QUADRAC's® —(1.6-15 Amp)

I_T RMS	Part Number		V_{DRM}	I_{DRM}			V_{TM}	Trigger Diac Specifications					
	Isolated	Non-Isolated						$\Delta V(BO)$	V_{BO}		$[\Delta V \pm]$	I_{BO}	C_T
RMS On-State Current Conduction Angle of 360° (5)	 THERMOTAB TO-220AB	 TO-202	Repetitive Peak Blocking Voltage (1)	Peak Off-State Current Gate Open V_{DRM} = Max Rated Value (1)			Peak On-State Voltage at Max Rated RMS Current T_C = 25°C (1) (3)	Breakover Voltage Symmetry (7)	Breakover Voltage (Forward & Reverse) (6)		Dynamic Breakback Voltage (Forward & Reverse) (6)	Peak Breakover Current	Trigger Firing Capacitance
Amps			Volts	mA-Max			Volts	Volts	Volts		Volts	µA	µF
MAX	FOR DIMENSIONAL OUTLINE AND PACKAGE VARIATIONS SEE PAGE 81		MIN	T_C = 25°C	T_C = 100°C	T_C = 125°C	MAX	MAX	MIN	MAX	MIN	MAX	MAX
1.6 Amps	Q2001LT		200	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q4001LT		400	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
3.0 Amps	Q2003LT		200	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q4003LT		400	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
4.0 Amps	Q2004LT	Q2004FT1	200	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q4004LT	Q4004FT1	400	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q5004LT	Q5004FT1	500	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q6004LT	Q6004FT1	600	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
10.0 Amps	Q2010LT	Q2010FT1	200	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q4010LT	Q4010FT1	400	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q5010LT	Q5010FT1	500	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q6010LT	Q6010FT1	600	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
15.0 Amps	Q2015LT		200	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q4015LT		400	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q5015LT		500	.05	0.5	2.0	1.6	3	30	45	5	200	0.1
	Q6015LT		600	.05	0.5	2.0	1.6	3	30	45	5	200	0.1

GENERAL NOTES

- All measurements are made at 60 Hz with resistive load at an ambient temperature of +25°C unless otherwise specified.
- Operating temperature range (T_J) is −40°C to +125°C.
- Storage temperature range (T_S) is −40°C to +125°C. TO-202 is −40°C to +150°C.
- Lead solder temperature is a maximum of +230°C for 10 seconds maximum; ≥ 1/16" from case.
- The case temperature (T_C) is measured as shown on dimensional outline drawings See dimensional outline and package variations on page 81.

THERMAL RESISTANCE (STEADY STATE)

$R_{\theta JC}$ $R_{\theta JA}$ °C/W (TYP)

TYPE	ISOLATED TO-220 AB	TYPE 1 TO-202 AB	TYPE 2 TO-202 AB
1.6 Amp	5.2/60		
3.0 Amp	4.4/50		
4.0 Amp	3.6	3.5/45	6.0/70
10.0 Amp	2.6	3.5	
15.0 Amp	2.0		

ELECTRICAL ISOLATION

All Teccor isolated Quadrac packages will withstand a minimum high potential test of 2500VAC (RMS) from leads to case, over the operating temperature range of the device. See isolation table for standard and optional isolation ratings.

ELECTRICAL ISOLATION FROM LEADS TO CASE
U.L. RECOGNIZED FILE #E71639

VAC (RMS) \ TYPE	TO-220 AB
1600	—
2500	STANDARD
4000	OPTIONAL*

*FOR 4000 V ISOLATION USE "V" SUFFIX

T-25-13
T-25-15

Electrical Specifications

I_H	I_{TSM}		dv/dt (c)	dv/dt		t_{gt}	I^2t	I_{GTM}	di/dt
Holding Current Gate Open (1) (2)	Peak One Cycle Surge (4) (8)		Critical Rate of Rise of Commutation Voltage at Rated V_{DRM} and I_T (RMS) Commutating di/dt = .54 Rated $I_{T(RMS)}$/msec. Gate Unenergized (1) (5) (8)	Critical Rate of Rise of Off-State Voltage at Rated V_{DRM} Gate Open (1)		Gate Controlled Turn-On Time (6) (9)	RMS Surge (Non-Repetitive) On-State Current For period of 8.3 msec for Fusing	Peak Gate Trigger Current (3 μsec Max)	Maximum Rate of Change of On-State Current (9)
				Volts/μs					
mA	Amps		Volts/μs	MIN		μs	$Amps^2sec.$	Amps	Amps/μS
MAX	60Hz	50Hz	MIN	T_C = 100°C	T_C = 125°C	MAX			
30	20	16.7	2	45	30	3	1.6	1.0	30
30	20	16.7	2	35	25	3	1.6	1.0	30
40	30	25	3	75	50	3	3.7	1.2	50
40	30	25	3	75	50	3	3.7	1.2	50
40	40	33	3	75	50	3	6.6	1.2	50
40	40	33	3	75	50	3	6.6	1.2	50
40	40	33	3	50	35	3	6.6	1.2	50
40	40	33	3	50	35	3	6.6	1.2	50
60	120	100	4	200	150	3	60	1.5	70
60	120	100	4	200	150	3	60	1.5	70
60	120	100	4	175	120	3	60	1.5	70
60	120	100	4	175	120	3	60	1.5	70
70	150	125	4	300	200	3	93	1.5	100
70	150	125	4	300	200	3	93	1.5	100
70	150	125	4	200	150	3	93	1.5	100
70	150	125	4	200	150	3	93	1.5	100

NOTES TO ELECTRICAL SPECIFICATIONS

1. For either polarity of MT2 with reference to MT1.
2. See Figure 1 for I_H vs T_C.
3. See Figure 3A & 3B for i_T vs V_T.
4. See Figure 6 for surge ratings with specific durations.
5. See Figures 4, 5A & 5B for current rating at specific operating temperature.
6. See Figure 2A & 2B for test circuit.
7. $\Delta\ V_{(BO)} = |+\ V_{(BO)}| - |-V_{(BO)}|$
8. See Figures 5A & 5B for maximum allowable case temperature @ maximum rated current.
9. Trigger firing capacitance = 0.1μf with 0.1μsec rise time.

FIGURE 1—Normalized DC Holding Current vs Case Temperature

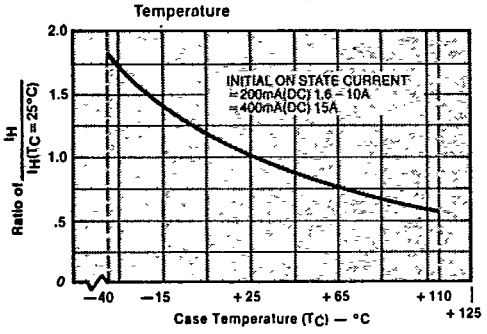

FIGURE 2-A—Test Circuit

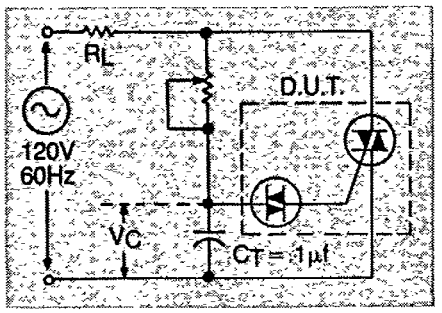

FIGURE 2-B—Test Circuit Waveforms

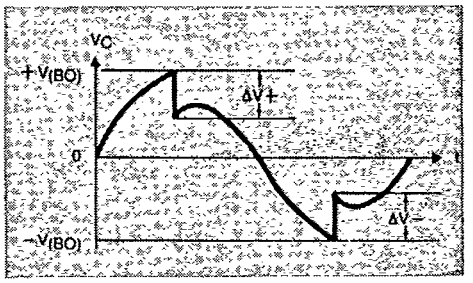

FIGURE 3A — On-State Current vs On-State Voltage (Typical)

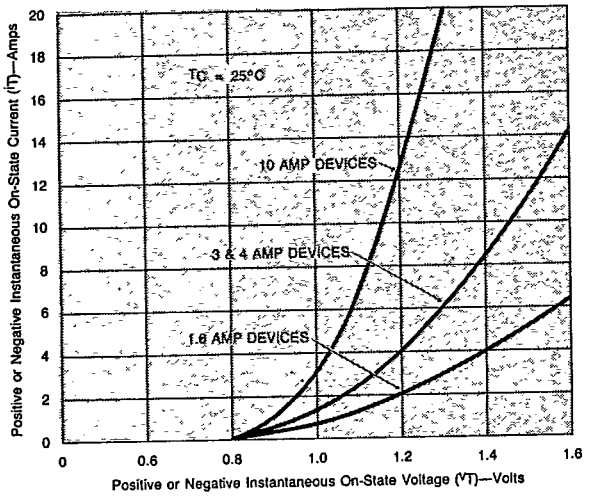

FIGURE 3B — On-State Current vs On-State Voltage (Typical)

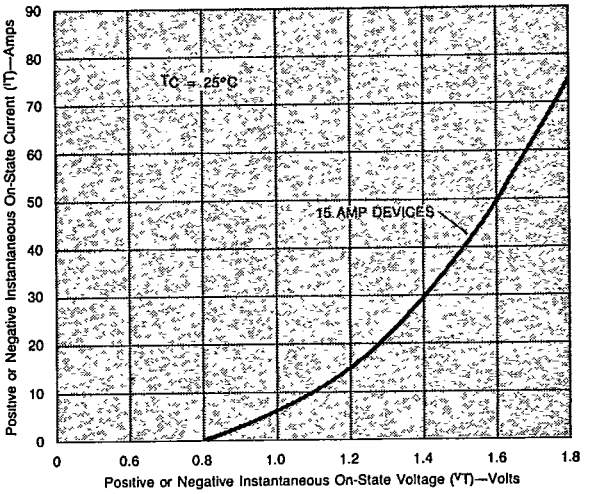

FIGURE 4 — Maximum Allowable Ambient Temperature vs. On-State Current

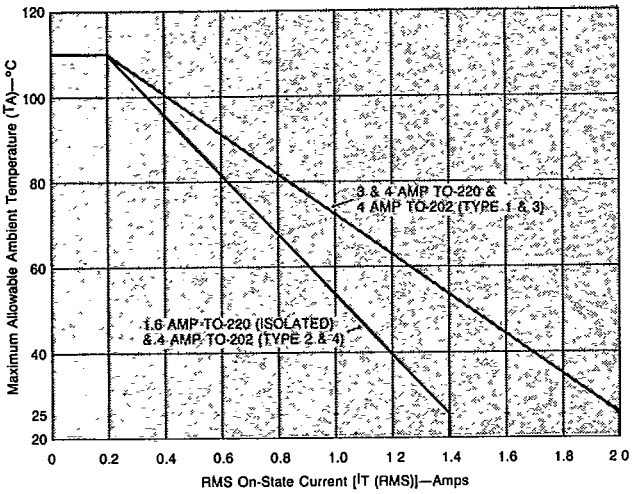

FIGURE 5A— Maximum Allowable Case Temperature vs. On-State Current

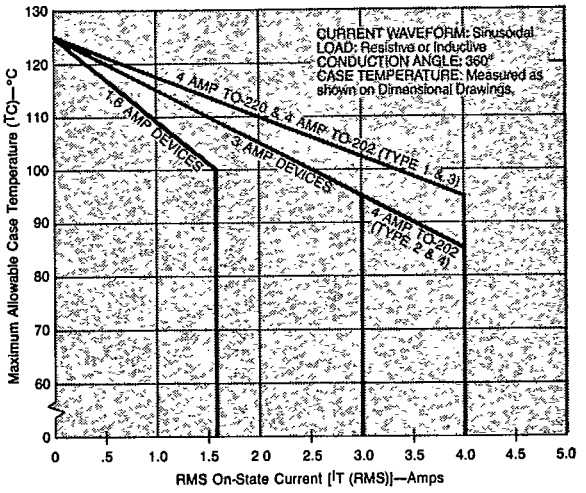

FIGURE 5B— Maximum Allowable Case Temperature vs. On-State Current

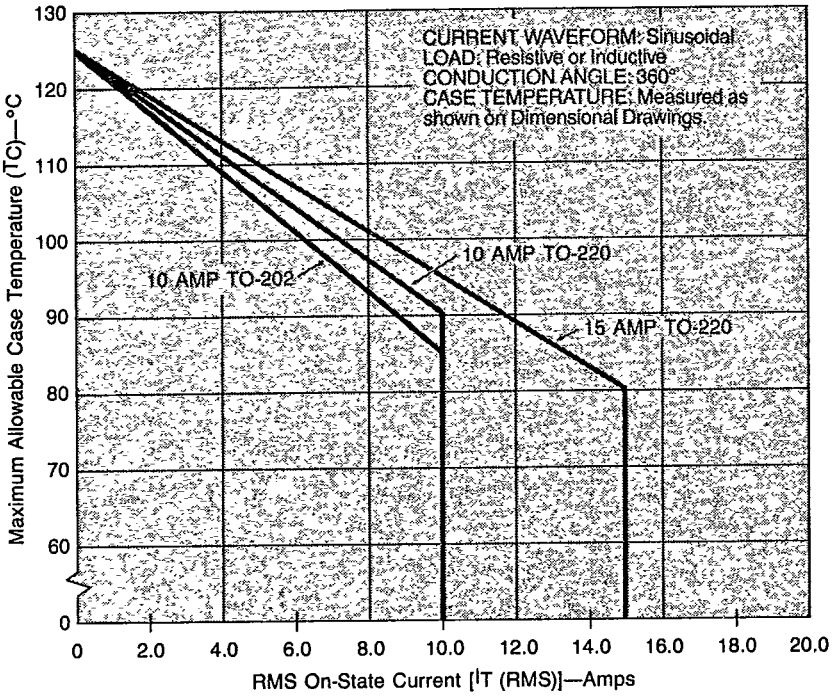

FIGURE 6—Peak Surge Current vs Surge Current Duration

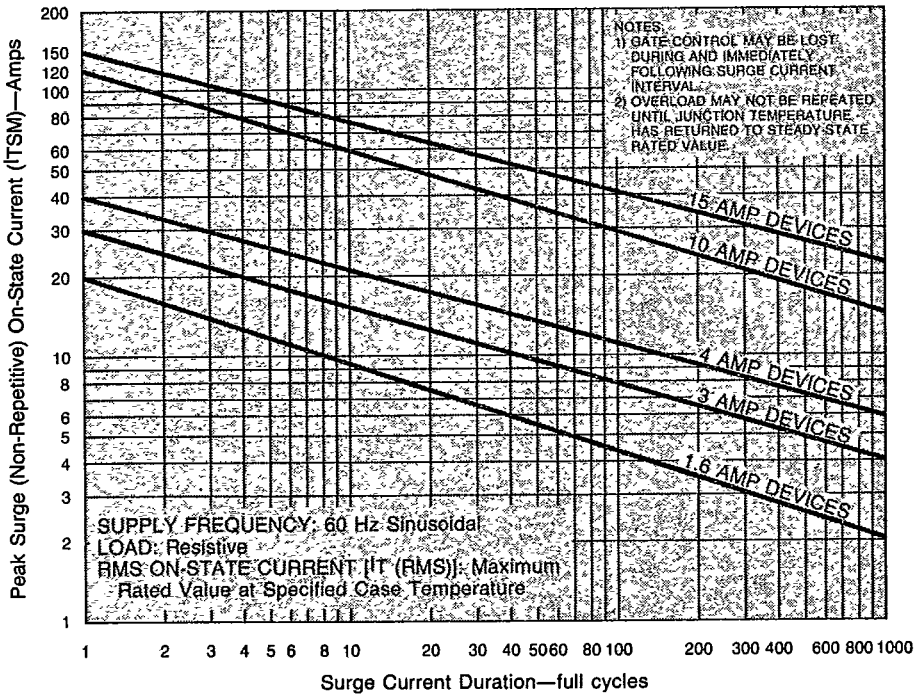

FIGURE 7A — Power Dissipation (Typ.) vs. On-State Current

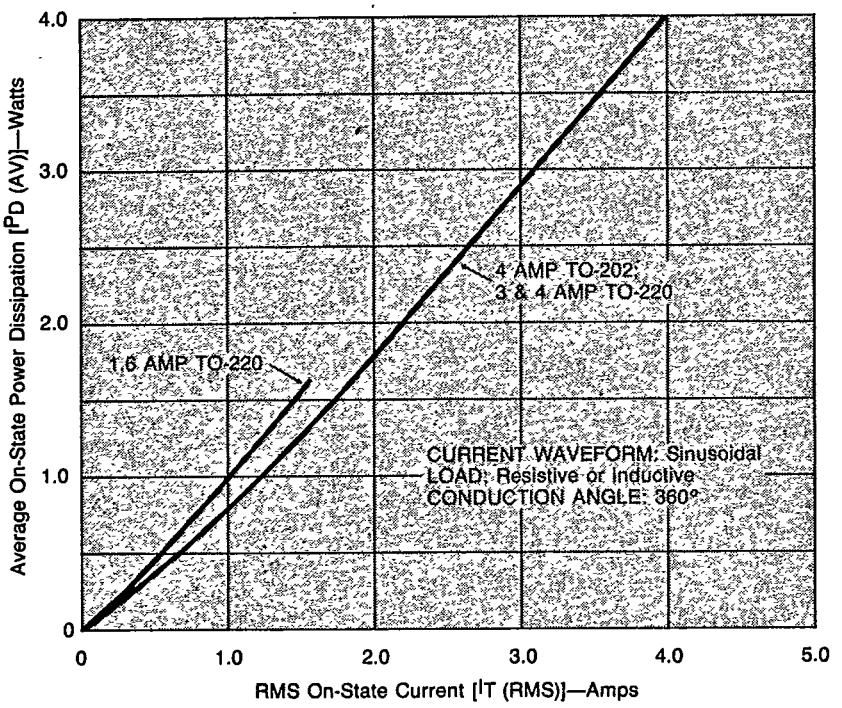

FIGURE 7B — Power Dissipation (Typ.) vs. On-State Current