Switch-mode Power Rectifiers

MURS480ET3G

Ultrafast “E” Series with High Reverse Energy Capability

These state−of−the−art devices are designed for use in switching power supplies, inverters and as free wheeling diodes.

Features

- 20 mJ Avalanche Energy Guaranteed
- Excellent Protection Against Voltage Transients in Switching Inductive Load Circuits
- Ultrafast 75 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction
- Reverse Voltage to 800 V
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 217 mg (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped in 16 mm Tape & Reel, 2500 Units per Reel
- Polarity: Polarity Band on Plastic Body Indicates Cathode Lead

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MURS480E	V_{RRM} V_{RWM} V_R	800	V
Average Rectified Forward Current	$I_{F(AV)}$	4.0 @ T_L=110°C	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	70	A
Operating Junction and Storage Temperature Range	T_J, T_{stg}	−65 to +175	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ULTRAFAST RECTIFIER
4.0 AMPERES, 800 VOLTS



SMC 2−LEAD
CASE 403AC

MARKING DIAGRAM



U4 = Specific Device Code
A = Assembly Location*
Y = Year
WW = Work Week

*The Assembly Location code (A) is front side optional. In cases where the Assembly Location is stamped in the package, the front side assembly code may be blank.

ORDERING INFORMATION

Device	Package	Shipping†
MURS480ET3G	SMC (Pb−Free)	2500/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Maximum Thermal Resistance, Junction−to−Lead	$R_{\theta JL}$	11	°C/W
Maximum Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	165	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 1) (i_F = 3.0 Amps, T_J = 150°C) (i_F = 3.0 Amps, T_J = 25°C) (i_F = 4.0 Amps, T_J = 25°C)	v_F	 1.53 1.75 1.85	V
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, T_J = 150°C) (Rated dc Voltage, T_J = 25°C)	i_R	 900 25	μA
Maximum Reverse Recovery Time (I_F = 1.0 A, di/dt = 50 A/μs) (I_F = 0.5 A, i_R = 1.0 A, I_{REC} = 0.25 A)	t_{rr}	 100 75	ns
Maximum Forward Recovery Time (I_F = 1.0 Amp, di/dt = 100 Amp/μs, Recovery to 1.0 V)	t_{fr}	75	ns
Controlled Avalanche Energy	W_{AVAL}	20	mJ

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

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TYPICAL ELECTRICAL CHARACTERISTICS

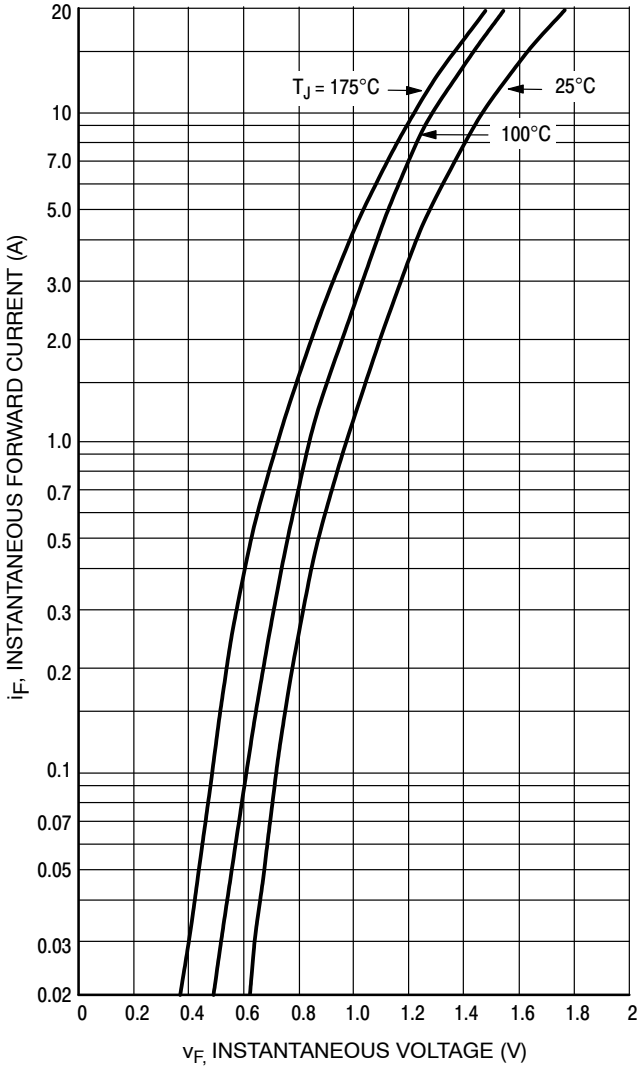

Figure 1. Typical Forward Voltage

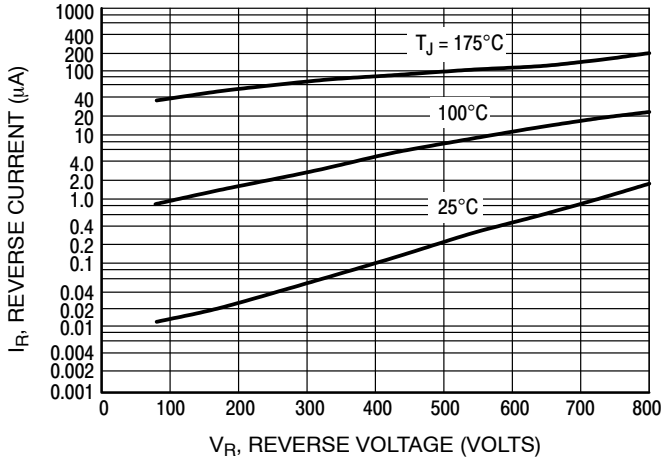

Figure 2. Typical Reverse Current

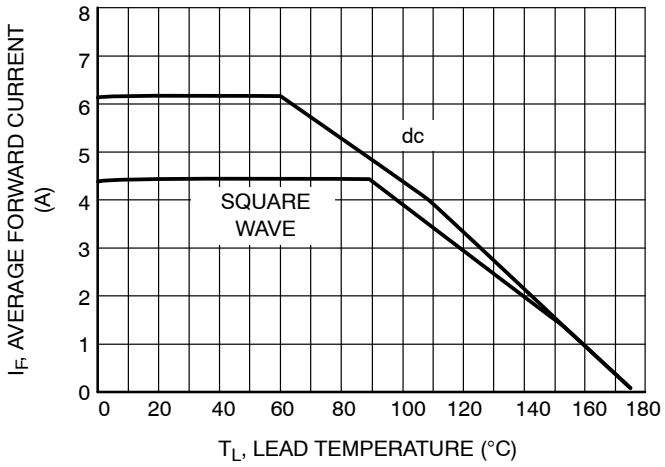

Figure 3. Current Derating Lead

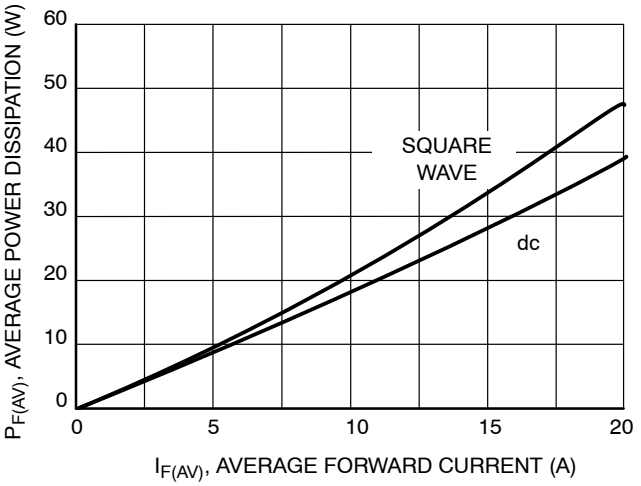

Figure 4. Power Dissipation

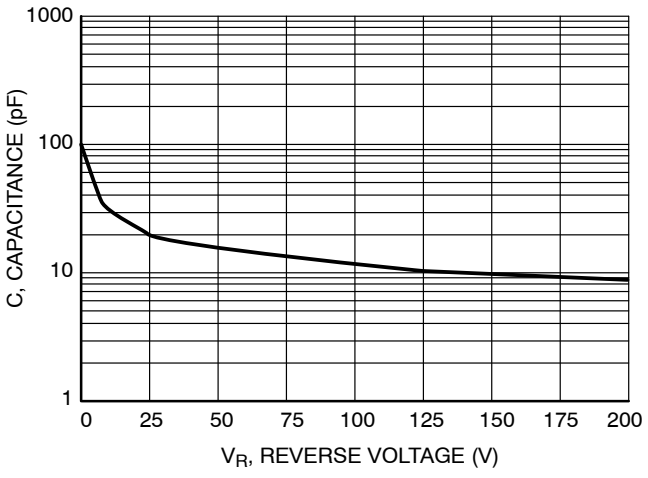

Figure 5. Typical Capacitance

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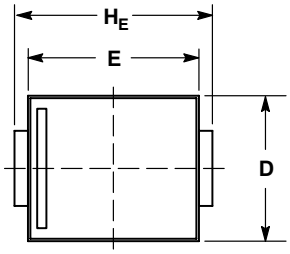
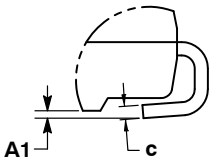
SCALE 1:1

SMC 2−LEAD
CASE 403AC
ISSUE B

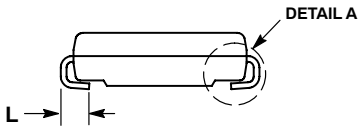
DATE 27 JUL 2017



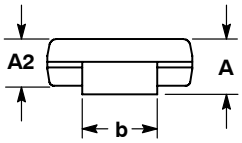
TOP VIEW



DETAIL A



SIDE VIEW

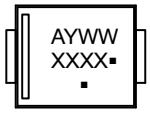


END VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED 0.254mm PER SIDE.
4. DIMENSIONS D AND E TO BE DETERMINED AT DATUM H.
5. DIMENSION b SHALL BE MEASURED WITHIN THE AREA DETERMINED BY DIMENSION L.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	1.95	2.61	0.077	0.103
A1	0.05	0.20	0.002	0.008
A2	1.90	2.41	0.075	0.095
b	2.90	3.20	0.114	0.126
c	0.15	0.41	0.006	0.016
D	5.55	6.25	0.219	0.246
E	6.60	7.15	0.260	0.281
H_E	7.75	8.15	0.305	0.321
L	0.75	1.60	0.030	0.063

GENERIC MARKING DIAGRAM*

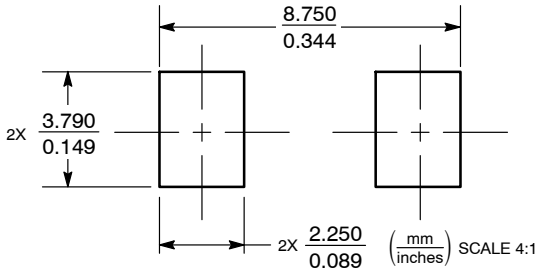


XXXX	= Specific Device Code
A	= Assembly Location
Y	= Year
WW	= Work Week
▪	= Pb−Free Package

(Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

RECOMMENDED SOLDERING FOOTPRINT*



*For additional information on our Pb−Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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DESCRIPTION:	**SMC 2−LEAD**		**PAGE 1 OF 1**

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