DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

MUR805-MUR860

8 AMP ULTRA FAST RECTIFIER

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Rating	Symbol	MUR						Unit
		805	810	815	820	840	860	
Peak repetitive reverse voltage **Working peak reverse voltage** **DC blocking voltage**	V_{RRM} V_{RWM} V_R	50	100	150	200	400	600	V
Average rectified forward current (Rated V_R) (1)	$I_{F(AV)}$	8.0 @ T_C = 150°C						A
Peak repetitive forward current (Rated V_R) Square wave, 20 kHz	I_{FM}	16 @ T_C = 150°C						A
Non-repetitive peak surge current (surge applied at rated load conditions, halfwave, single phase, 60Hz)	I_{FSM}	100						A
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +175						°C
Maximum thermal resistance Junction to case	$R_{\Theta JC}$	3.0			2.0			°C/W
Junction to ambient	$R_{\Theta JA}$	73						

ELECTRICAL CHARACTERSITICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	MUR						Unit
		805	810	815	820	840	860	
Maximum instantaneous forward voltage (1) (I_F = 8.0A, T_C = 150°C) (I_F = 8.0A, T_C = 25°C)	V_F	0.895 0.975		1.00 1.30		1.20 1.50		V
Maximum instantaneous reverse current (1) (Rated dc voltage, T_C = 150°C) (Rated dc voltage, T_C = 25°C)	I_R	250 5.0				500 10		µA
Maximum reverse recovery time (I_F = 1.0A, di/dt = 50A/µs) (I_F = 0.5A, I_R = 1.0A, I_{REC} = 0.25A)	t_{rr}	35 25				60 50		ns

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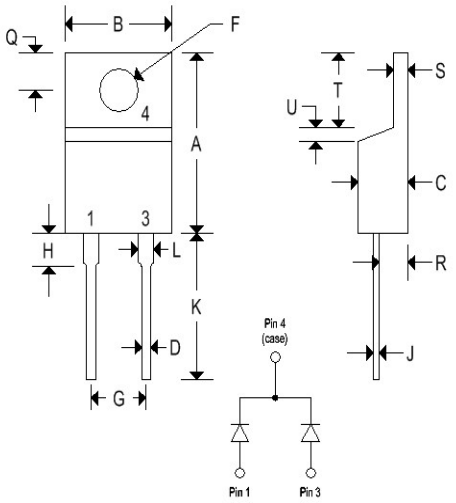
MECHANICAL CHARACTERISTICS

Case	TO-220AC
Marking	Alpha-numeric
Pin out	See below



	TO-220AC			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.595	0.620	15.110	15.750
B	0.380	0.405	9.650	10.290
C	0.160	0.190	4.060	4.820
D	0.142	0.147	3.610	3.730
F	0.142	0.147	3.610	3.730
G	0.190	0.210	4.830	5.330
H	0.110	0.130	2.790	3.300
J	0.018	0.025	0.460	0.640
K	0.500	0.562	12.700	14.270
L	0.045	0.050	1.140	1.270
Q	0.100	0.120	2.540	3.040
R	0.080	0.110	2.040	2.790
S	0.045	0.055	1.140	1.390
T	0.235	0.255	5.970	6.480
U	0.030	0.050	0.760	1.270

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MUR805, MUR810, MUR815, MUR820

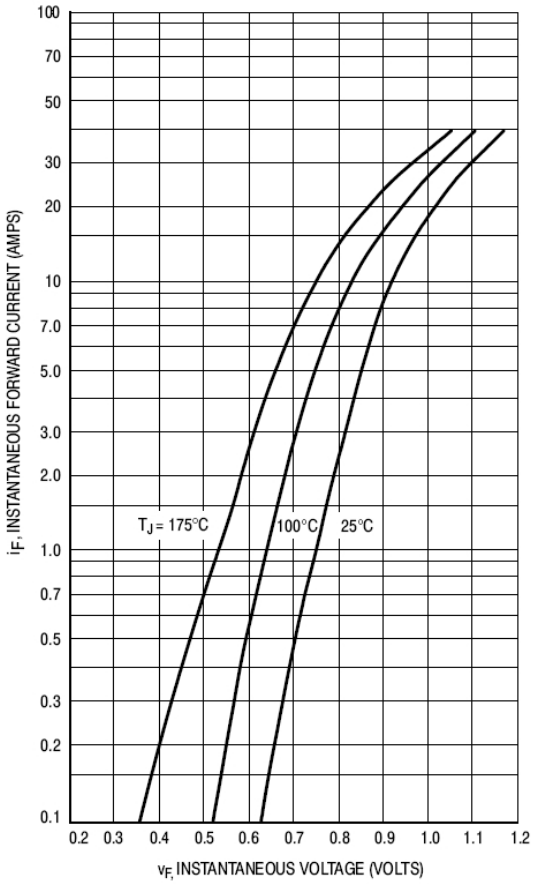

Figure 1. Typical Forward Voltage

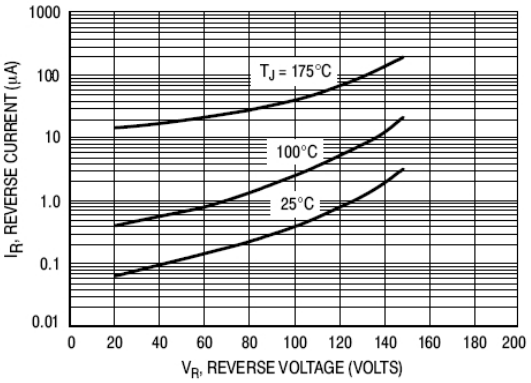

Figure 2. Typical Reverse Current*

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

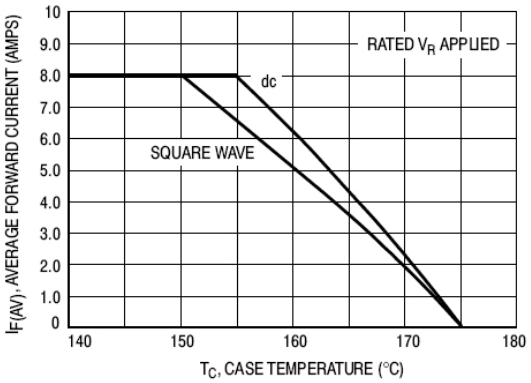

Figure 3. Current Derating, Case

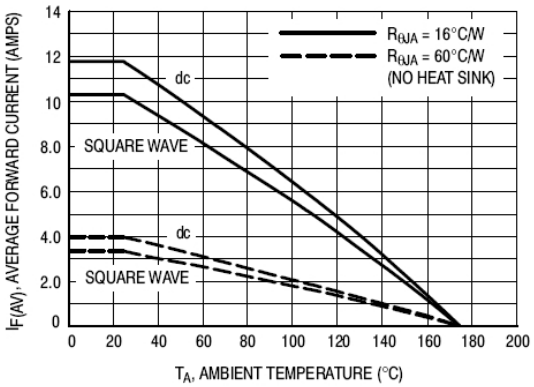

Figure 4. Current Derating, Ambient

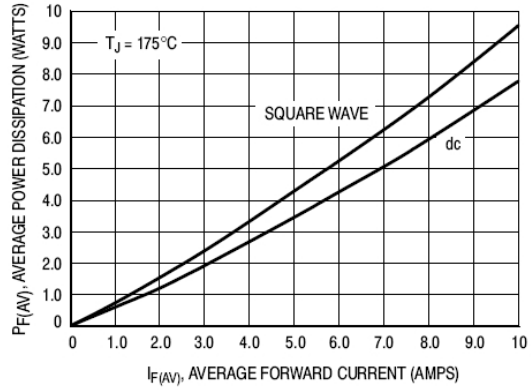

Figure 5. Power Dissipation

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MUR840

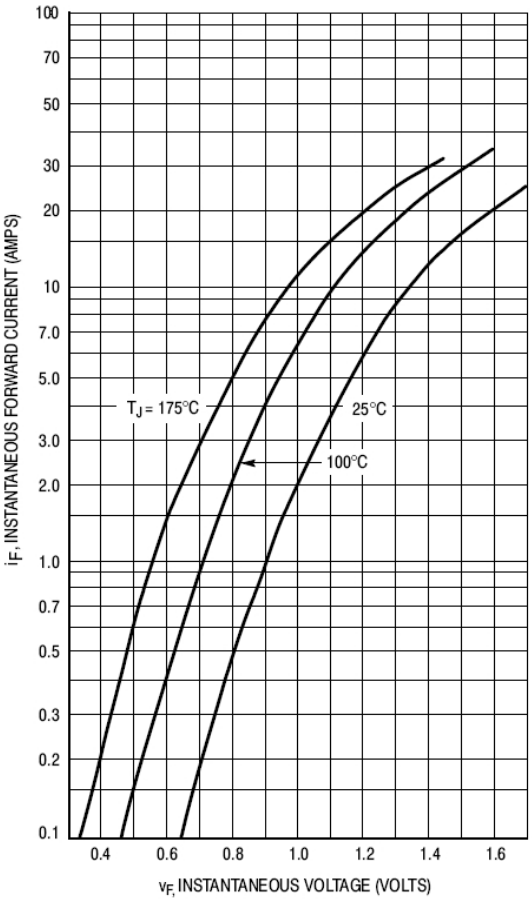

Figure 6. Typical Forward Voltage

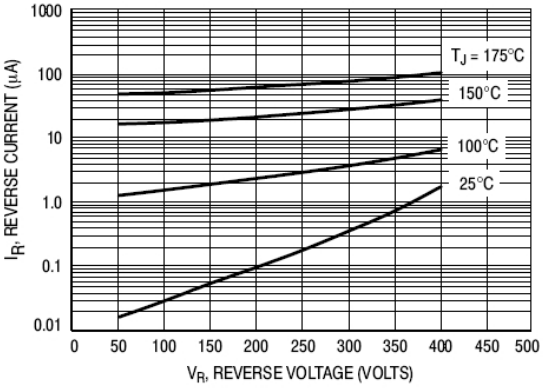

Figure 7. Typical Reverse Current*

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

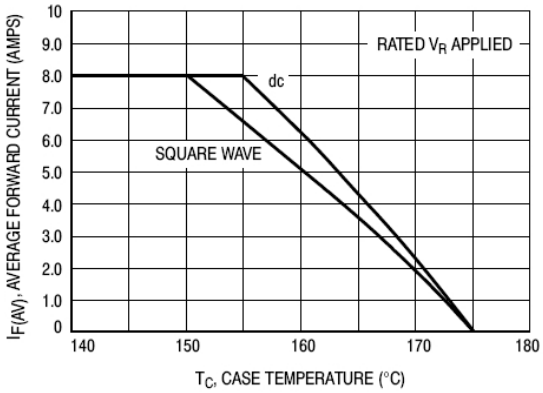

Figure 8. Current Derating, Case

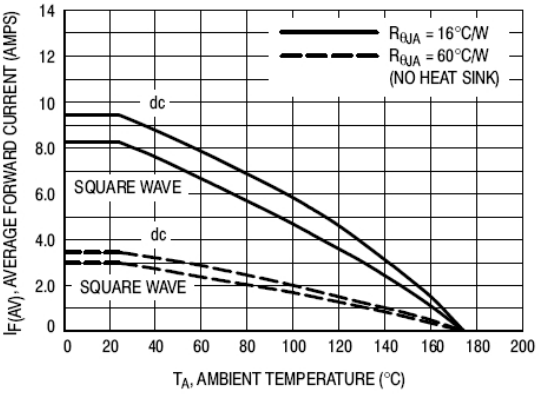

Figure 9. Current Derating, Ambient

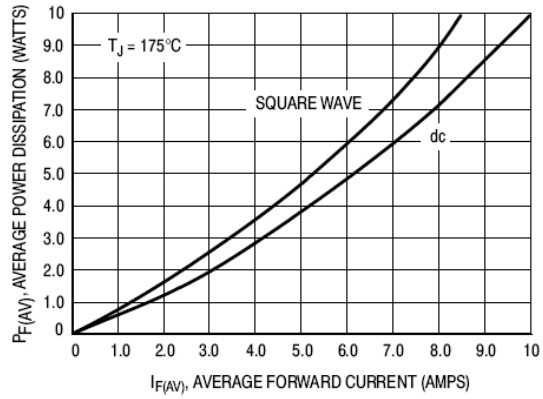

Figure 10. Power Dissipation

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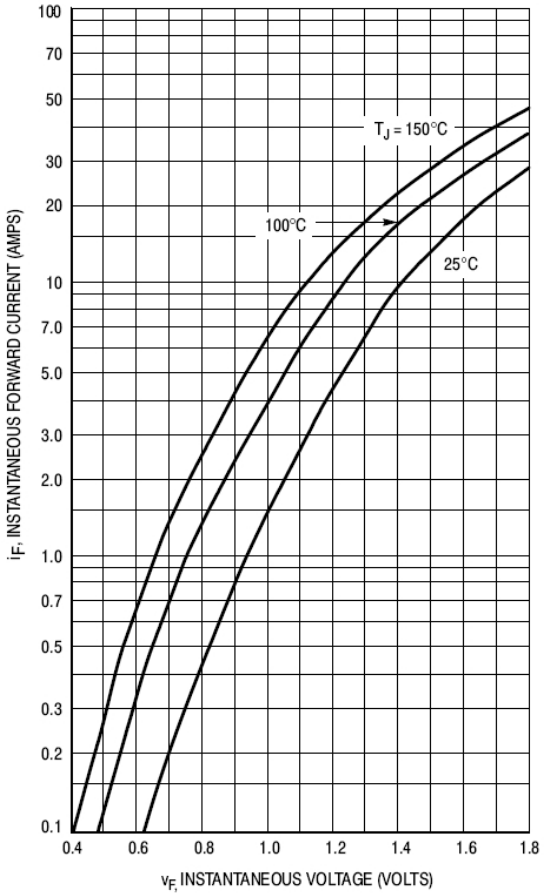

Figure 11. Typical Forward Voltage

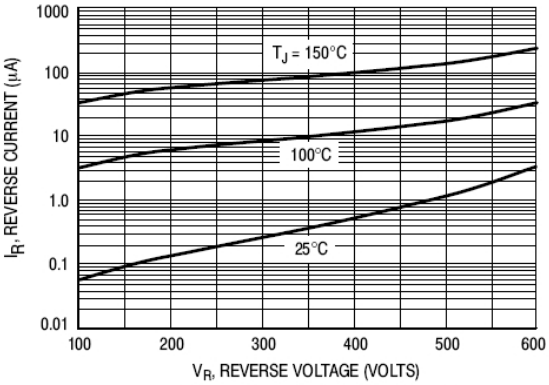

Figure 12. Typical Reverse Current*

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

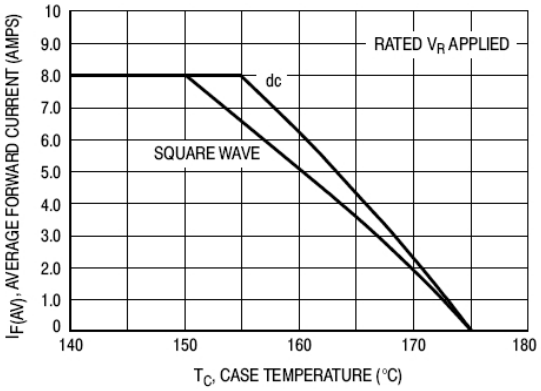

Figure 13. Current Derating, Case

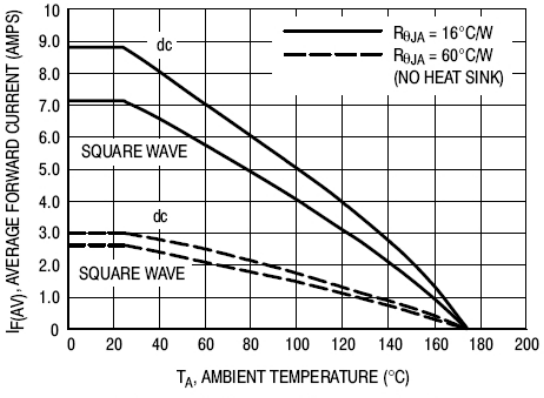

Figure 14. Current Derating, Ambient

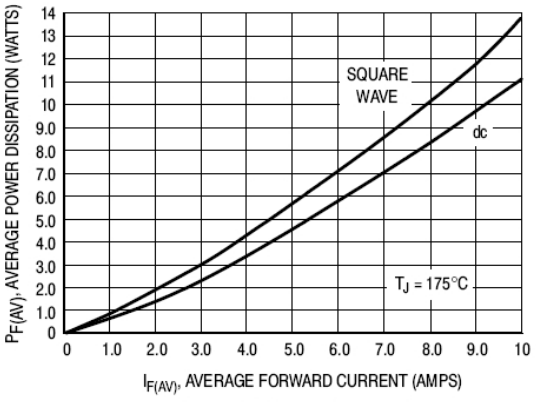

Figure 15. Power Dissipation

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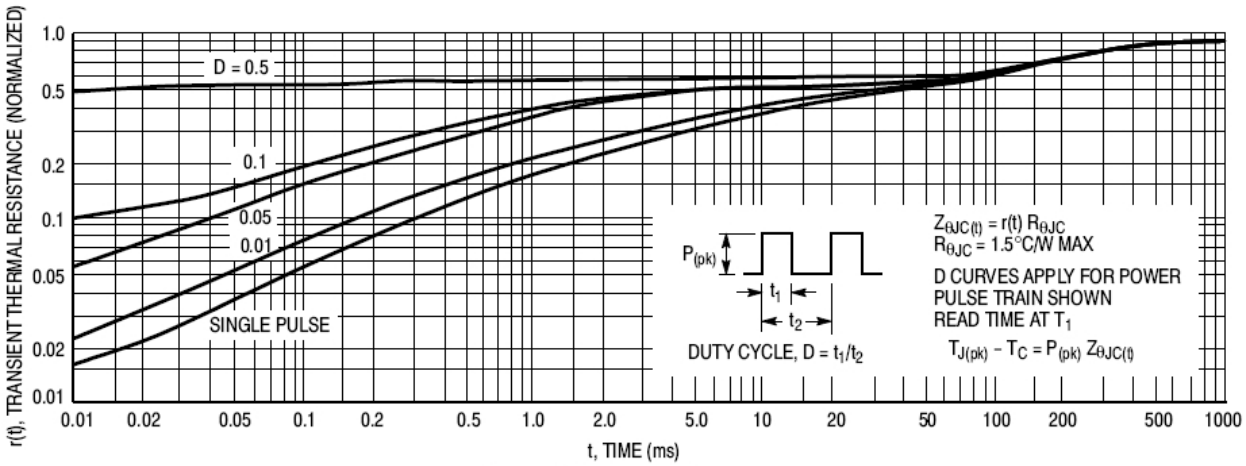

Figure 16. Thermal Response