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## MURS340S, MURS360S

Vishay General Semiconductor

### Surface Mount Ultrafast Plastic Rectifier



DO-214AA (SMB)

#### 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](http://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:** 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

Base P/NHE3\_X - RoHS-compliant, 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 suffix meets JESD 201 class 2 whisker test, HE3 suffix 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
Package	DO-214AA (SMB)
Diode variation	Single die

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	MURS340S	MURS360S	UNIT
Device marking codes		3GS	3JS	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	400	600	V
Maximum average forward rectified current — T <sub>M</sub> = 130 °C	I <sub>F(AV)</sub> <sup>(1)</sup>	3.0		A
	T <sub>A</sub> = 25 °C I <sub>F(AV)</sub> <sup>(2)</sup>	1.5		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	35		A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-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 ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	MURS340S	MURS360S
Maximum instantaneous forward voltage	$I_F = 3.0\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	$V_F^{(1)}$	1.45	
		$T_J = 150\text{ }^{\circ}\text{C}$		1.20	
Maximum instantaneous reverse current	Rated $V_R$	$T_J = 25\text{ }^{\circ}\text{C}$	$I_R^{(2)}$	5.0	
		$T_J = 150\text{ }^{\circ}\text{C}$		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	
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	

## 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 <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	MURS340S	MURS360S	UNIT
Typical thermal resistance	R <sub>θJM</sub> <sup>(1)</sup>	12		°C/W
	R <sub>θJA</sub> <sup>(2)</sup>	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 <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
MURS360SHE3_A/H <sup>(1)</sup>	0.093	H	750	7" diameter plastic tape and reel
MURS360SHE3_A/I <sup>(1)</sup>	0.093	I	3200	13" diameter plastic tape and reel

## Note

(1) AEC-Q101 qualified



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

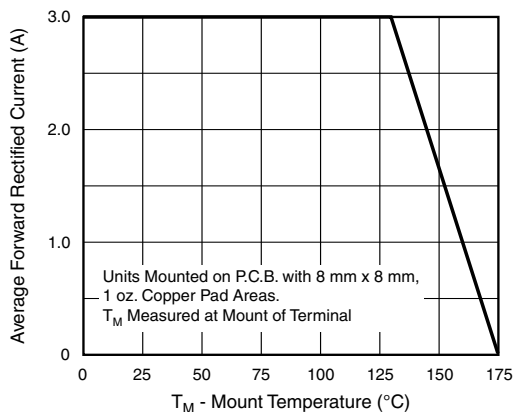


Fig. 1 - Forward Current Derating Curve

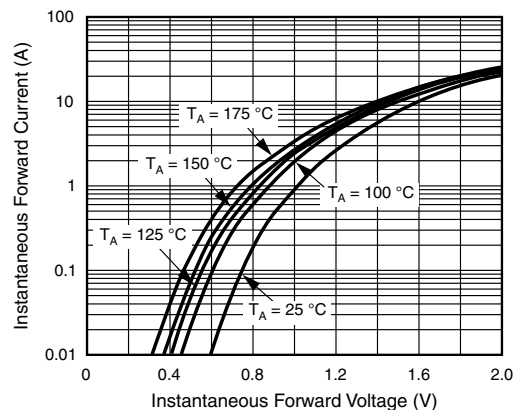


Fig. 4 - Typical Instantaneous Forward Characteristics

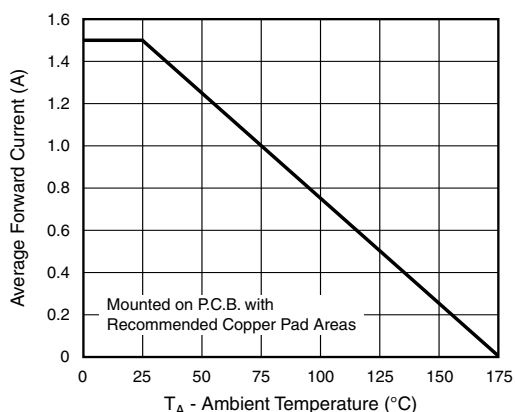


Fig. 2 - Forward Current Derating Curve

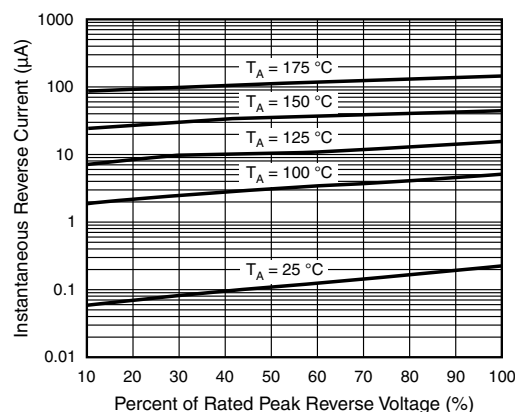


Fig. 5 - Typical Reverse Characteristics

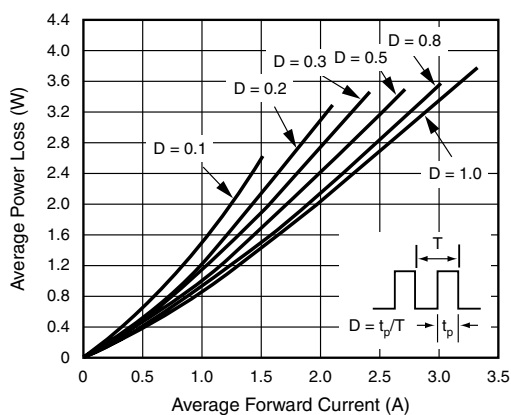


Fig. 3 - Forward Power Loss Characteristics

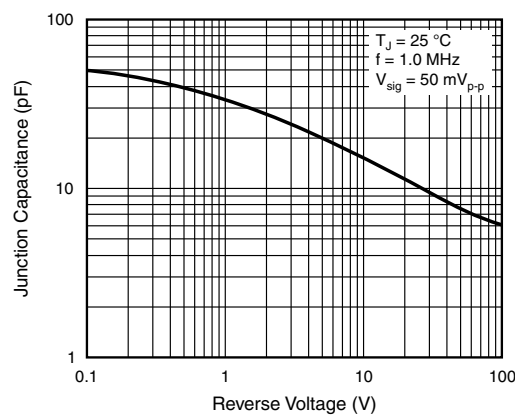


Fig. 6 - Typical Junction Capacitance

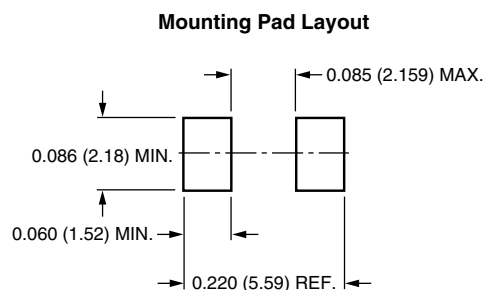
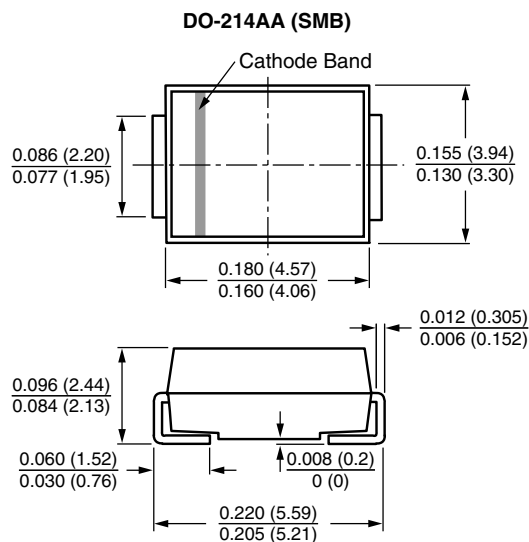


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### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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