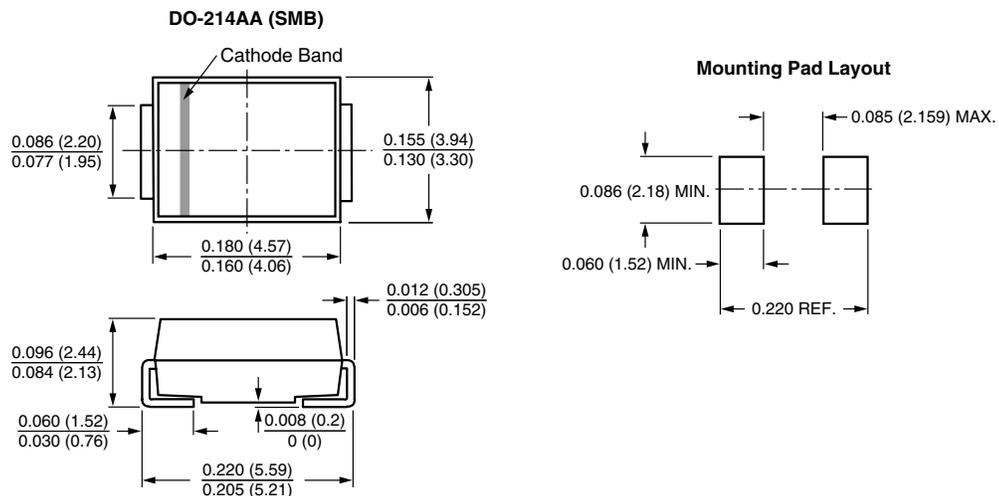


Figure 6. Typical Junction Capacitance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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