

MAC08BT1, MAC08MT1

Preferred Device

Sensitive Gate Triacs

Silicon Bidirectional Thyristors

Designed for use in solid state relays, MPU interface, TTL logic and other light industrial or consumer applications. Supplied in surface mount package for use in automated manufacturing.

Features

- Sensitive Gate Trigger Current in Four Trigger Modes
- Blocking Voltage to 600 Volts
- Glass Passivated Surface for Reliability and Uniformity
- Surface Mount Package
- Pb-Free Packages are Available

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

Rating	Symbol	Value	Unit
Peak Repetitive Off-State Voltage (Note 1) (Sine Wave, 50 to 60 Hz, Gate Open, $T_J = 25$ to 110°C) MAC08BT1 MAC08MT1	V_{DRM} , V_{RRM}	200 600	V
On-State Current RMS ($T_C = 80^\circ\text{C}$) (Full Sine Wave 50 to 60 Hz)	$I_{\text{T(RMS)}}$	0.8	A
Peak Non-repetitive Surge Current (One Full Cycle Sine Wave, 60 Hz, $T_C = 25^\circ\text{C}$)	I_{TSM}	8.0	A
Circuit Fusing Considerations (Pulse Width = 8.3 ms)	I^2t	0.4	A^2s
Peak Gate Power ($T_C = 80^\circ\text{C}$, Pulse Width $\leq 1.0 \mu\text{s}$)	P_{GM}	5.0	W
Average Gate Power ($T_C = 80^\circ\text{C}$, $t = 8.3 \text{ ms}$)	$P_{\text{G(AV)}}$	0.1	W
Operating Junction Temperature Range	T_J	-40 to +110	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +150	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. V_{DRM} and V_{RRM} 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.

THERMAL CHARACTERISTICS

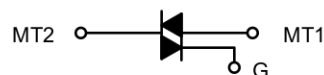
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient PCB Mounted per Figure 1	$R_{\theta\text{JA}}$	156	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Tab Measured on MT2 Tab Adjacent to Epoxy	$R_{\theta\text{JT}}$	25	$^\circ\text{C/W}$
Maximum Device Temperature for Soldering Purposes for 10 Secs Maximum	T_L	260	$^\circ\text{C}$



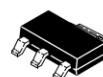
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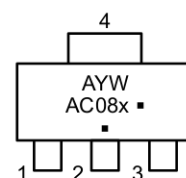
TRIAC
0.8 AMPERE RMS
200 thru 600 VOLTS



MARKING DIAGRAM



SOT-223
CASE 318E
STYLE 11



A = Assembly Location
Y = Year
W = Work Week
AC08X = Device Code
x = B or M
▪ = Pb-Free Package

(Note: Microdot may be in either location)

PIN ASSIGNMENT

1	Main Terminal 1
2	Main Terminal 2
3	Gate
4	Main Terminal 2

ORDERING INFORMATION

Device	Package	Shipping†
MAC08BT1	SOT-223	1000 Tape & Reel
MAC08BT1G	SOT-223 (Pb-Free)	1000 Tape & Reel
MAC08MT1	SOT-223	1000 Tape & Reel
MAC08MT1G	SOT-223 (Pb-Free)	1000 Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.