

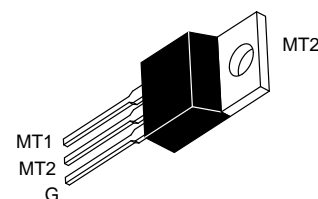
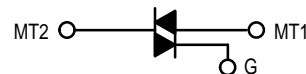
MAC218A8

TRIACs
8 AMPERES RMS
600 VOLTS

Triacs
Silicon Bidirectional Thyristors

... designed primarily for full-wave ac control applications, such as light dimmers, motor controls, heating controls and power supplies.

- Blocking Voltage to 600 Volts
- Glass Passivated Junctions for Greater Parameter Uniformity and Stability
- TO-220 Construction Low Thermal Resistance, High Heat Dissipation and Durability
- Gate Triggering Guaranteed in Four Modes



CASE 221A-07
(TO-220AB)
STYLE 4

MAXIMUM RATINGS ($T_J = 25^\circ\text{C}$ unless otherwise noted.)

Rating	Symbol	Value	Unit
Peak Repetitive Off-State Voltage ⁽¹⁾ (Gate Open, $T_J = 25$ to 125°C)	V_{DRM}	600	Volts
On-State Current RMS (Conduction Angle = 360° , $T_C = +80^\circ\text{C}$)	$I_{\text{T(RMS)}}$	8	Amps
Peak Non-repetitive Surge Current (One Full Cycle, 60 Hz, $T_C = 80^\circ\text{C}$, preceded and followed by rated current)	I_{TSM}	100	Amps
Fusing Current ($t = 8.3$ ms)	I^2t	40	A^2s
Peak Gate Power ($T_C = +80^\circ\text{C}$, Pulse Width = $2 \mu\text{s}$)	P_{GM}	16	Watts
Average Gate Power ($T_C = +80^\circ\text{C}$, $t = 8.3$ ms)	$P_{\text{G(AV)}}$	0.35	Watt
Peak Gate Trigger Current (Pulse Width = $1 \mu\text{s}$)	I_{GTM}	4	Amps
Operating Junction Temperature Range	T_J	-40 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +150	$^\circ\text{C}$

1. V_{DRM} for all types can be applied on a continuous basis. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

MAC218A8

THERMAL CHARACTERISTICS

Symbol	Parameter	Value	Unit
$R_{\theta JC}$ $R_{\theta JA}$	Thermal Resistance — Junction to Case — Junction to Ambient	2.0 62.5	$^{\circ}C/W$
T_L	Maximum Lead Temperature for Soldering Purposes 1/8" from Case for 10 Seconds	260	$^{\circ}C$

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Blocking Current ($V_D = \text{Rated } V_{DRM}$, gate open) $T_J = 25^{\circ}C$ $T_J = 125^{\circ}C$	I_{DRM}	— —	— —	10 2	μA mA
Peak On-State Voltage (Either Direction) ($I_{TM} = 11.3$ A Peak; Pulse Width = 1 to 2 ms, Duty Cycle < 2%)	V_{TM}	—	1.7	2	Volts
Gate Trigger Current (Continuous dc) ($V_D = 12$ Vdc, $R_L = 12\Omega$) Trigger Mode MT2(+), Gate(+); MT2(+), Gate(-); MT2(-), Gate(-) MT2(-), Gate(+)	I_{GT}	— —	— —	50 75	mA
Gate Trigger Voltage (Continuous dc) (Main Terminal Voltage = 12 Vdc, $R_L = 100$ Ohms) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-) MT2(-), G(+) (Main Terminal Voltage = Rated V_{DRM} , $R_L = 10$ k Ω , $T_J = +125^{\circ}C$) MT2(+), G(+); MT2(-), G(-); MT2(+), G(-) MT2(-), G(+)	V_{GT}	— — — — 0.2 0.2	0.9 0.9 1.1 1.4 — —	2 2 2 2.5 — —	Volts
Holding Current (Either Direction) ($V_D = 24$ Vdc, Gate Open, Initiating Current = 200 mA)	I_H	—	—	50	mA
Critical Rate of Rise of Commutating Off-State Voltage ($V_D = \text{Rated } V_{DRM}$, $I_{TM} = 11.3$ A, Commutating $di/dt = 4.1$ A/ms, Gate Unenergized, $T_C = 80^{\circ}C$)	$dv/dt(c)$	—	5	—	V/ μs
Critical Rate of Rise of Off-State Voltage ($V_D = \text{Rated } V_{DRM}$, Exponential Voltage Rise, Gate Open, $T_J = 125^{\circ}C$)	dv/dt	—	100	—	V/ μs

FIGURE 1 — CURRENT DERATING

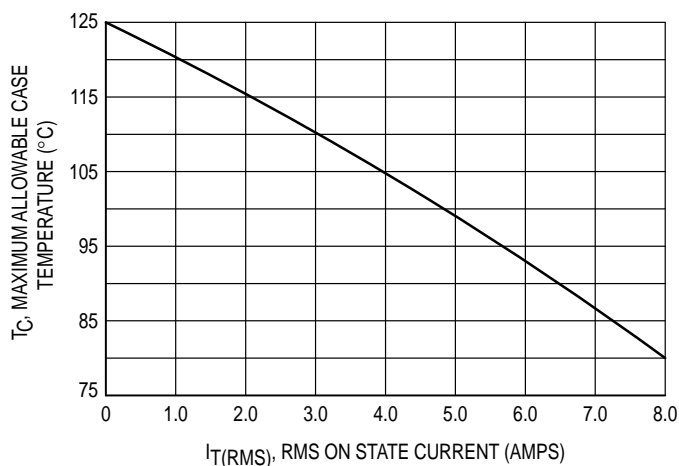


FIGURE 2 — POWER DISSIPATION

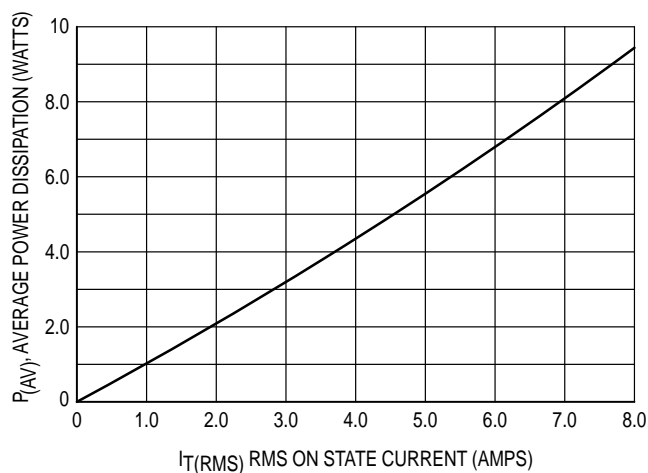


FIGURE 3 — NORMALIZED GATE TRIGGER CURRENT

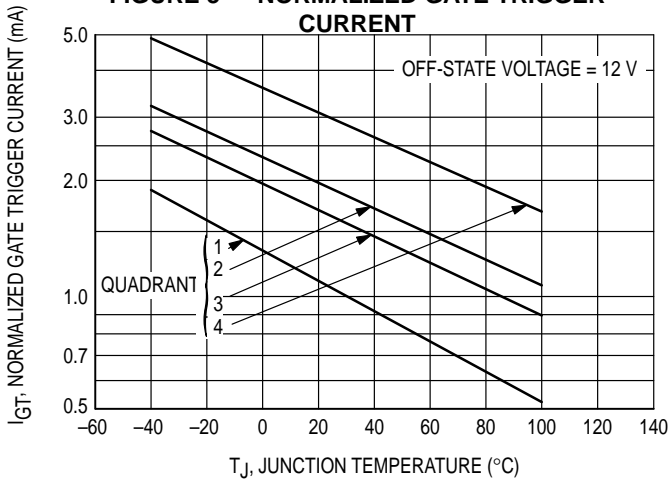


FIGURE 4 — NORMALIZED GATE TRIGGER VOLTAGE

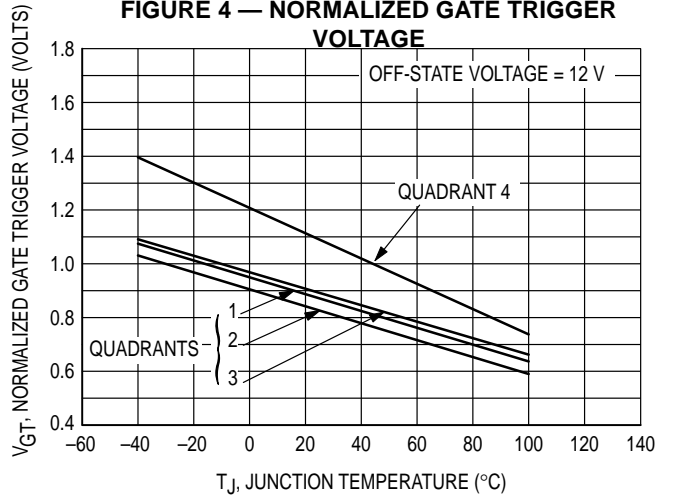
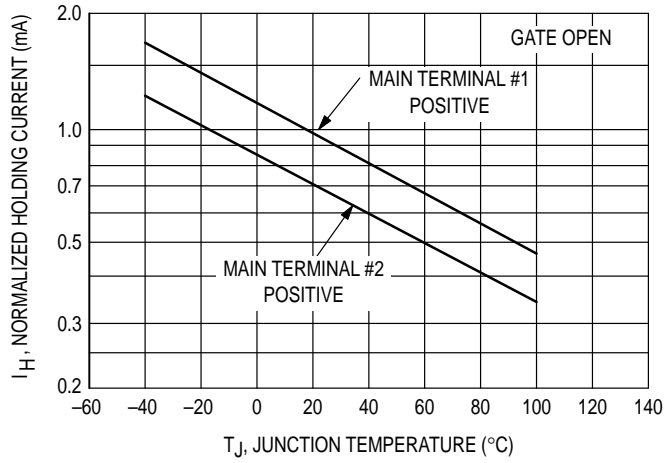
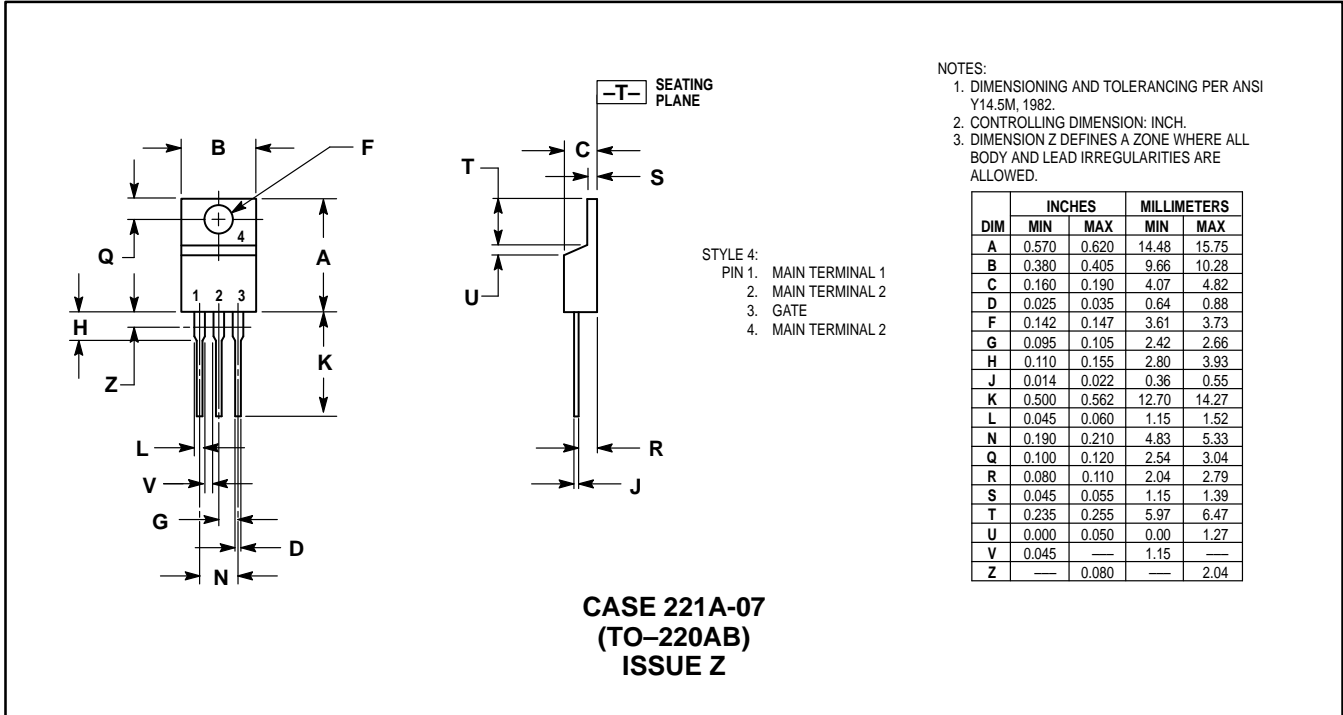


FIGURE 5 — NORMALIZED HOLDING CURRENT



PACKAGE DIMENSIONS



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JAPAN: Motorola Japan Ltd.; SPD, Strategic Planning Office, 141,
 4-32-1 Nishi-Gotanda, Shinagawa-ku, Tokyo, Japan. 81-3-5487-8488

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