MURHS160T3

Preferred Device

MEGAHERTZ™ Power Rectifier

Features and Benefits

- Ultrafast 35 Nanosecond Recovery Times
- 175°C Operating Junction Temperature
- High Temperature Glass Passivated Junction
- High Voltage Capability to 600 V

Applications

- Power Supplies
- Inverters
- Free Wheeling Diodes

Mechanical Characteristics

- Case: Epoxy, Molded
- Epoxy Meets UL 94 V−0 @ 0.125 in
- Weight: 95 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
- Cathode Polarity Band
- This is a Pb−Free Device

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	600	V
Average Rectified Forward Current (Rated V_R, T_L = 145°C)	$I_{F(AV)}$	1.0	A
Nonrepetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	15	A
Operating Junction and Storage Temperature Range	T_J, T_{stg}	−65 to +175	°C
ESD Ratings: Machine Model = C Human Body Model = 3B		> 400 > 8000	V

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

ON Semiconductor®

http://onsemi.com

ULTRAFAST RECTIFIER 1.0 AMPERES 600 VOLTS





SMB
CASE 403A
PLASTIC

MARKING DIAGRAM



UH16 = Specific Device Code
AL = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MURHS160T3G	SMB (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 Specification Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

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THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Maximum Thermal Resistance, Junction−to−Lead (Note 1)	$R_{\theta JL}$	24	°C/W
Maximum Thermal Resistance, Junction−to−Ambient (Note 2)	$R_{\theta JA}$	80	°C/W

ELECTRICAL CHARACTERISTICS

Rating	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (Note 3) (I_F = 1.0 A, T_C = 25°C) (I_F = 1.0 A, T_C = 125°C)	V_F	 1.5 1.2	 2.4 1.7	V
Maximum Instantaneous Reverse Current (Note 3) (Rated dc Voltage, T_C = 25°C) (Rated dc Voltage, T_C = 125°C)	I_R	 0.18 5.0	 20 200	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}	 25 16	 35 30	ns

1. Mounted with minimum recommended pad size, PC Board FR4.
2. 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board.
3. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

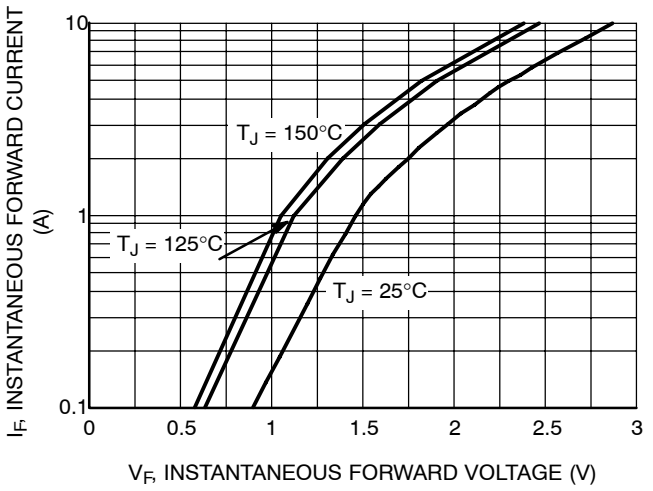


Figure 1. Typical Forward Voltage

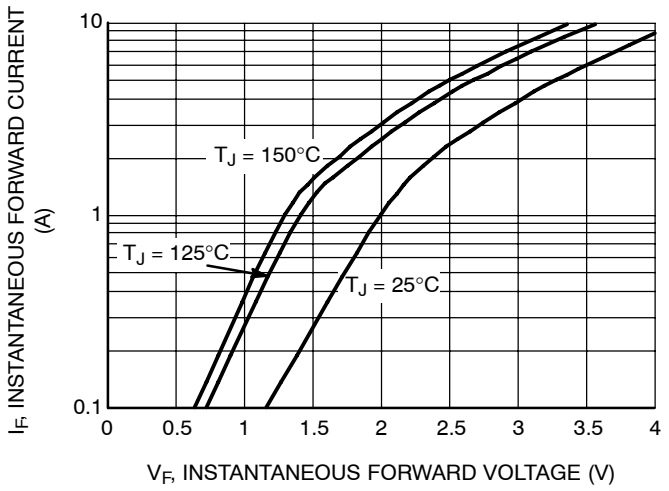


Figure 2. Maximum Forward Voltage

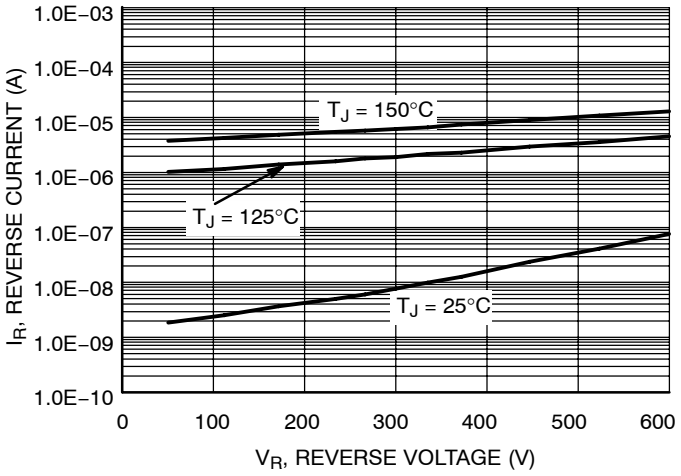


Figure 3. Typical Reverse Current

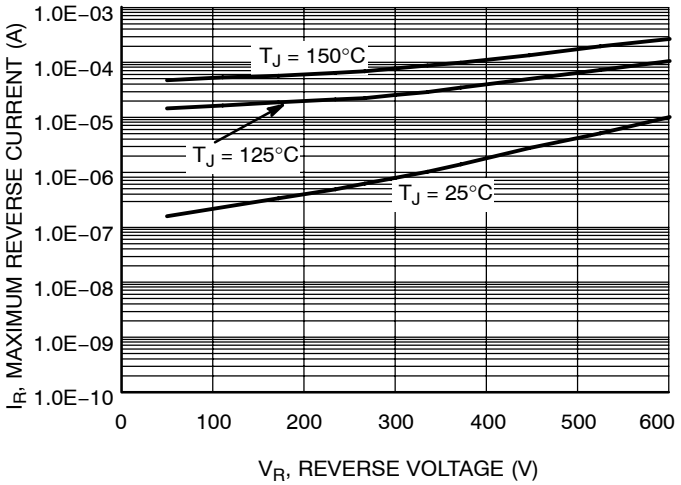


Figure 4. Maximum Reverse Current

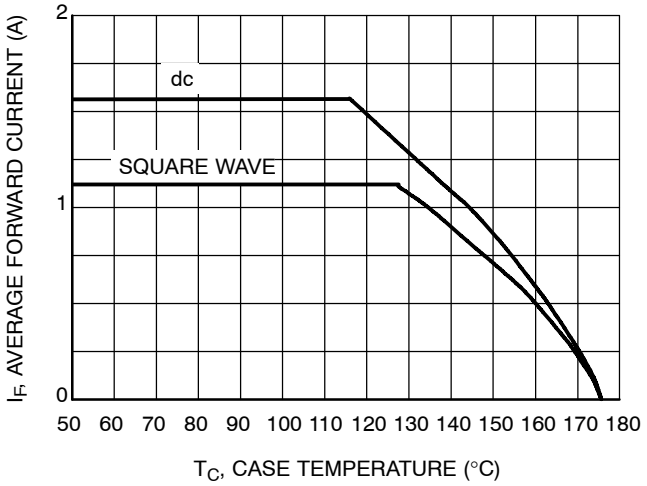


Figure 5. Current Derating

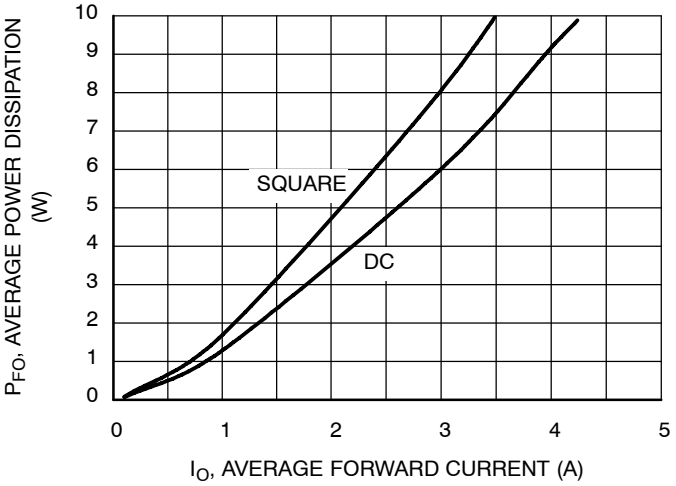


Figure 7. Forward Power Dissipation

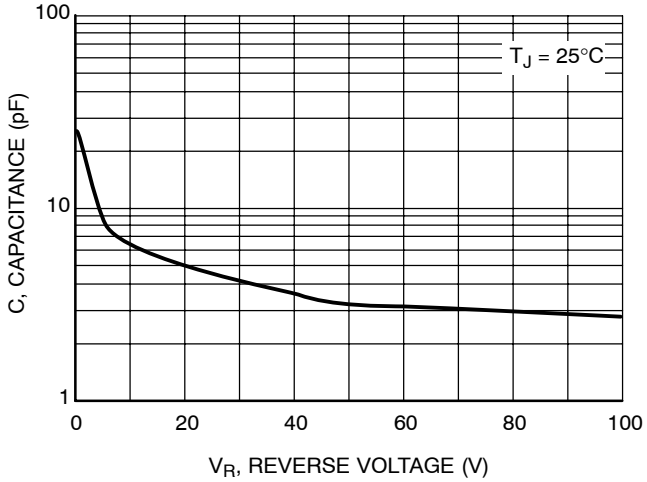


Figure 6. Capacitance

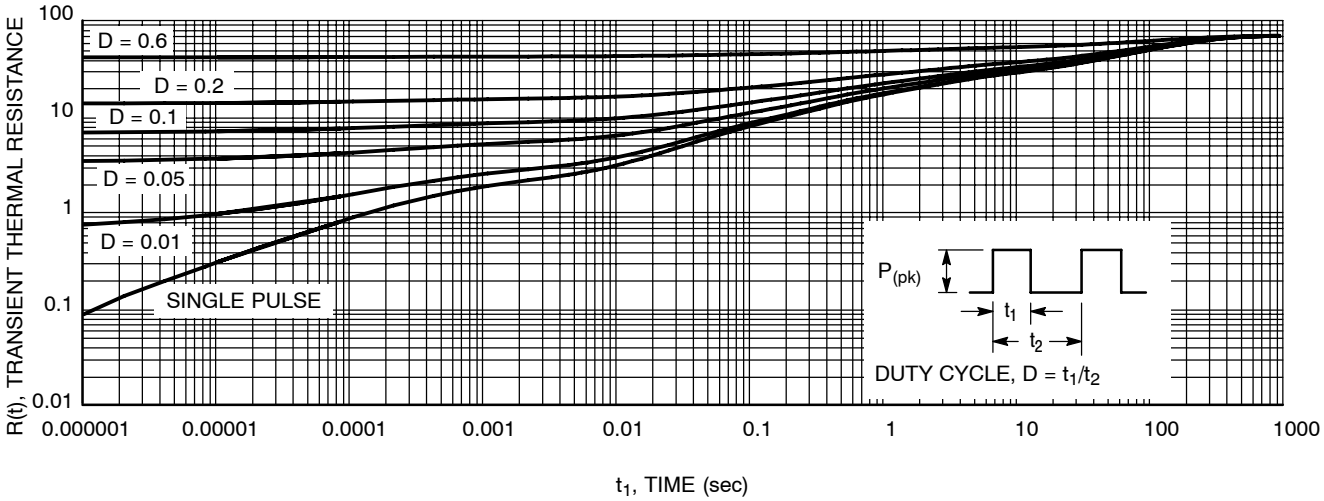
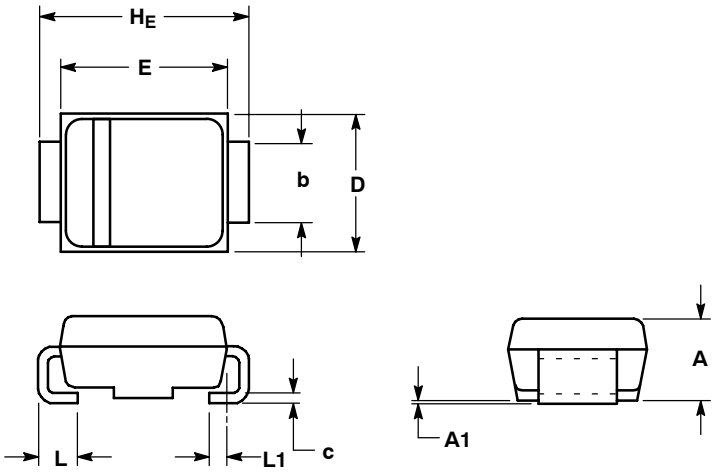


Figure 8. Thermal Response Junction−to−Ambient

PACKAGE DIMENSIONS

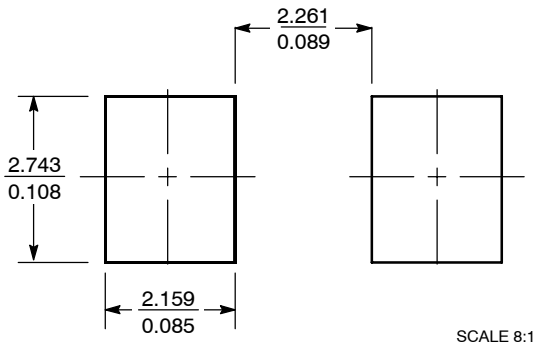
SMB
CASE 403A−03
ISSUE E



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	1.90	2.13	2.41	0.075	0.084	0.095
A1	0.05	0.10	0.15	0.002	0.004	0.006
b	1.96	2.03	2.11	0.077	0.080	0.083
c	0.15	0.23	0.30	0.006	0.009	0.012
D	3.30	3.56	3.81	0.130	0.140	0.150
E	4.06	4.32	4.57	0.160	0.170	0.180
H_E	5.21	5.44	5.59	0.205	0.214	0.220
L	0.76	1.02	1.27	0.030	0.040	0.050
L1	0.51 REF			0.020 REF		

SOLDERING FOOTPRINT*



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

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