THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	2.2	°C/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	62.5	°C/W
Maximum Lead Temperature for Soldering Purposes 1/8″ from Case for 10 Seconds	T_L	260	°C

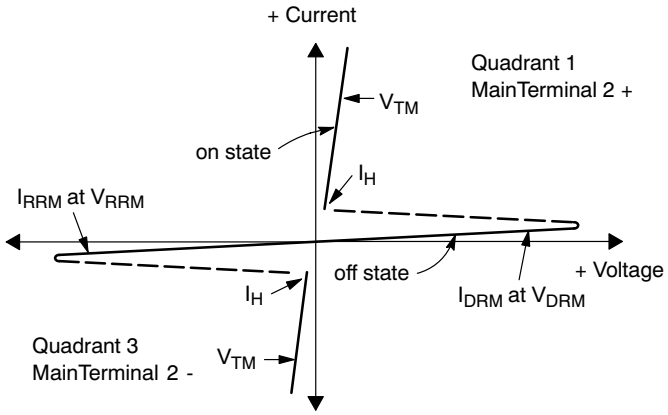
ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise noted; Electricals apply in both directions)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Peak Repetitive Blocking Current (V_D = Rated V_{DRM}, V_{RRM}; Gate Open) T_J = 25°C T_J = 125°C	I_{DRM}, I_{RRM}	- -	- -	0.01 2.0	mA
ON CHARACTERISTICS					
Peak On-State Voltage (Note 2), (I_{TM} = ±11 A Peak)	V_{TM}	-	1.2	1.6	V
Gate Trigger Current (Continuous DC) (V_D = 12 V, R_L = 100 Ω) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-)	I_{GT}	 5.0 5.0 5.0	 13 16 18	 35 35 35	mA
Holding Current, (V_D = 12 V, Gate Open, Initiating Current = ±150 mA)	I_H	-	20	40	mA
Latching Current (V_D = 24 V, I_G = 35 mA), MT2(+), G(+); MT2(-), G(-) MT2(+), G(-)	I_L	- -	20 30	50 80	mA
Gate Trigger Voltage (V_D = 12 V, R_L = 100 Ω) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-)	V_{GT}	 0.5 0.5 0.5	 0.69 0.77 0.72	 1.5 1.5 1.5	V
Gate Non-Trigger Voltage (V_D = 12 V, R_L = 100 Ω, T_J = 125°C) MT2(+), G(+); MT2(+), G(-); MT2(-), G(-)	V_{GD}	 0.2	 -	 -	V
DYNAMIC CHARACTERISTICS					
Rate of Change of Commutating Current See Figure 10.(V_D = 400 V, I_{TM} = 4.4 A, Commutating dv/dt = 18 V/μs,Gate Open, T_J = 125°C, f = 250 Hz, No Snubber) C_L = 10 μF L_L = 40 mH	$(di/dt)_c$	6.5	-	-	A/ms
Critical Rate of Rise of Off-State Voltage (V_D = Rated V_{DRM}, Exponential Waveform, Gate Open, T_J = 125°C)	dv/dt	250	-	-	V/μs

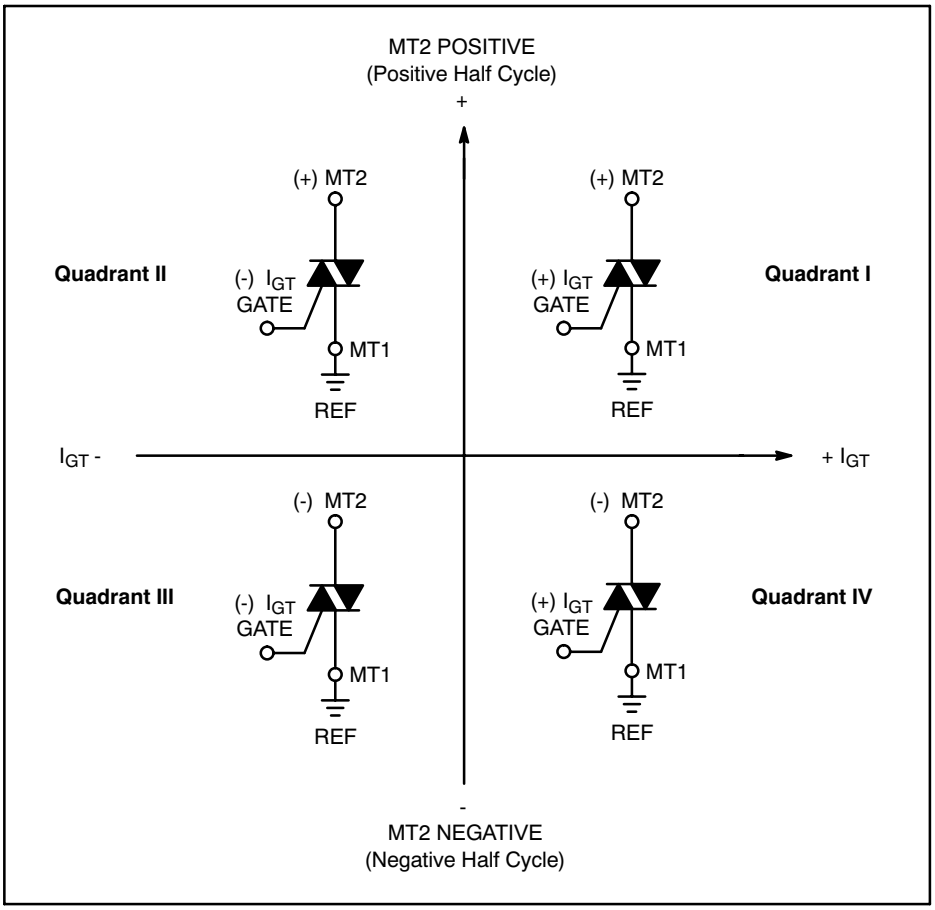
2. Indicates Pulse Test: Pulse Width ≤ 2.0 ms, Duty Cycle ≤ 2%.

Voltage Current Characteristic of Triacs (Bidirectional Device)

Symbol	Parameter
V_{DRM}	Peak Repetitive Forward Off State Voltage
I_{DRM}	Peak Forward Blocking Current
V_{RRM}	Peak Repetitive Reverse Off State Voltage
I_{RRM}	Peak Reverse Blocking Current
V_{TM}	Maximum On State Voltage
I_H	Holding Current



Quadrant Definitions for a Triac



All polarities are referenced to MT1.
With in-phase signals (using standard AC lines) quadrants I and III are used.

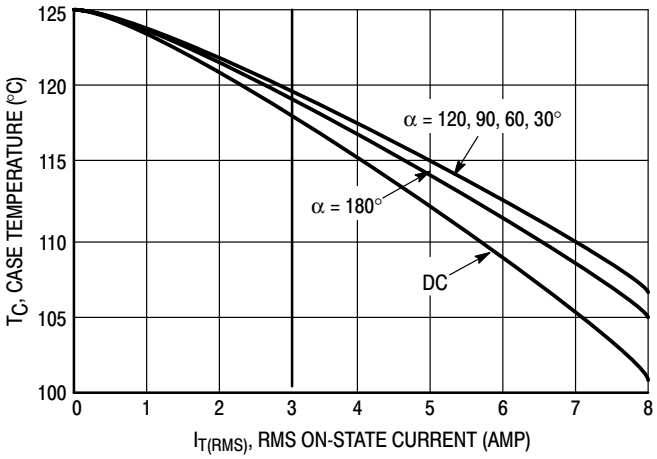


Figure 1. RMS Current Derating

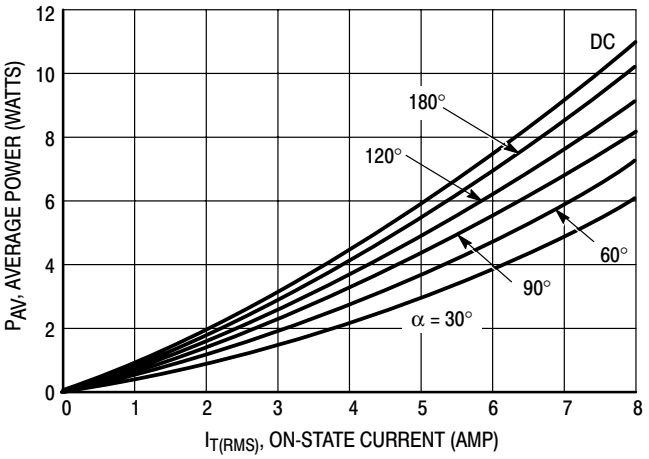


Figure 2. On-State Power Dissipation

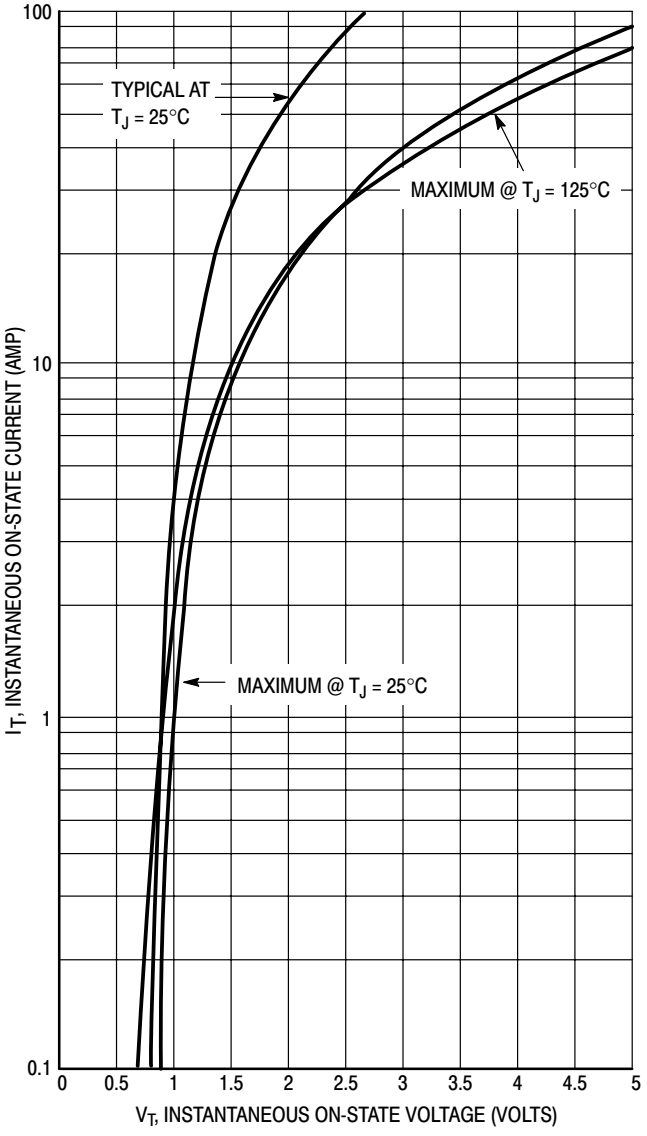


Figure 3. On-State Characteristics

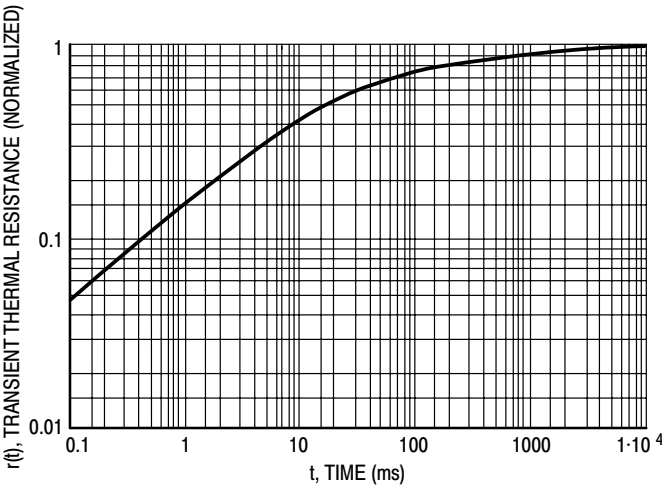


Figure 4. Thermal Response

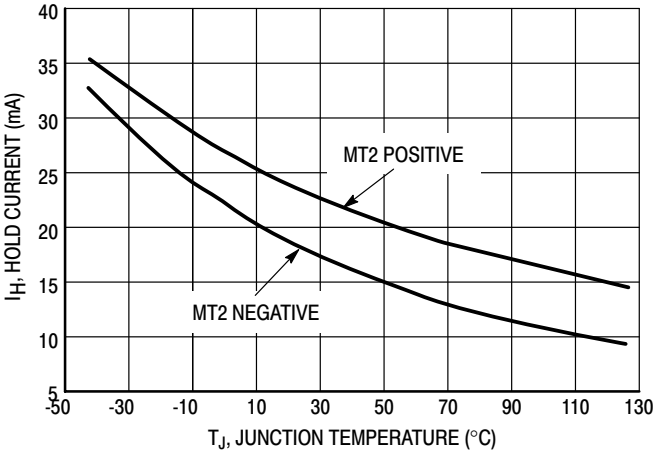


Figure 5. Hold Current Variation

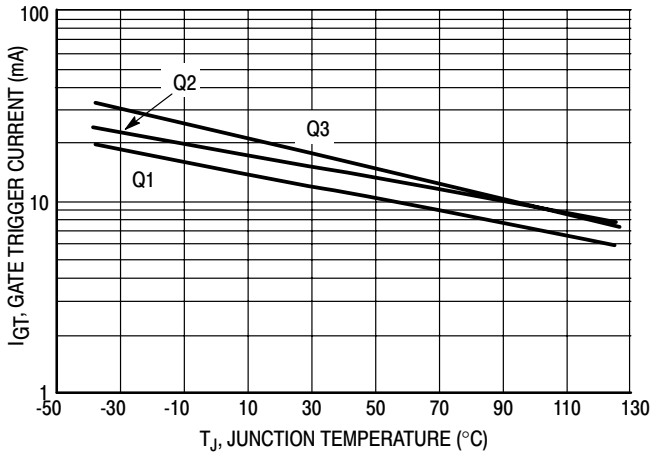


Figure 6. Gate Trigger Current Variation

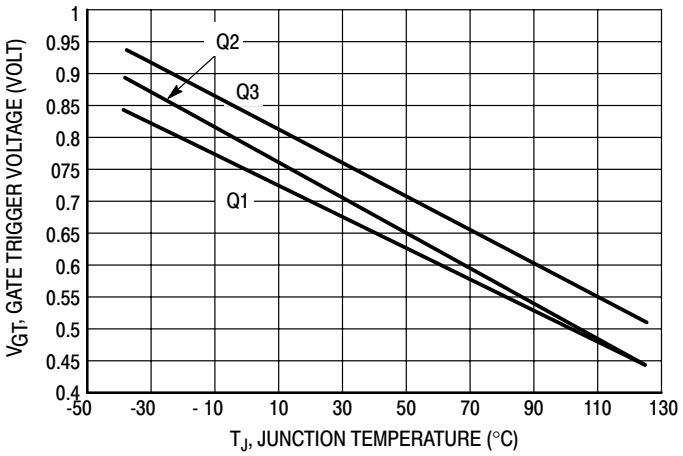


Figure 7. Gate Trigger Voltage Variation

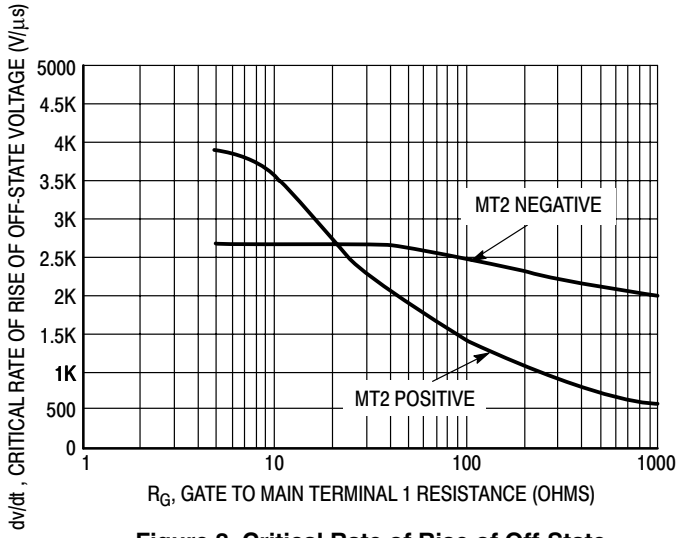


Figure 8. Critical Rate of Rise of Off-State Voltage (Exponential)

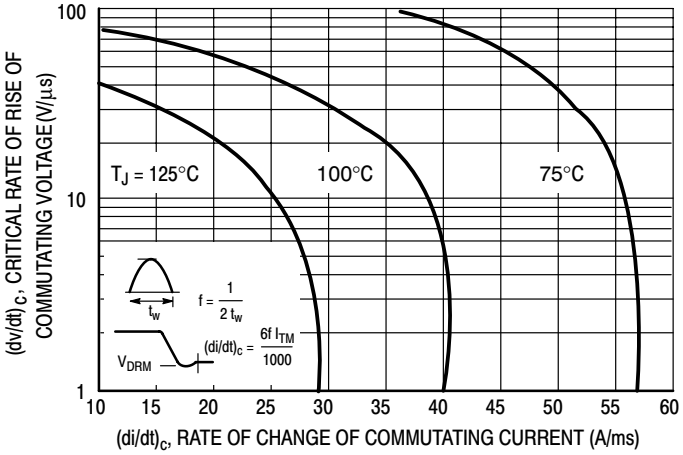
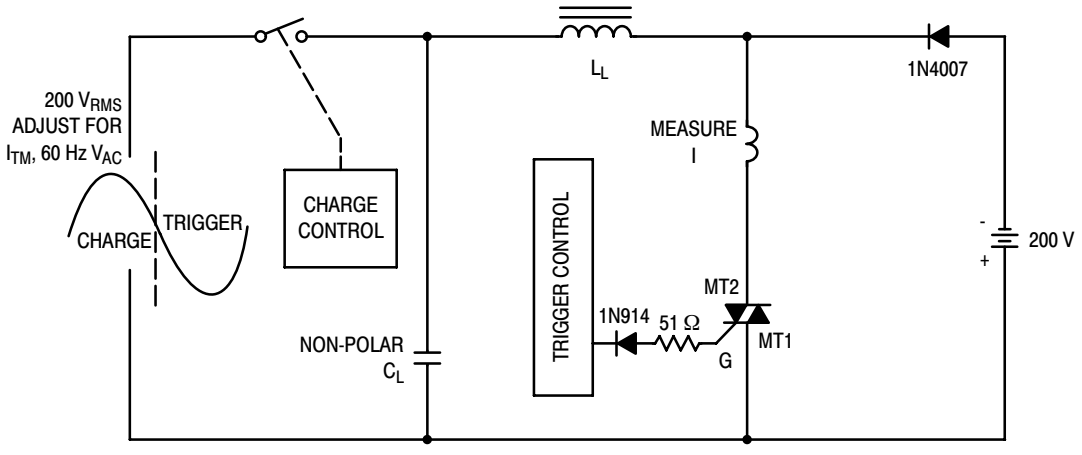


Figure 9. Critical Rate of Rise of Commutating Voltage

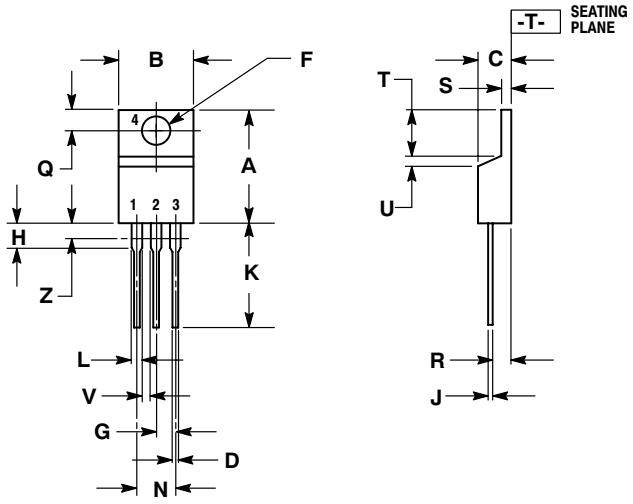


Note: Component values are for verification of rated $(di/dt)_c$. See AN1048 for additional information.

Figure 10. Simplified Test Circuit to Measure the Critical Rate of Rise of Commutating Current (di/dt)

PACKAGE DIMENSIONS

TO-220
CASE 221A-09
ISSUE AE



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.161	3.61	4.09
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.014	0.025	0.36	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

STYLE 4:
PIN 1. MAIN TERMINAL 1
2. MAIN TERMINAL 2
3. GATE
4. MAIN TERMINAL 2

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