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by MURS305T3/D

MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

MURS305T3
MURS310T3
MURS315T3
MURS320T3
MURS330T3
MURS340T3
MURS350T3
MURS360T3

Surface Mount
Ultrafast Power Rectifiers

. . . employing state-of-the-art epitaxial construction with oxide passivation and metal overlay contact. 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
- Packaged in 16 mm Pocket Tape and Reel
- Highly Stable Oxide Passivated Junction
- Low Forward Voltage Drop (0.71 to 1.05 Volts Max @ 3.0 A, T_J = 150°C)

ULTRAFAST RECTIFIERS
3.0 AMPERES
50–600 VOLTS

MECHANICAL CHARACTERISTICS

CASE: Transfer Molded Plastic Package
LEAD FINISH: Plated Leads, Readily Solderable in Surface Mount Applications
POLARITY IDENTIFICATION: Notch in Plastic Body Indicates Cathode Lead
DEVICE MARKING: MURS305T3.....U3A MURS330T3.....U3F
MURS310T3.....U3B MURS340T3.....U3G
MURS315T3.....U3C MURS350T3.....U3H
MURS320T3.....U3D MURS360T3.....U3J

CASE 403-03

MAXIMUM RATINGS

Rating	Symbol	MURS 305T3	310T3	315T3	320T3	330T3	340T3	350T3	360T3	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	300	400	500	600	Volts
Average Rectified Forward Current	$I_{F(AV)}$	3.0 @ T_L = 140°C 4.0 @ T_L = 130°C				3.0 @ T_L = 130°C 4.0 @ T_L = 115°C				Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	I_{FSM}	75								Amps
Operating Junction Temperature	T_J	−65 to +175								°C

THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Lead	$R_{\theta JL}$	11	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (1) (i_F = 3.0 A, T_J = 25°C) (i_F = 4.0 A, T_J = 25°C) (i_F = 3.0 A, T_J = 150°C)	v_F	 0.875 0.89 0.71	 1.25 1.28 1.05	Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, T_J = 25°C) (Rated dc Voltage, T_J = 150°C)	I_R	 5.0 150	 10.0 250	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} 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, Recovery to 1.0 V)	t_{fr}	25	50	ns

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

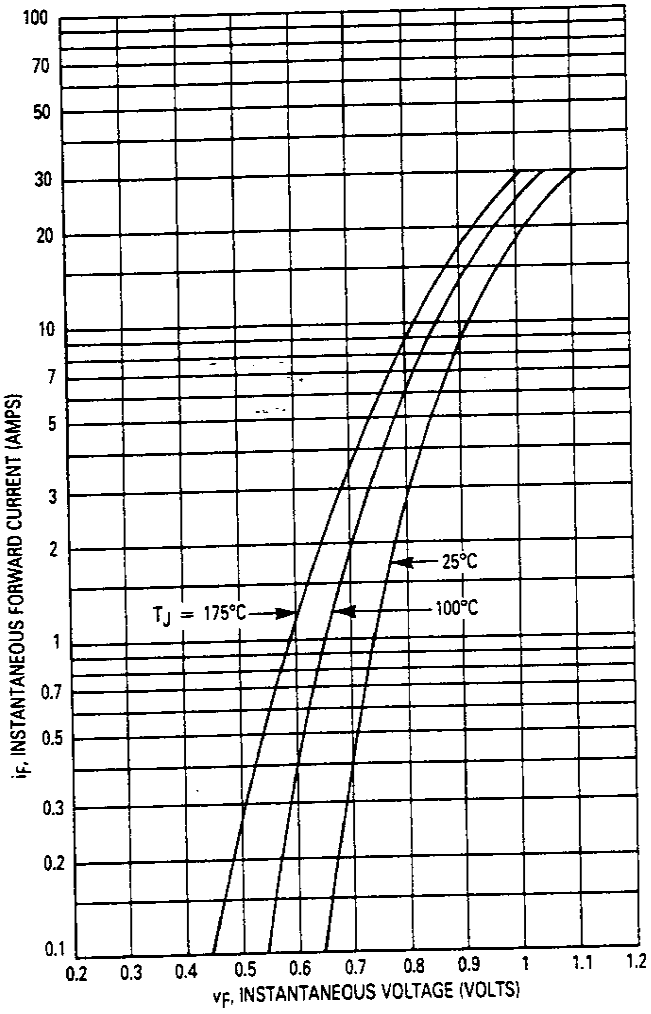


Figure 1. Typical Forward Voltage

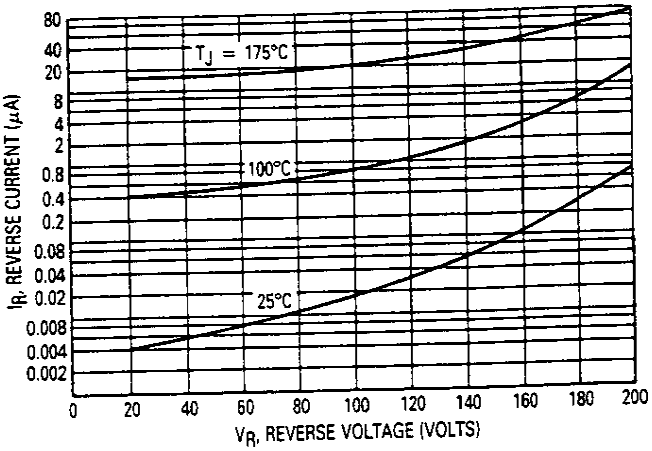


Figure 2. Typical Reverse Current*

*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 V_R is sufficiently below rated V_R.

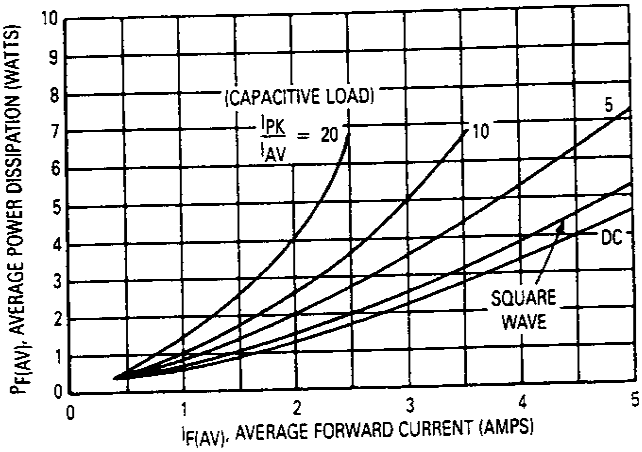


Figure 3. Power Dissipation

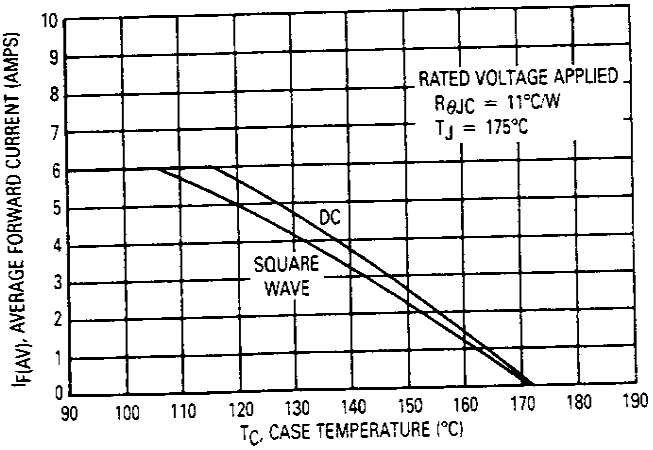


Figure 4. Current Derating (Case)

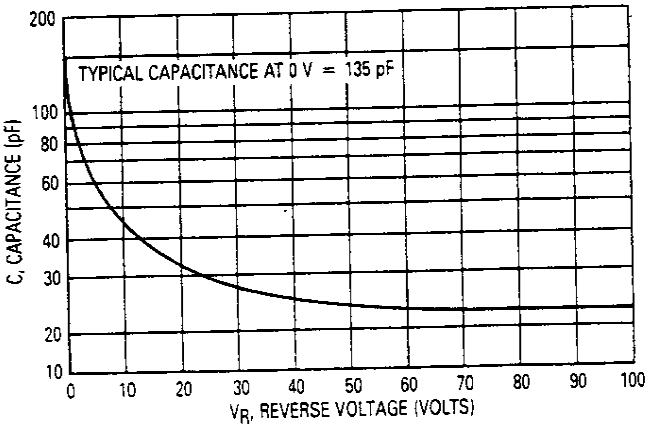


Figure 5. Typical Capacitance

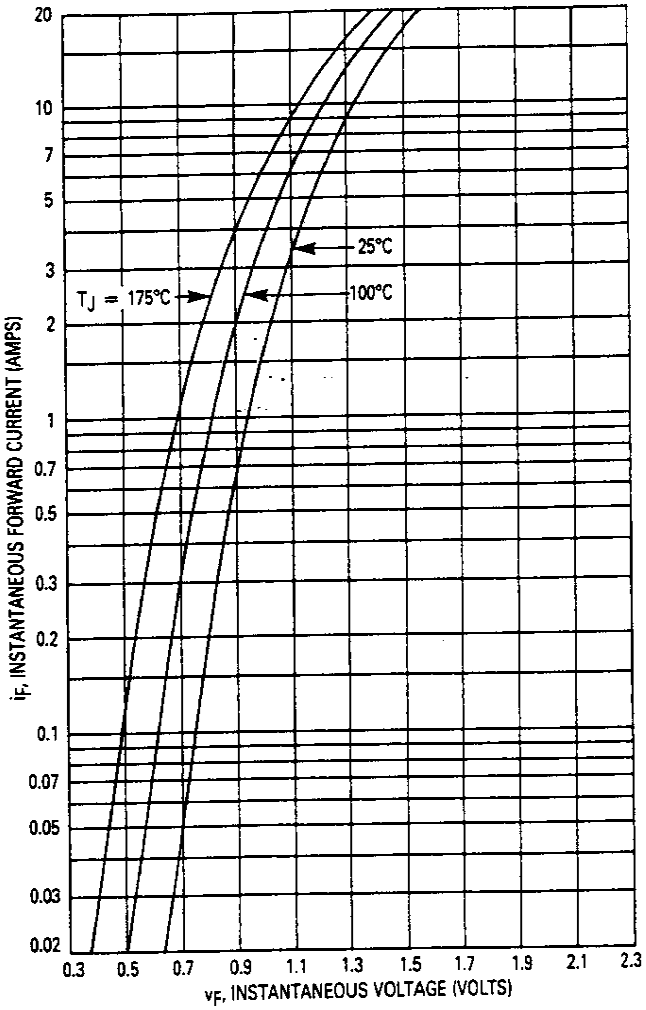


Figure 6. Typical Forward Voltage

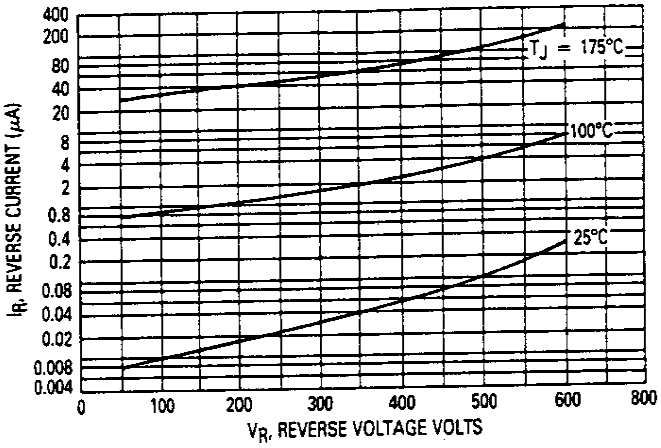


Figure 7. Typical Reverse Current*

*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 V_R is sufficiently below rated V_R.

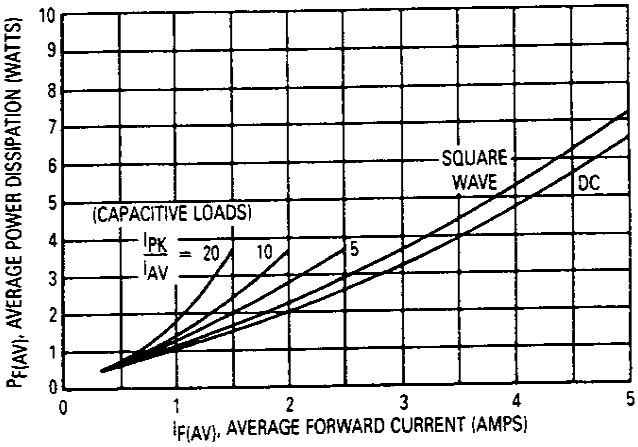


Figure 8. Power Dissipation

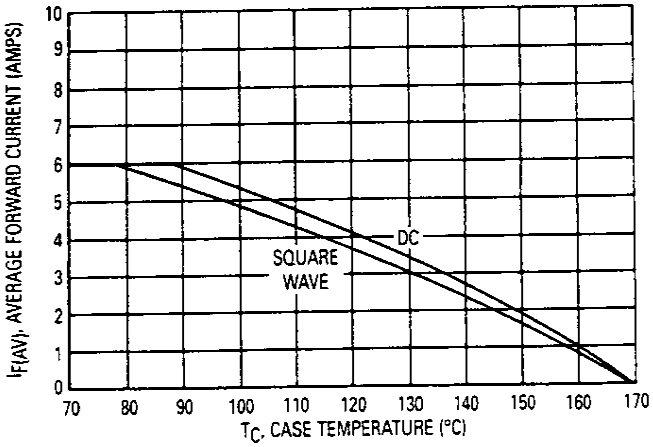


Figure 9. Current Derating (Case)

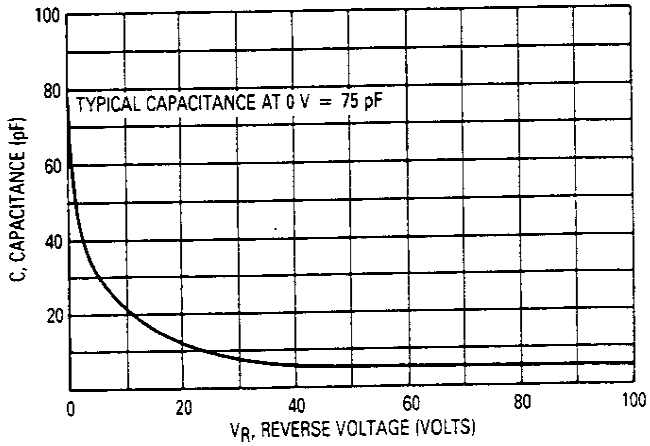
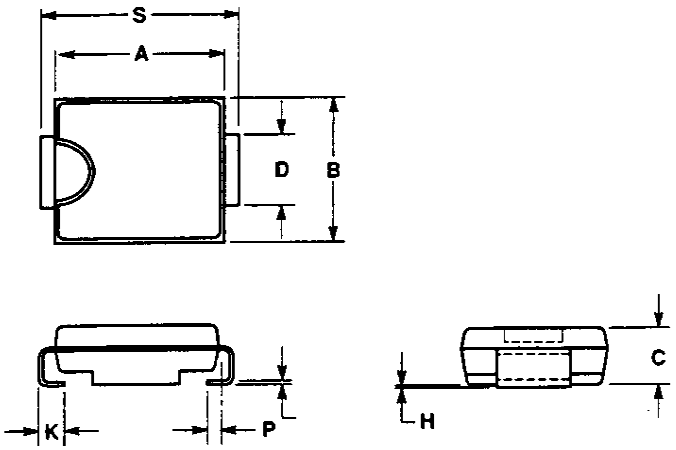


Figure 10. Typical Capacitance

OUTLINE DIMENSIONS



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	MAX	MIN	MAX
A	6.60	7.11	0.260	0.280
B	5.59	6.10	0.220	0.240
C	1.90	2.41	0.075	0.095
D	2.92	3.07	0.115	0.121
H	0.051	0.152	0.0020	0.0060
J	0.15	0.30	0.006	0.012
K	0.76	1.27	0.030	0.050
P	0.51 REF		0.020 REF	
S	7.75	8.13	0.305	0.320

CASE 403-03

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