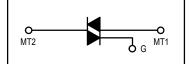
Triacs Silicon Bidirectional Triode Thyristors

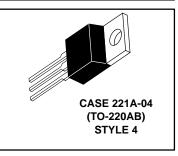
... designed primarily for industrial and consumer applications for full wave control of ac loads such as appliance controls, heater controls, motor controls, and other power switching applications.

- Sensitive Gate Triggering in 3 Modes for AC Triggering on Sinking Current Sources (MAC228 Series)
- Four Mode Triggering for Drive Circuits that Source Current (MAC228A Series)
- All Diffused and Glass-Passivated Junctions for Parameter Uniformity and Stability
- Small, Rugged, Thermowatt Construction for Low Thermal resistance and High Heat Dissipation
- Center Gate Geometry for Uniform Current Spreading









MAXIMUM RATINGS (T_J = 25° C unless otherwise noted.)

Rating	Symbol	Value	Unit
Peak Repetitive Off-State Voltage(1) $(T_J = -40 \text{ to } 110^{\circ}\text{C}$ 1/2 Sine Wave 50 to 60 Hz, Gate Open) MAC228-4, MAC228A4 MAC228-6, MAC228A6 MAC228-8, MAC228A8	VDRM	200 400 600	Volts
MAC228-10, MAC228A10 On-State RMS Current (T _C = 80°C)	^I T(RMS)	800 8	Amps
Full Cycle Sine Wave 50 to 60 Hz Peak Non-repetitive Surge Current (One Full Cycle 60 Hz, T _J = 110°C)	ITSM	80	Amps
Circuit Fusing (t = 8.3 ms)	l ² t	26	A ² s
Peak Gate Current (t $\leq 2 \mu s$)	I _{GM}	±2	Amps
Peak Gate Voltage (t $\leq 2 \mu s$)	V _{GM}	±10	Volts
Peak Gate Power (t $\leq 2 \mu$ s)	P _{GM}	20	Watts
1. V _{DRM} for all types can be applied on a continuous basis. Blocking volta	ges shall not be tested with a c	onstant current	(continued)

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.



MAC228 Series MAC228A Series

MAXIMUM RATINGS — continued

Rating	Symbol	Value	Unit
Average Gate Power (T _C = 80°C, t \leq 8.3 ms)	PG(AV)	0.5	Watts
Operating Junction Temperature Range	ТJ	-40 to 110	°C
Storage Temperature Range	T _{stg}	-40 to 150	°C
Mounting Torque		8	in. lb.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	2.2	°C/W
Thermal Resistance, Junction to Ambient	R _{θJA}	60	°C/W

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$ and either polarity of MT2 to MT1 voltage unless otherwise noted.)

Characteristic	Symbol	Min	Тур	Max	Unit
Peak Blocking Current $(V_D = Rated V_{DRM})$ $T_J = 25^{\circ}C$ $T_J = 110^{\circ}C$	IDRM			10 2	μA mA
Peak On-State Voltage (I _{TM} = 11 A Peak, Pulse Width ≤ 2 ms, Duty Cycle ≤ 2%)	VTM	-	—	1.8	Volts
Gate Trigger Current (Continuous dc) $(V_D = 12 V, R_L = 100 \Omega)$ MT2(+), G(+); MT2(+), G(-); MT2(-), G(-) MT2(-), G(+) "A" Suffix Only	lGT			5 10	mA
$ \begin{array}{l} \mbox{Gate Trigger Voltage (Continuous dc)} \\ (V_D = 12 \ V, \ R_L = 100 \ \Omega) \\ MT2(+), \ G(+); \ MT2(+), \ G(-); \ MT2(-), \ G(-) \\ MT2(-), \ G(+) \ "A" \ Suffix \ Only \\ (V_D = Rated \ V_{DRM}, \ T_C = 110^{\circ}C, \ R_L = 10 \ k) \\ MT2(+), \ G(+); \ MT2(+), \ G(-); \ MT2(-), \ G(-) \\ MT2(-), \ G(+) \ "A" \ Suffix \ Only \\ \end{array} $	VGT	 0.2 0.2	 	2 2.5 —	Volts
Holding Current (V _D = 12 Vdc, I _{TM} = 200 mA, Gate Open)	Ч	-	_	15	mA
Gate-Controlled Turn-On Time (V_D = Rated V_{DRM} , I_{TM} = 16 A Peak, I_G = 30 mA)	tgt	-	1.5	—	μs
Critical Rate of Rise of Off-State Voltage (V _D = Rated V _{DRM} , Exponential Waveform, T _C = 110°C)	dv/dt	—	25	—	V/µs
Critical Rate of Rise of Commutation Voltage (V _D = Rated V _{DRM} , I _{TM} = 11.3 A, Commutating di/dt = 4.1 A/ms, Gate Unenergized, T _C = 80°C)	dv/dt(c)	_	5	_	V/µs

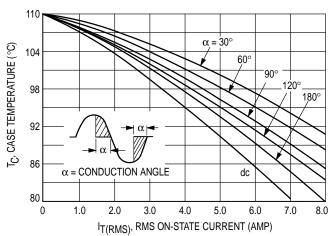
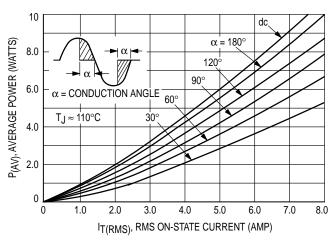
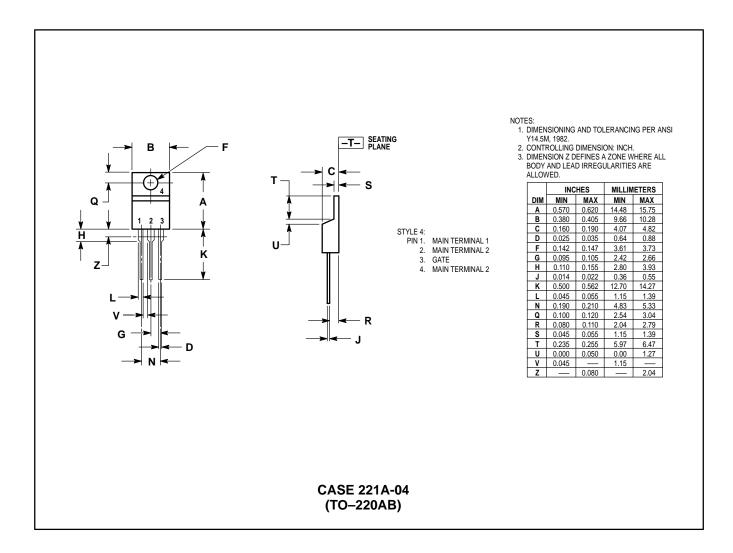


FIGURE 1 – RMS CURRENT DERATING

FIGURE 2 - ON-STATE POWER DISSIPATION



PACKAGE DIMENSIONS



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