

## 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
- 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:** 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	
$I_{F(AV)}$	2.0 A
$V_{RRM}$	400 V, 600 V
$I_{FSM}$	35 A
$t_{rr}$	50 ns
$V_F$	1.20 V
$T_J \text{ max.}$	175 °C
Package	DO-214AA (SMB)
Diode variation	Single die

MAXIMUM RATINGS ( $T_A = 25 \text{ °C}$ 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 $T_L = 125 \text{ °C}$ (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 <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	MURS240	MURS260	UNIT
Maximum instantaneous forward voltage	I <sub>F</sub> = 2.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub> (1)	1.45		V
		T <sub>J</sub> = 125 °C		1.20		
Maximum instantaneous reverse current	Rated V <sub>R</sub>	T <sub>J</sub> = 25 °C	I <sub>R</sub> (2)	5.0		μA
		T <sub>J</sub> = 125 °C		150		
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	50		ns
Maximum reverse recovery time	I <sub>F</sub> = 1.0 A, di/dt = 50 A/μs, V <sub>R</sub> = 30 V, I <sub>rr</sub> = 10 % I <sub>RM</sub>		t <sub>rr</sub>	75		ns
Maximum forward recovery time	I <sub>F</sub> = 1.0 A, di/dt = 100 A/μs, recovery to 1.0 V		t <sub>fr</sub>	50		ns

**Notes**

- (1) Pulse test: t<sub>p</sub> = 300 μs, duty cycle ≤ 2 %
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	MURS240	MURS260	UNIT
Typical thermal resistance junction to lead	R <sub>θJL</sub>	15		°C/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
MURS240HE3/52T (1)	0.093	52T	750	7" diameter plastic tape and reel
MURS240HE3/5BT (1)	0.093	5BT	3200	13" diameter plastic tape and reel
MURS240HE3_A/H (1)	0.093	H	750	7" diameter plastic tape and reel
MURS240HE3_A/I (1)	0.093	I	3200	13" diameter plastic tape and reel

**Note**

- (1) AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

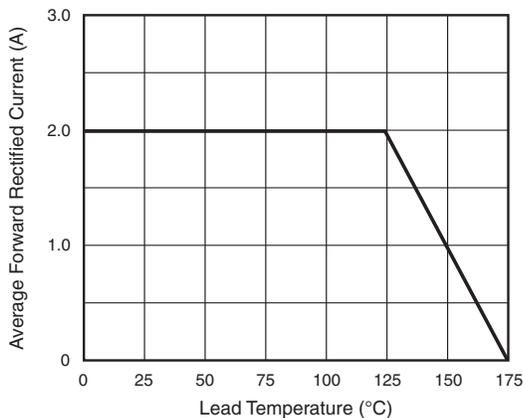


Fig. 1 - Forward Current Derating Curve

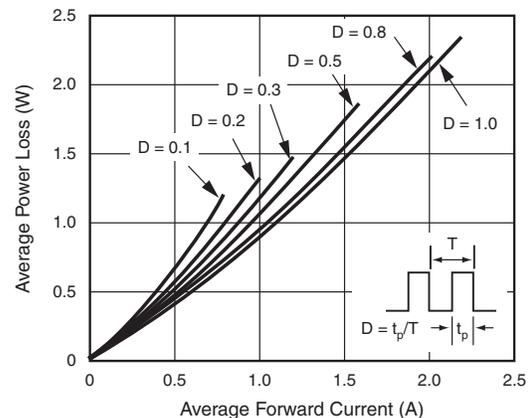


Fig. 2 - Forward Power Loss Characteristics

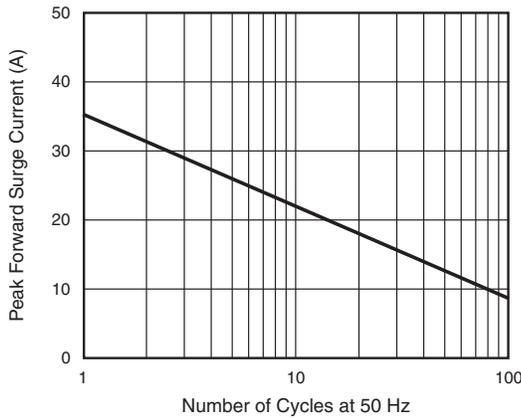


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

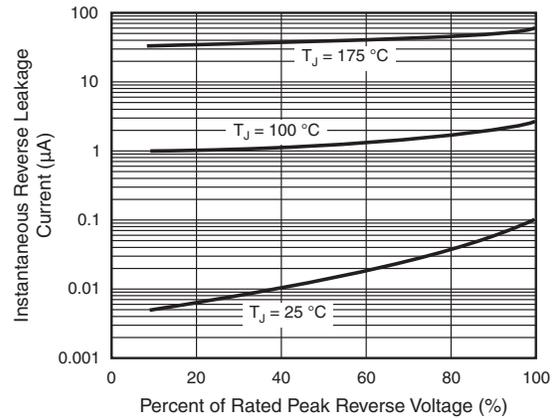


Fig. 5 - Typical Reverse Leakage Characteristics

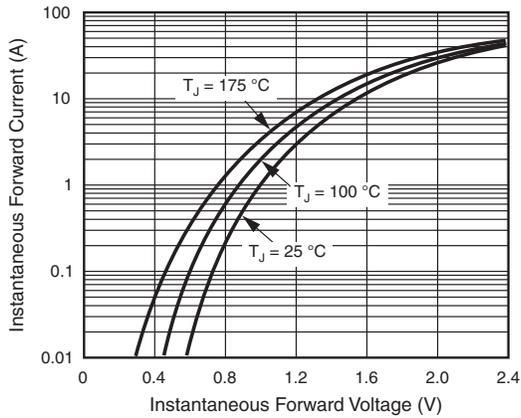


Fig. 4 - Typical Instantaneous Forward Characteristics

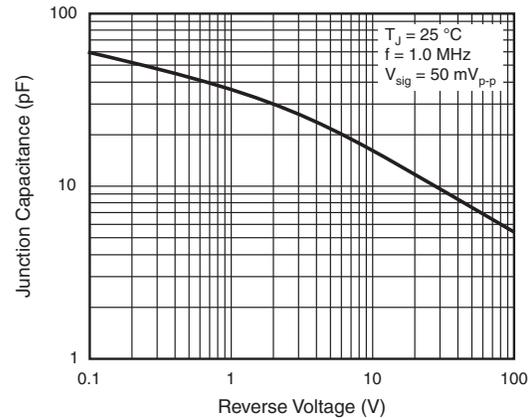
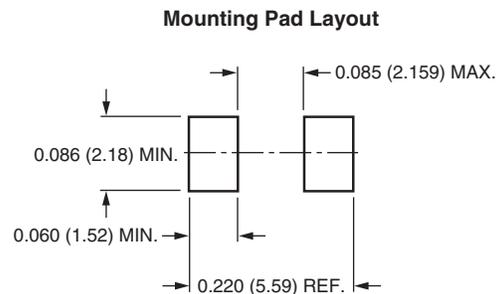
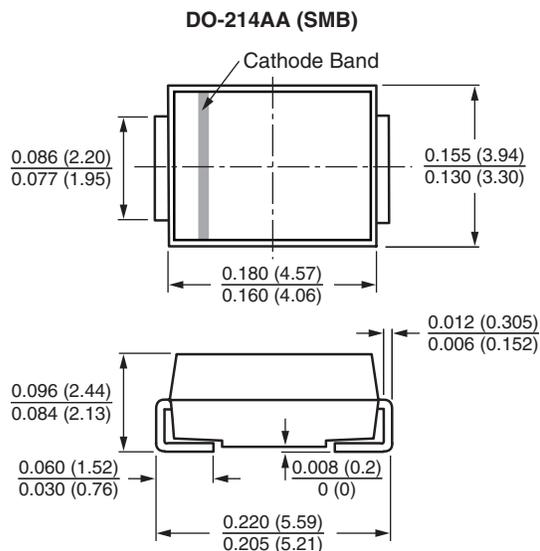


Fig. 6 - Typical Junction Capacitance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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