MURS120T3 Series

Preferred Devices

Surface Mount Ultrafast Power Rectifiers

MURS105T3, MURS110T3, MURS115T3, MURS120T3, MURS140T3, MURS160T3

Ideally suited for high voltage, high frequency rectification, or as free wheeling and protection diodes in surface mount applications where compact size and weight are critical to the system.

- Small Compact Surface Mountable Package with J–Bend Leads
- Rectangular Package for Automated Handling
- High Temperature Glass Passivated Junction
- Low Forward Voltage Drop (0.71 to 1.05 Volts Max @ 1.0 A, T_J = 150°C)

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 95 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped in 12 mm Tape and Reel, 2500 units per reel
- Polarity: Polarity Band Indicates Cathode Lead
- Marking: U1A, U1B, U1C, U1D, U1G, U1J

MAXIMUM RATINGS

Please See the Table on the Following Page

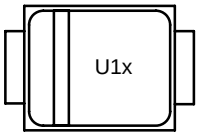
ON Semiconductor™

http://onsemi.com

ULTRAFAST RECTIFIERS
1.0 AMPERE
50–600 VOLTS

SMB
CASE 403A

MARKING DIAGRAM



U1x= Device Code
x = Specific Device Code
A, B, C, D, G or J

ORDERING INFORMATION

See detailed ordering and shipping information in the table on page 2 of this data sheet.

DEVICE MARKING INFORMATION

See general marking information in the device marking table on page 2 of this data sheet.

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

MAXIMUM RATINGS

Rating	Symbol	MURS 105T3	MURS 110T3	MURS 115T3	MURS 120T3	MURS 140T3	MURS 160T3	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	400	600	Volts
Average Rectified Forward Current	$I_{F(AV)}$	1.0 @ T_L = 155°C 2.0 @ T_L = 145°C				1.0 @ T_L = 150°C 2.0 @ T_L = 125°C		Amps
Non–Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	40				35		Amps
Operating Junction Temperature	T_J	– 65 to +175						°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction to Lead (T_L = 25°C)	$R_{\theta JL}$	13	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1.) (i_F = 1.0 A, T_J = 25°C) (i_F = 1.0 A, T_J = 150°C)	v_F	0.875 0.71	1.25 1.05	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, T_J = 25°C) (Rated dc Voltage, T_J = 150°C)	i_R	2.0 50	5.0 150	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_R to 0.25 A)	t_{rr}	35 25	75 50	ns
Maximum Forward Recovery Time (i_F = 1.0 A, di/dt = 100 A/μs, Rec. to 1.0 V)	t_{fr}	25	50	ns

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

DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Package	Shipping
MURS105T3	U1A	SMB	2500 Units/Tape & Reel
MURS110T3	U1B	SMB	2500 Units/Tape & Reel
MURS115T3	U1C	SMB	2500 Units/Tape & Reel
MURS120T3	U1D	SMB	2500 Units/Tape & Reel
MURS140T3	U1G	SMB	2500 Units/Tape & Reel
MURS160T3	U1J	SMB	2500 Units/Tape & Reel

MURS105T3, MURS110T3, MURS115T3, MURS120T3

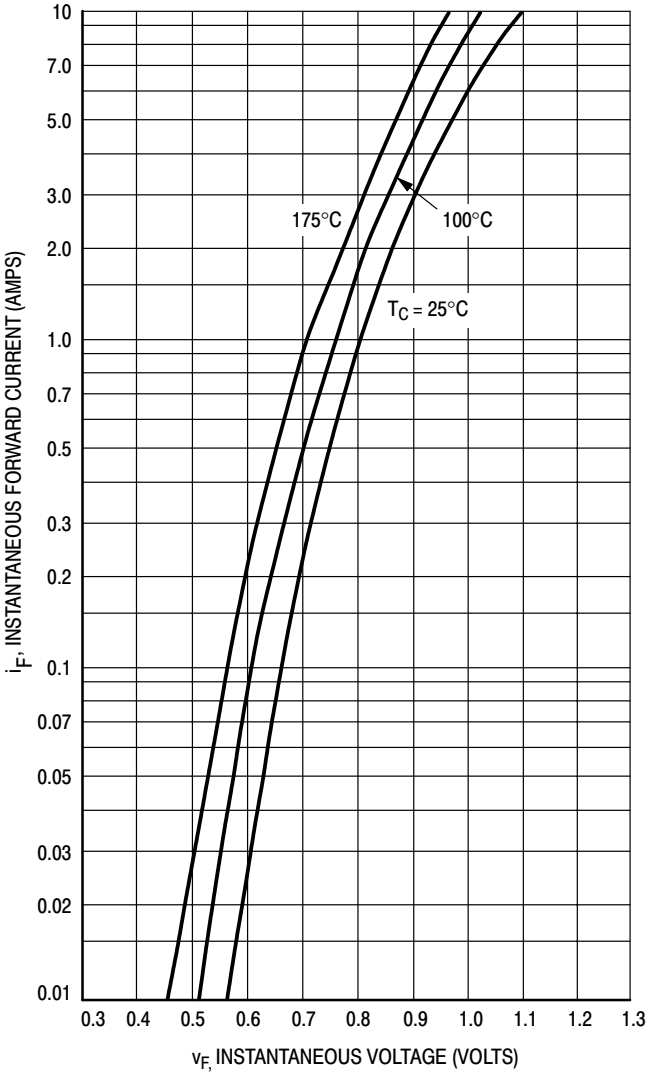


Figure 1. Typical Forward Voltage

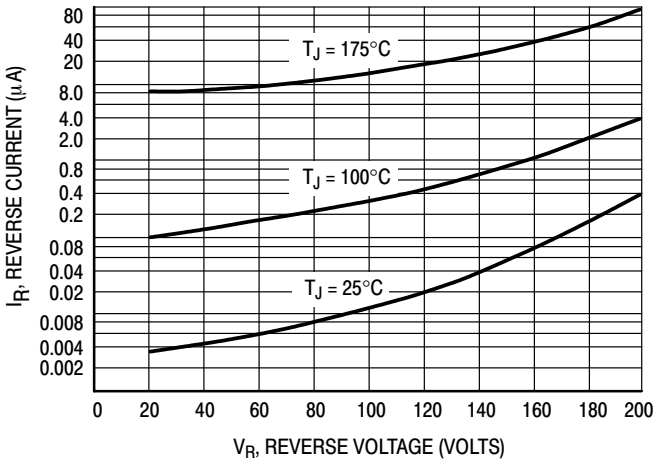


Figure 2. Typical Reverse Current*

* The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if applied V_R is sufficiently below rated V_R.

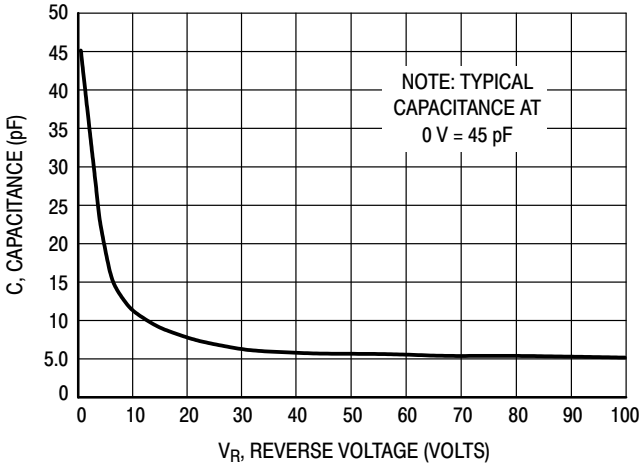


Figure 3. Typical Capacitance

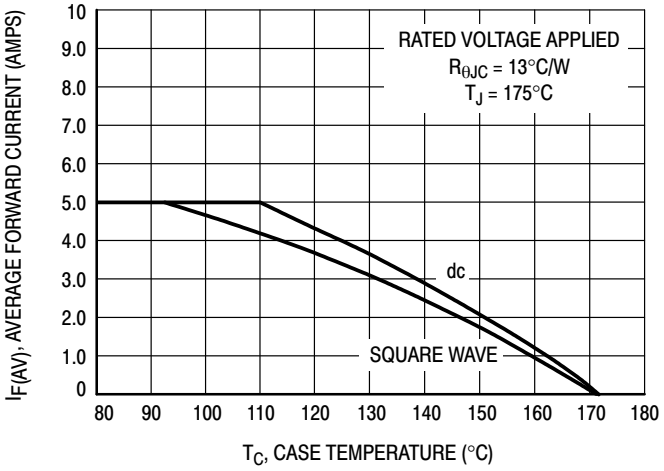


Figure 4. Current Derating, Case

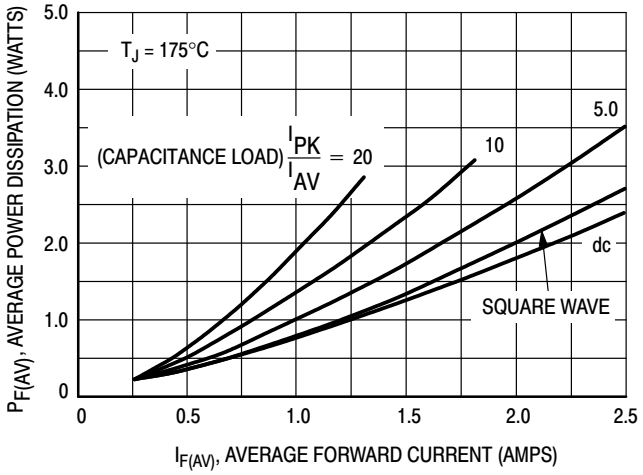


Figure 5. Power Dissipation

MURS140T3, MURS160T3

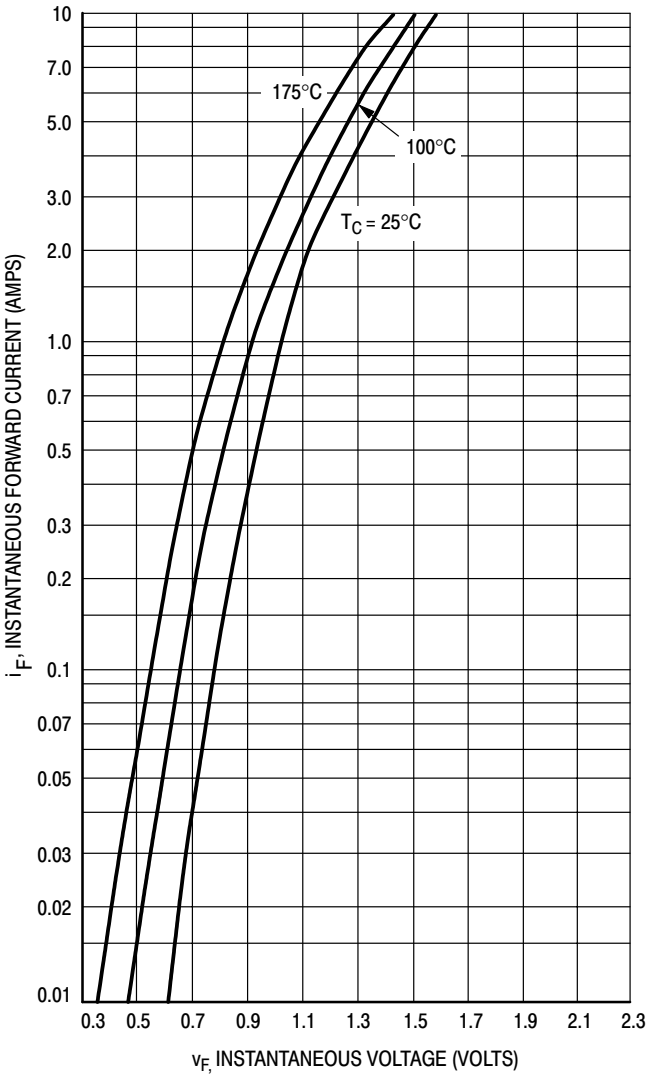


Figure 6. Typical Forward Voltage

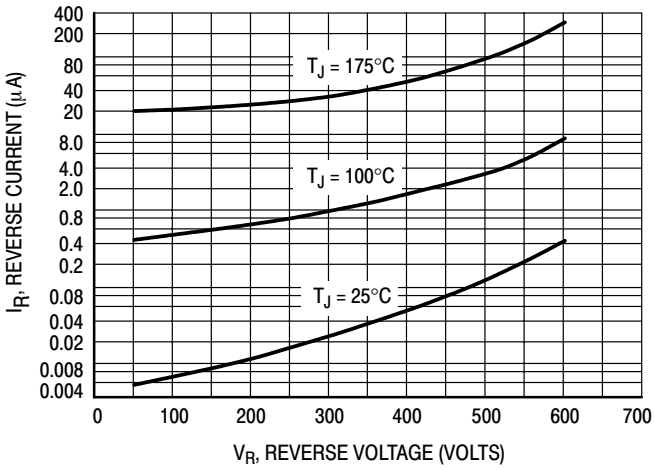


Figure 7. Typical Reverse Current*

* The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if applied V_R is sufficiently below rated V_R.

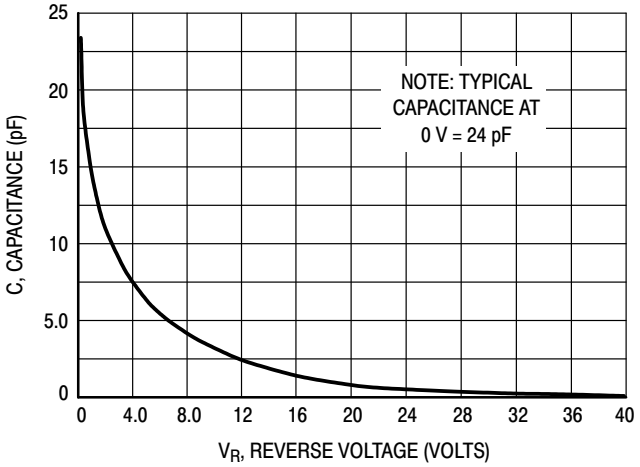


Figure 8. Typical Capacitance

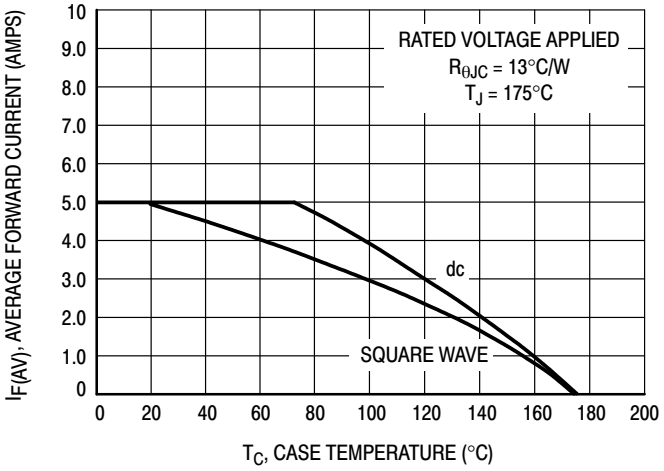


Figure 9. Current Derating, Case

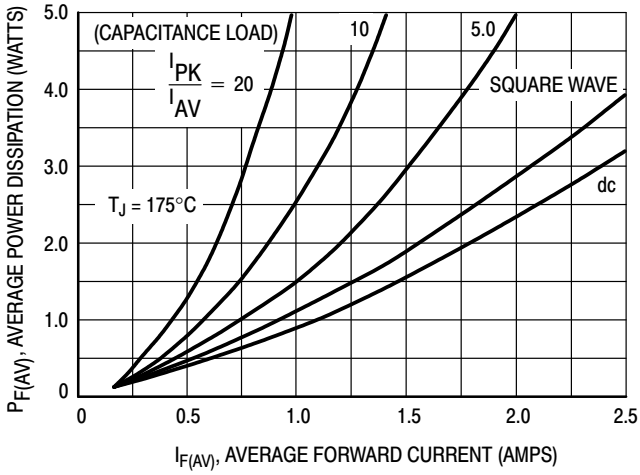
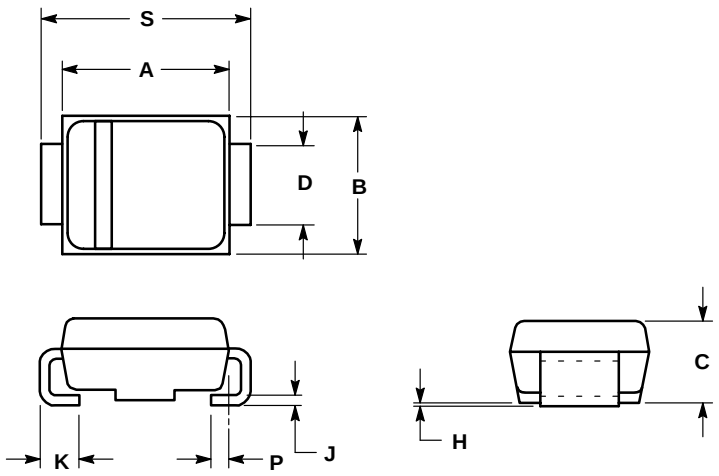


Figure 10. Power Dissipation

PACKAGE DIMENSIONS

SMB
DO–214AA
CASE 403A–03
ISSUE D



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

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.160	0.180	4.06	4.57
B	0.130	0.150	3.30	3.81
C	0.075	0.095	1.90	2.41
D	0.077	0.083	1.96	2.11
H	0.0020	0.0060	0.051	0.152
J	0.006	0.012	0.15	0.30
K	0.030	0.050	0.76	1.27
P	0.020 REF		0.51 REF	
S	0.205	0.220	5.21	5.59

Notes

Notes

PUBLICATION ORDERING INFORMATION

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