

# Surface-Mount Ultrafast Plastic Rectifier


**SMC (DO-214AB)**

Cathode  Anode

## LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
$V_{RRM}$	400 V, 600 V
$I_{FSM}$	125 A
$t_{rr}$	50 ns
$V_F$	1.05 V
$T_J$ max.	175 °C
Package	SMC (DO-214AB)
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 or P/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

## MECHANICAL DATA

**Case:** SMC (DO-214AB)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Base P/NHE3\_X - RoHS-compliant and AEC-Q101 qualified  
Base P/NHM3\_X - halogen-free, 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 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 <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	MURS340	MURS360	UNIT
Device marking code		MG	MJ	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	400	600	V
Working peak reverse voltage	V <sub>RWM</sub>	400	600	V
Maximum DC blocking voltage	V <sub>DC</sub>	400	600	V
Maximum average forward rectified current at: (fig. 1)	T <sub>L</sub> = 130 °C T <sub>L</sub> = 115 °C	3.0		A
		4.0		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	125		A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175		°C

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

PARAMETER	TEST CONDITIONS		SYMBOL	MURS340	MURS360	UNIT
Maximum instantaneous forward voltage	I <sub>F</sub> = 3.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	1.25		V
	I <sub>F</sub> = 4.0 A			1.28		
	I <sub>F</sub> = 3.0 A	T <sub>J</sub> = 150 °C		1.05		
Maximum instantaneous reverse current at rated DC blocking voltage		T <sub>J</sub> = 25 °C	I <sub>R</sub> <sup>(1)</sup>	10		μA
		T <sub>J</sub> = 150 °C		250		
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>	25		ns

**Note**(1) Pulse test:  $t_p = 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$ **THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	MURS340	MURS360	UNIT
Typical thermal resistance junction to lead	$R_{\theta JL}$	11		$^{\circ}\text{C}/\text{W}$

**ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MURS360-E3/57T	0.211	57T	850	7" diameter plastic tape and reel
MURS360-E3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel
MURS360HE3_A/H <sup>(1)</sup>	0.211	H	850	7" diameter plastic tape and reel
MURS360HE3_A/I <sup>(1)</sup>	0.211	I	3500	13" diameter plastic tape and reel
MURS360-M3/57T	0.211	57T	850	7" diameter plastic tape and reel
MURS360-M3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel
MURS360HM3_A/H <sup>(1)</sup>	0.211	H	850	7" diameter plastic tape and reel
MURS360HM3_A/I <sup>(1)</sup>	0.211	I	3500	13" diameter plastic tape and reel

**Note**

(1) AEC-Q101 qualified



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

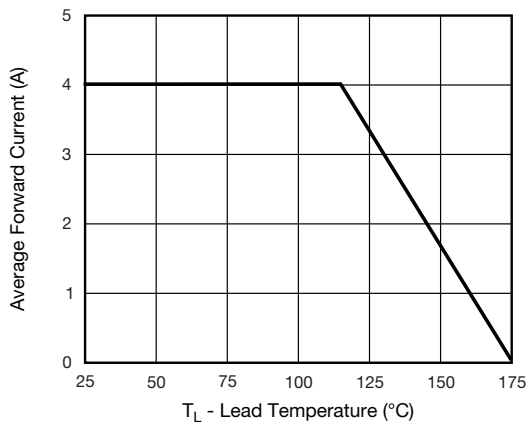


Fig. 1 - Forward Current Derating Curve

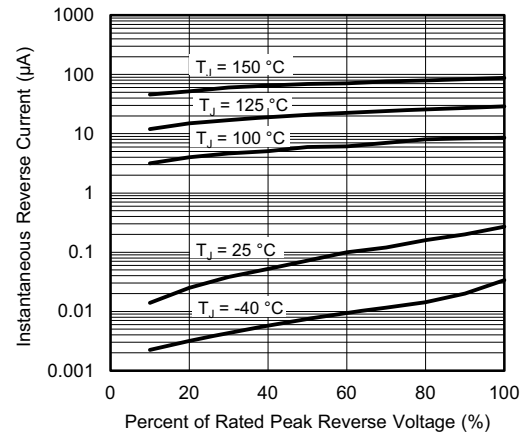


Fig. 4 - Typical Reverse Characteristics

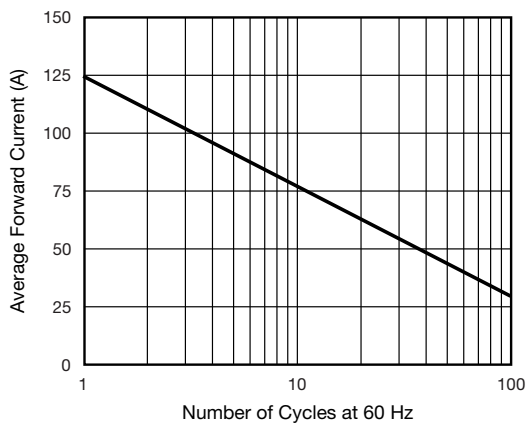


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

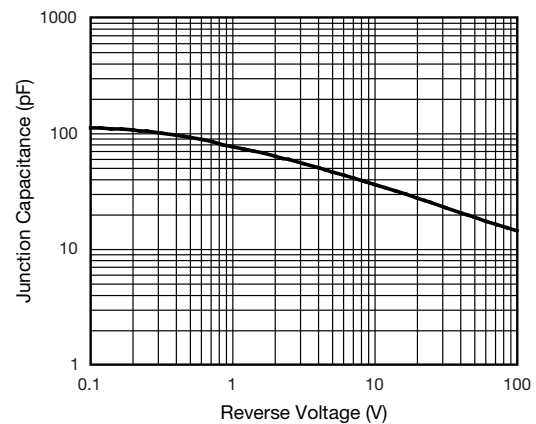


Fig. 5 - Typical Junction Capacitance

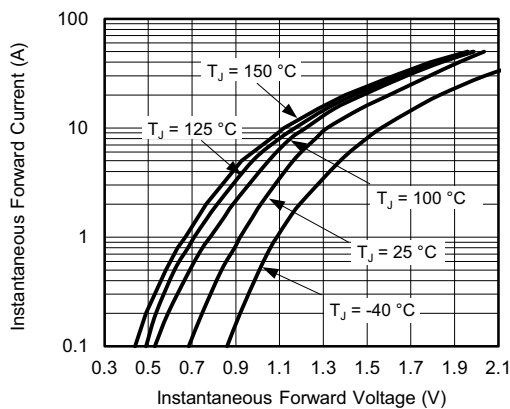


Fig. 3 - Typical Instantaneous Forward Characteristics

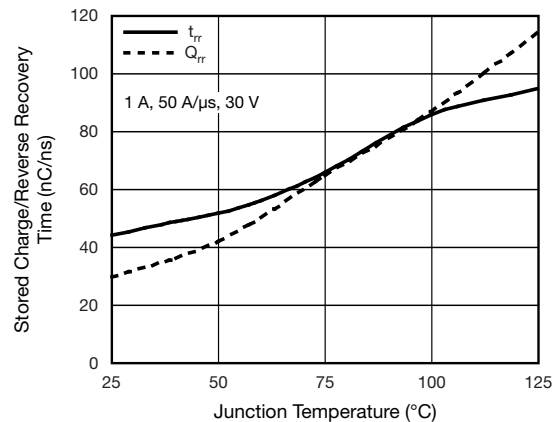
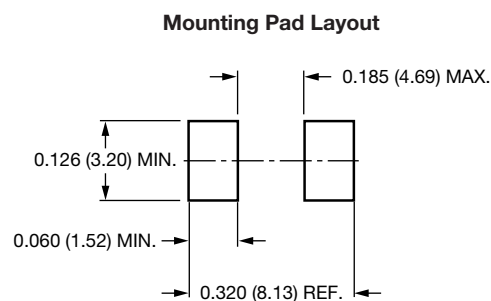
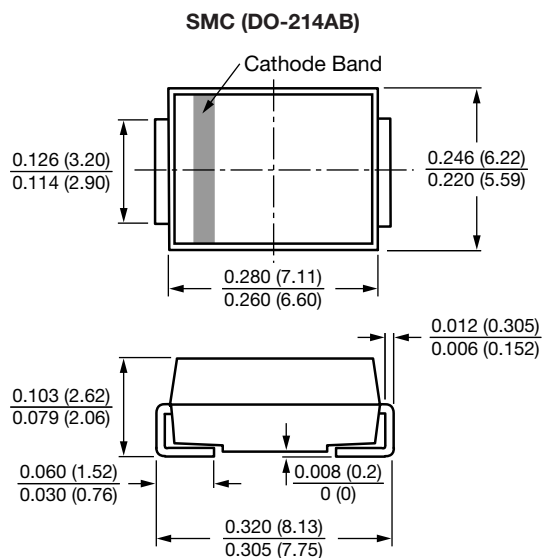


Fig. 6 - Typical Reverse Switching Characteristics



## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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