DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

MUR1505-MUR1560

15 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
		1505	1510	1515	1520	1530	1540	1550	1560	
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	V
Average rectified forward current (Rated V_R)	$I_{F(AV)}$	15 @ T_C = 150°C						15 @ T_C = 145°C		A
Peak repetitive forward current (Rated V_R, square wave, 20 kHz)	I_{FRM}	30 @ T_C = 150°C						30 @ T_C = 145°C		A
Non repetitive peak surge current (Surge applied at rated load conditions, halfwave, single phase, 60Hz)	I_{FSM}	200				150				A
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +175								°C
Maximum thermal resistance Junction to case	$R_{\Theta JC}$	1.5								°C/W

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

Parameter	Symbol	MUR								Unit
		1505	1510	1515	1520	1530	1540	1550	1560	
Maximum forward voltage drop (1) (I_F = 15A, T_C = 150°C) (I_F = 15A, T_C = 25°C)	V_F	0.85 1.05				1.12 1.25		1.20 1.50		V
Maximum DC reverse current (1) (Rated dc voltage, T_C = 150°C) (Rated dc voltage, T_C = 25°C)	I_R	500 10						1000 10		µA
Maximum reverse recovery time (I_F = 1.0A, di/dt = 50A/µs)	t_{rr}	35					60			ns

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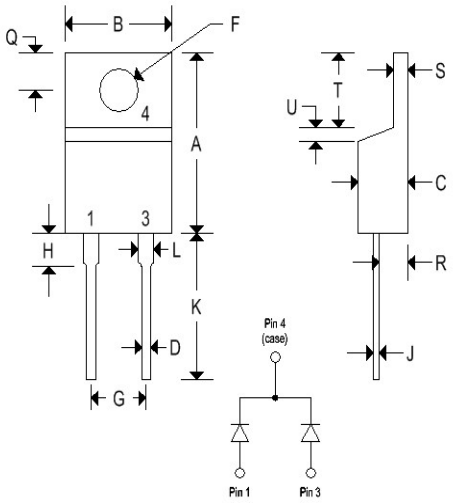
MECHANICAL CHARACTERISTICS

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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FIGURE 1 — TYPICAL FORWARD VOLTAGE

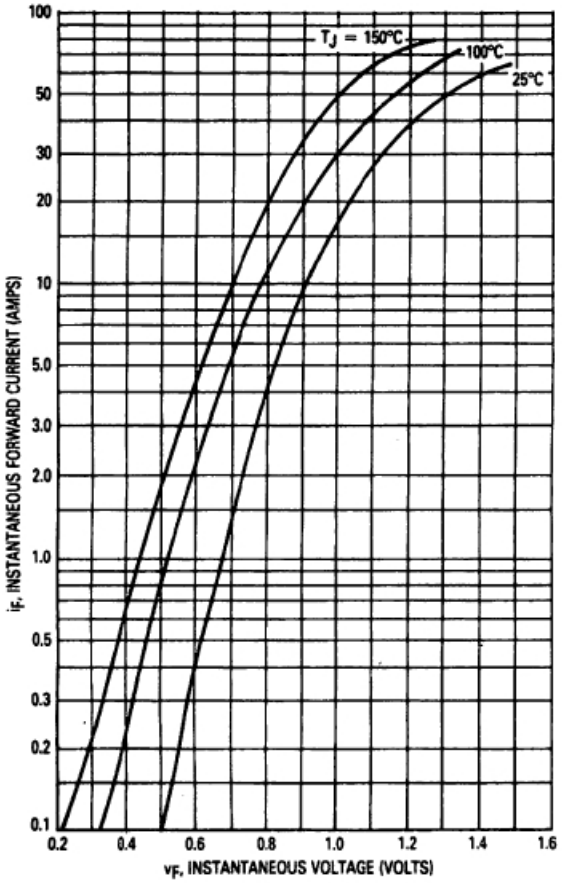
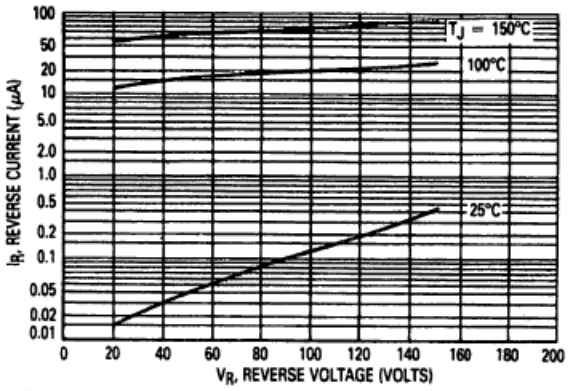


FIGURE 2 — TYPICAL REVERSE CURRENT*



*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 — CURRENT DERATING, CASE

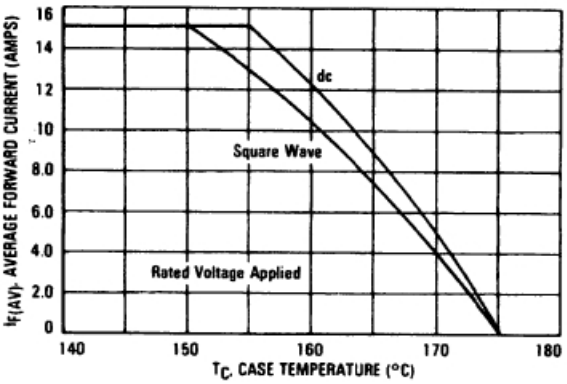


FIGURE 4 — CURRENT DERATING, AMBIENT

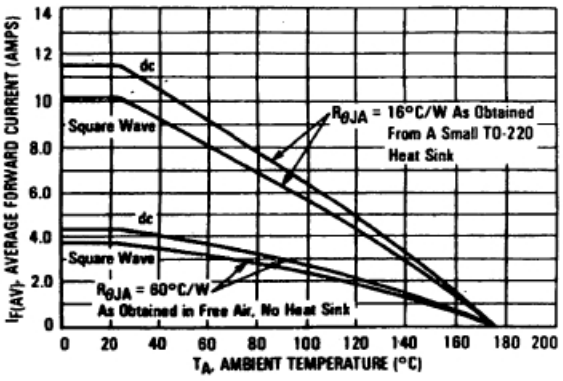


FIGURE 5 — POWER DISSIPATION

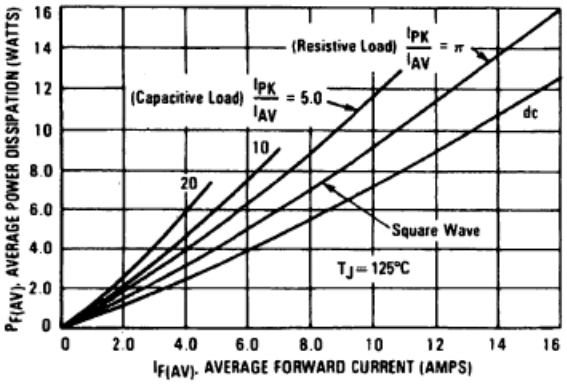


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FIGURE 6 — TYPICAL FORWARD VOLTAGE

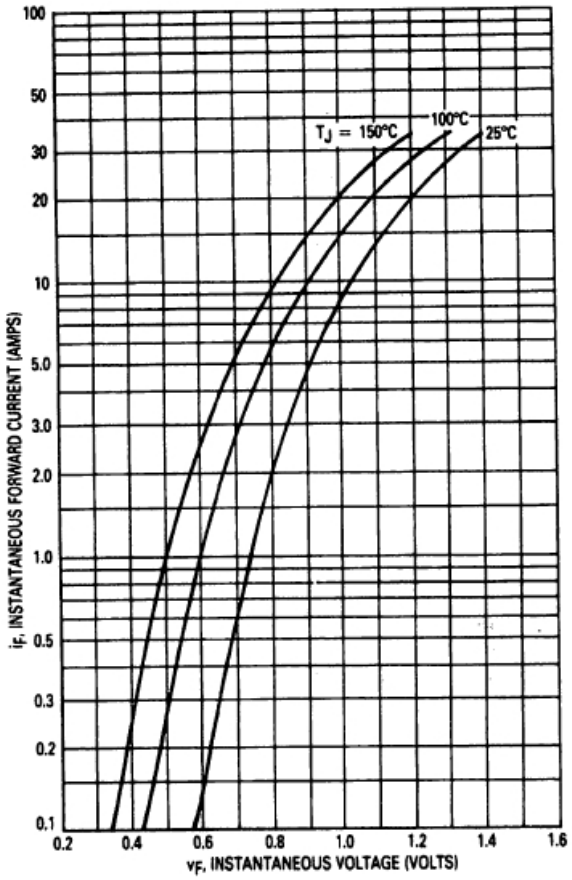
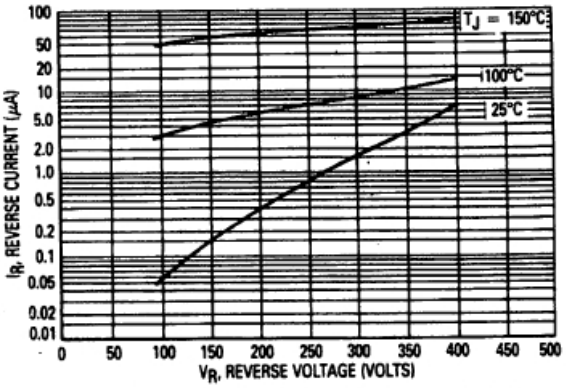


FIGURE 7 — TYPICAL REVERSE CURRENT*



*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 — CURRENT DERATING, CASE

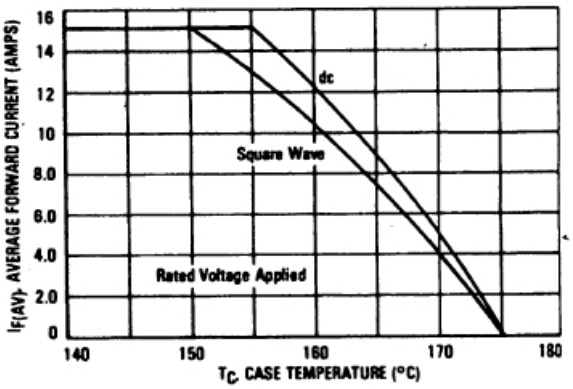


FIGURE 9 — CURRENT DERATING, AMBIENT

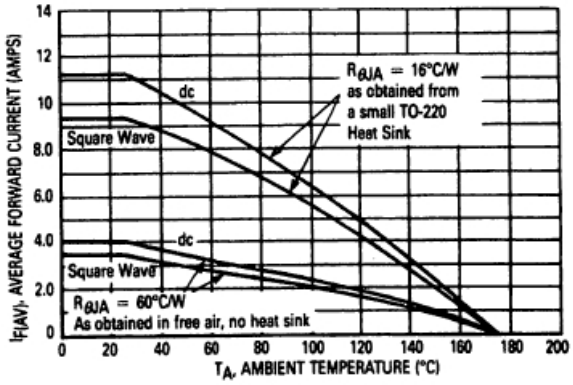


FIGURE 10 — POWER DISSIPATION

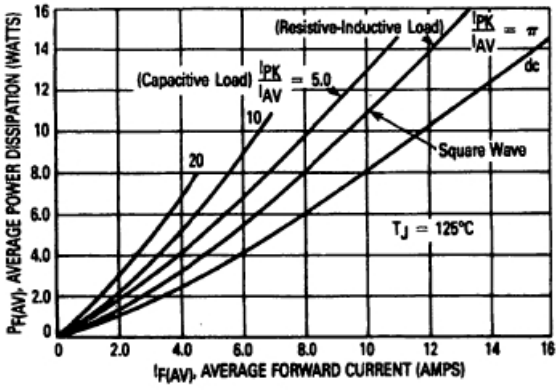


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FIGURE 11 — TYPICAL FORWARD VOLTAGE

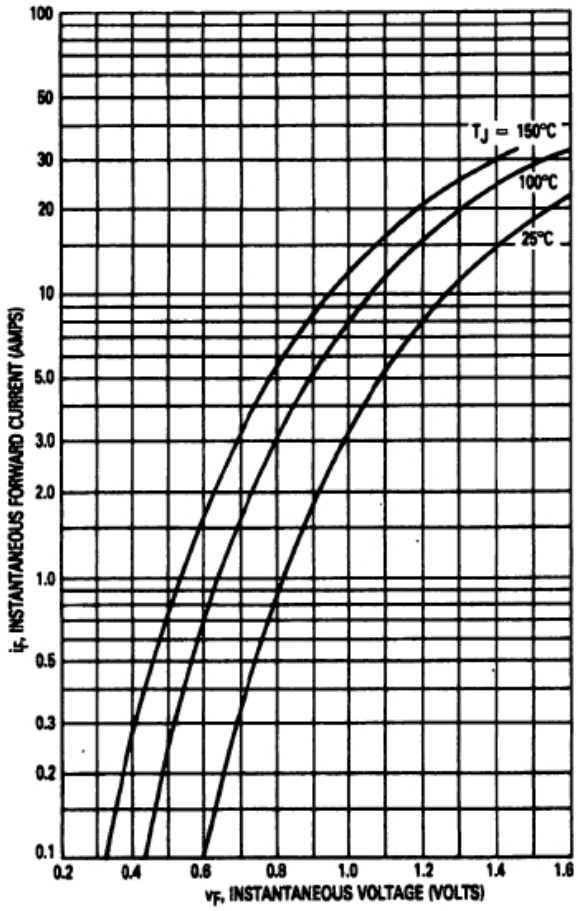
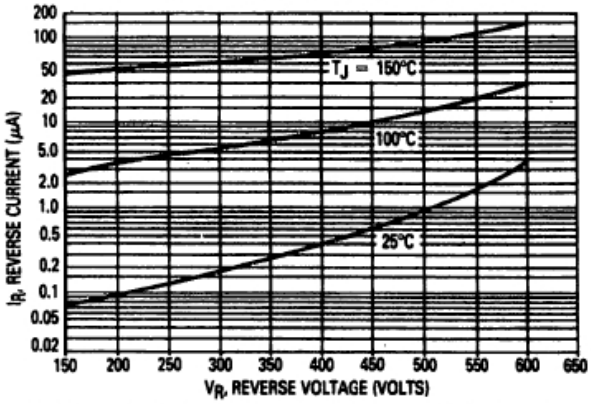


FIGURE 12 — TYPICAL REVERSE CURRENT*



*The curves shown are typical for the highest voltage device in the 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 13 — CURRENT DERATING, CASE

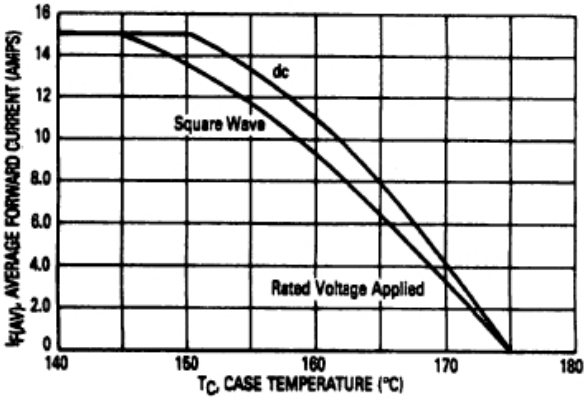


FIGURE 14 — CURRENT DERATING, AMBIENT

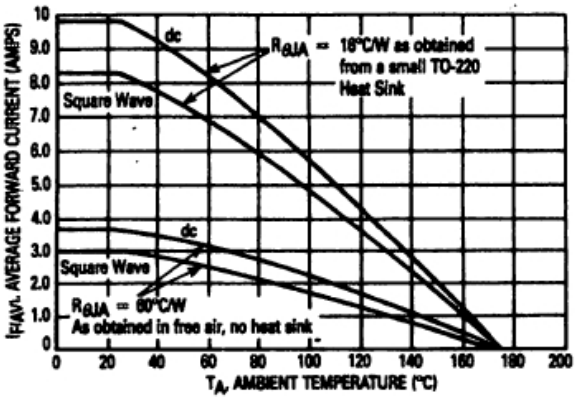


FIGURE 15 — POWER DISSIPATION

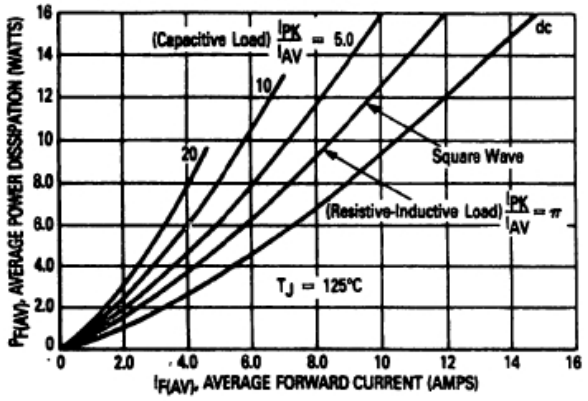


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FIGURE 16 — THERMAL RESPONSE

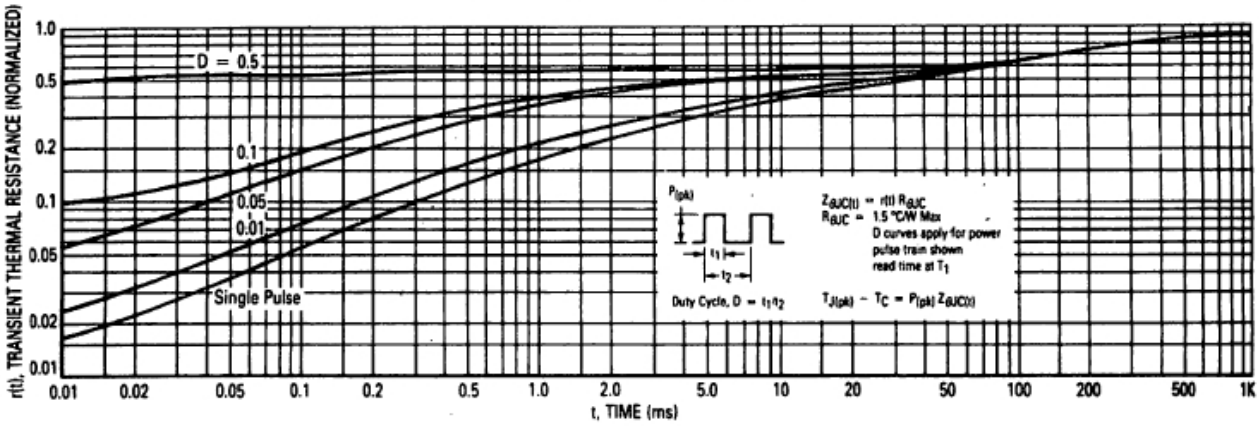

FIGURE 17 — TYPICAL CAPACITANCE