

## Surface-Mount Ultrafast Plastic Rectifier


**SMB (DO-214AA)**

Cathode  Anode

### LINKS TO ADDITIONAL RESOURCES



### PRIMARY CHARACTERISTICS

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$I_{F(AV)}$	2.0 A
$V_{RRM}$	400 V, 600 V
$I_{FSM}$	35 A
$t_{rr}$	50 ns
$V_F$	1.20 V
$T_J$ max.	175 °C
Package	SMB (DO-214AA)
Circuit configuration	Single

### FEATURES

- Glass passivated pellet chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- 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:** 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, 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

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	MURS240	MURS260	UNIT
Device marking codes		M2G	M2J	
Maximum repetitive peak reverse voltage	$V_{RRM}$	400	600	V
Maximum average forward rectified current at $T_L = 125$ °C (fig. 1)	$I_{F(AV)}$	2.0		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

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

PARAMETER	TEST CONDITIONS		SYMBOL	MURS240	MURS260	UNIT
Maximum instantaneous forward voltage	$I_F = 2.0 \text{ A}$	$T_J = 25^\circ\text{C}$	$V_F$ <sup>(1)</sup>	1.45	1.20	V
		$T_J = 125^\circ\text{C}$		1.20		
Maximum instantaneous reverse current	Rated $V_R$	$T_J = 25^\circ\text{C}$	$I_R$ <sup>(2)</sup>	5.0	150	$\mu\text{A}$
		$T_J = 125^\circ\text{C}$		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
Maximum forward recovery time	$I_F = 1.0 \text{ A}$ , $dI/dt = 100 \text{ A}/\mu\text{s}$ , recovery to 1.0 V		$t_{fr}$	50		ns

**Notes**

(1) Pulse test:  $t_p = 300 \mu\text{s}$ , duty cycle  $\leq 2\%$

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

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

PARAMETER	SYMBOL	MURS240	MURS260	UNIT
Typical thermal resistance junction to lead	$R_{\theta JL}$	15		$^\circ\text{C}/\text{W}$

**Note**

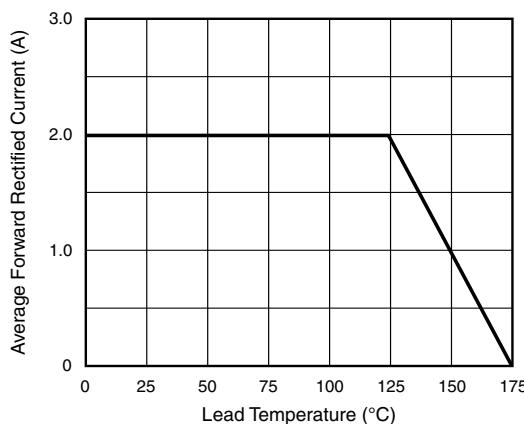
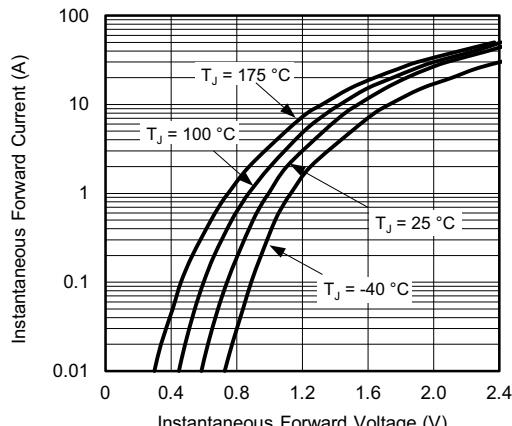
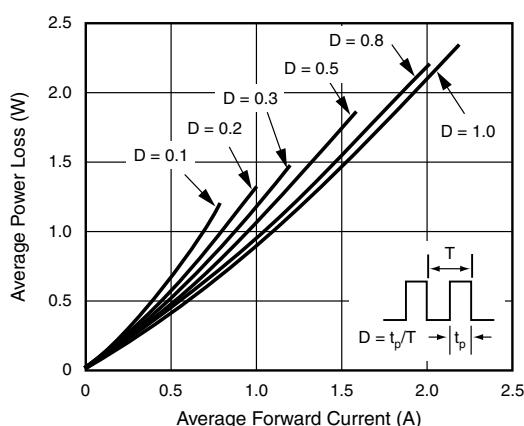
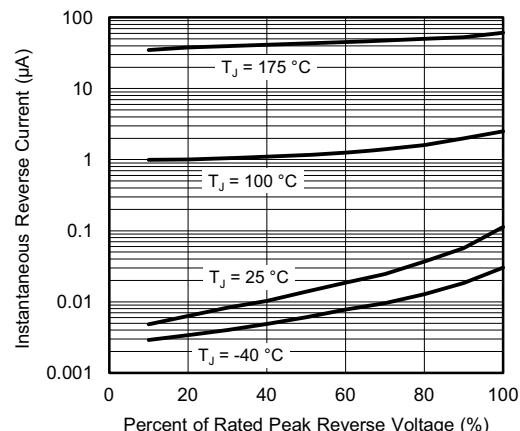
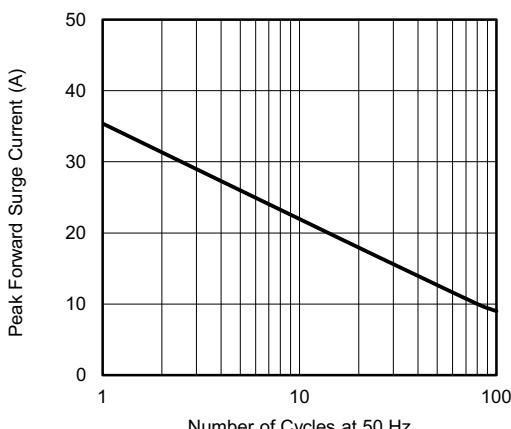
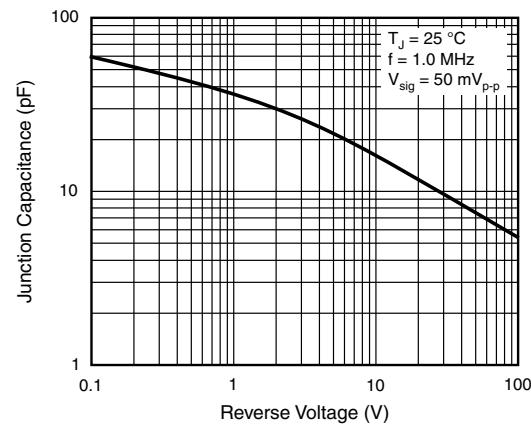
(1) Units mounted on PCB with 30 mm x 30 mm copper pad areas

**ORDERING INFORMATION** (Example)

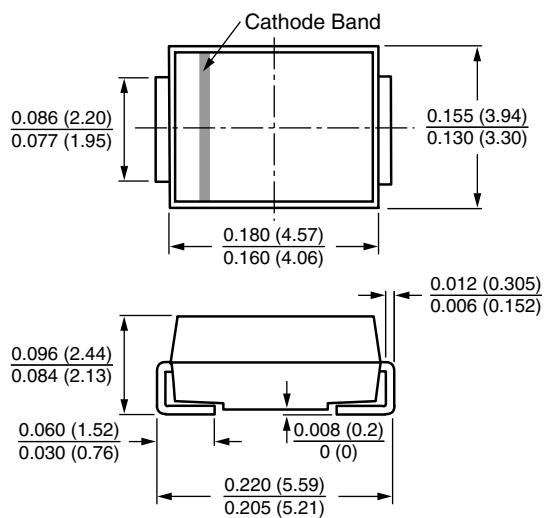
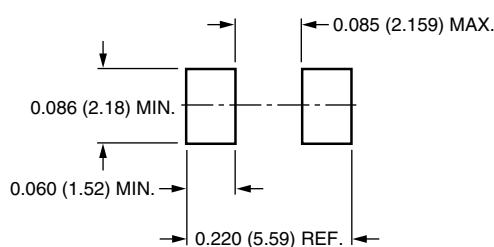
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MURS240-E3/52T	0.093	52T	750	7" diameter plastic tape and reel
MURS240-E3/5BT	0.093	5BT	3200	13" diameter plastic tape and reel
MURS240HE3_A/H <sup>(1)</sup>	0.093	H	750	7" diameter plastic tape and reel
MURS240HE3_A/I <sup>(1)</sup>	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 Power Loss Characteristics**

**Fig. 5 - Typical Reverse Leakage Characteristics**

**Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current**

**Fig. 6 - Typical Junction Capacitance**

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**SMB (DO-214AA)**

**Mounting Pad Layout**


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