

Surface Mount Ultrafast Plastic Rectifier


SMC (DO-214AB)

RoHS
 COMPLIANT
 HALOGEN
FREE
Available

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

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

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
$T_J \text{ max.}$	175 °C
Package	SMC (DO-214AB)
Diode variation	Single

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MURS340	MURS360	UNIT
Device marking code		MG	MJ	
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	V
Working peak reverse voltage	V_{RWM}	400	600	V
Maximum DC blocking voltage	V_{DC}	400	600	V
Maximum average forward rectified current at: (fig. 1)	$I_{F(AV)}$	$T_L = 130\text{ °C}$		A
		$T_L = 115\text{ °C}$		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	125		A
Operating junction and storage temperature range	T_J, T_{STG}	-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	$I_F = 3.0\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	1.25	V	
	$I_F = 4.0\text{ A}$			1.28		
	$I_F = 3.0\text{ A}$	$T_J = 150\text{ }^\circ\text{C}$		1.05		
Maximum instantaneous reverse current at rated DC blocking voltage			$I_R^{(1)}$	10	μA	
				$T_J = 150\text{ }^\circ\text{C}$		250
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}	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	750	7" diameter plastic tape and reel
MURS360-E3/9AT	0.211	9AT	3200	13" diameter plastic tape and reel
MURS360HE3_A/H ⁽¹⁾	0.211	H	750	7" diameter plastic tape and reel
MURS360HE3_A/I ⁽¹⁾	0.211	I	3200	13" diameter plastic tape and reel
MURS360-M3/57T	0.211	57T	750	7" diameter plastic tape and reel
MURS360-M3/9AT	0.211	9AT	3200	13" diameter plastic tape and reel
MURS360HM3_A/H ⁽¹⁾	0.211	H	750	7" diameter plastic tape and reel
MURS360HM3_A/I ⁽¹⁾	0.211	I	3200	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified



RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

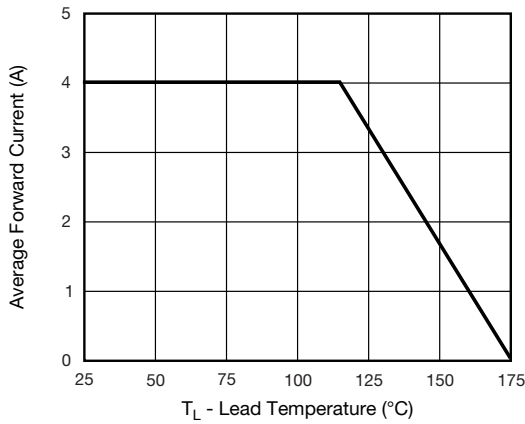


Fig. 1 - Forward Current Derating Curve

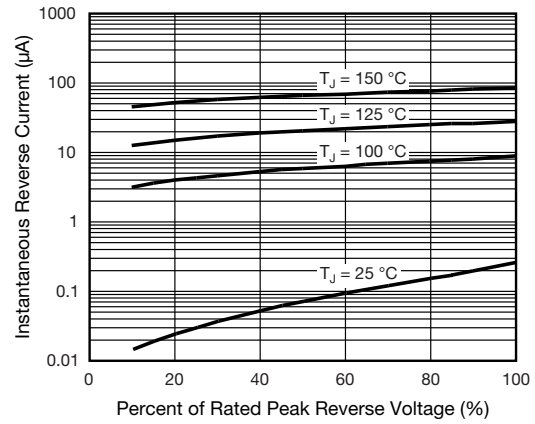


Fig. 4 - Typical Reverse Characteristics

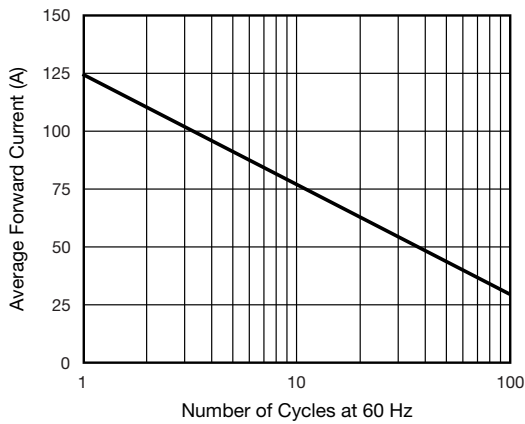


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

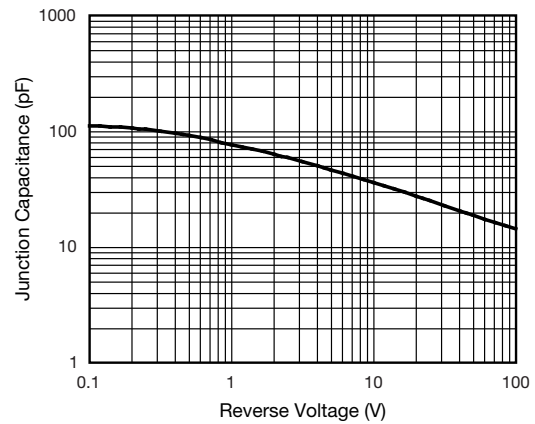


Fig. 5 - Typical Junction Capacitance

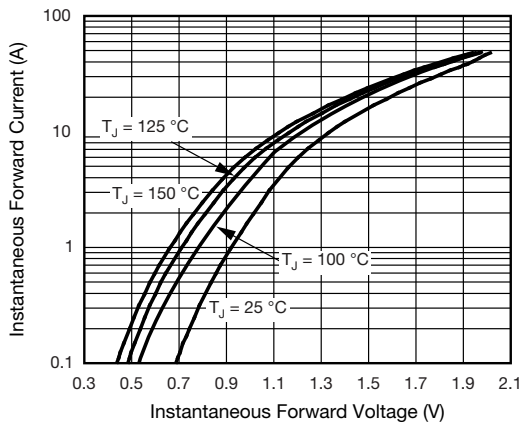


Fig. 3 - Typical Instantaneous Forward Characteristics

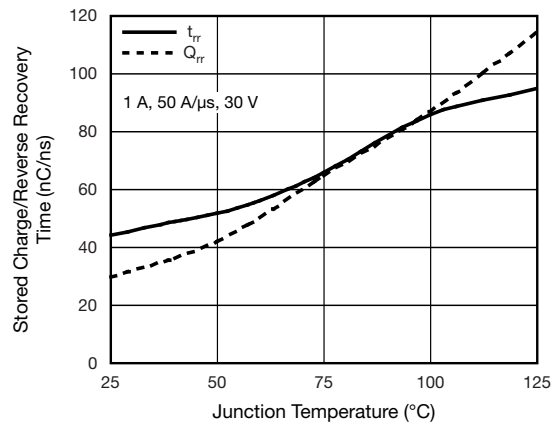
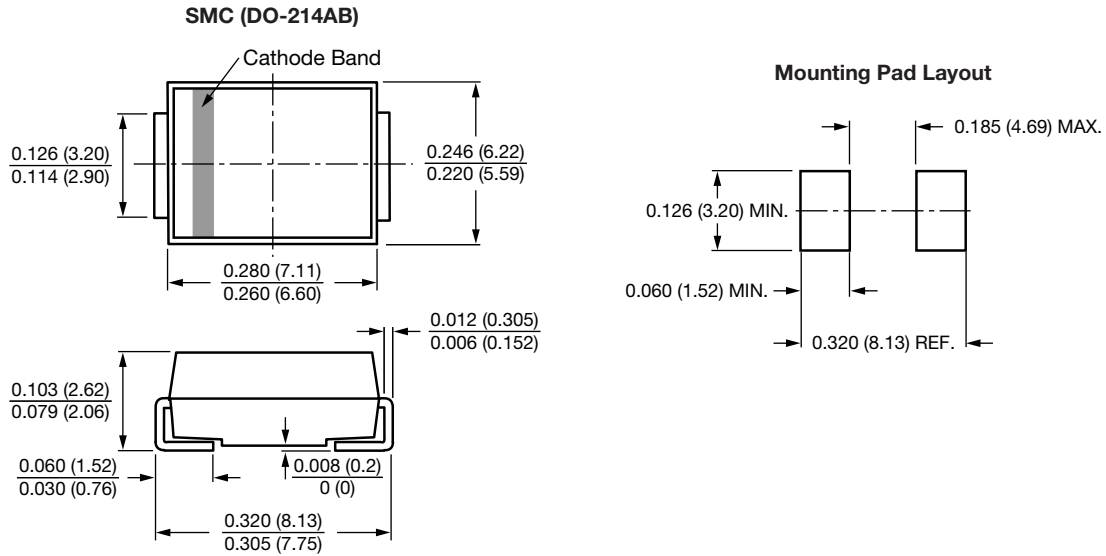


Fig. 6 - Typical Reverse Switching Characteristics



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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