

MAC12D, MAC12M, MAC12N

Triacs

Silicon Bidirectional Thyristors

Designed for high performance full-wave ac control applications where high noise immunity and commutating di/dt are required.

Features

- Blocking Voltage to 800 Volts
- On-State Current Rating of 12 Amperes RMS at 70°C
- Uniform Gate Trigger Currents in Three Quadrants, Q1, Q2, and Q3
- High Immunity to dv/dt – 250 V/μs Minimum at 125°C
- High Commutating di/dt – 6.5 A/ms Minimum at 125°C
- Industry Standard TO-220 Package
- High Surge Current Capability – 100 Amperes
- These Devices are Pb-Free and are RoHS Compliant*

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

Rating	Symbol	Value	Unit
Peak Repetitive Off-State Voltage (Note 1) (T _J = -40 to 125°C, Sine Wave, 50 to 60 Hz, Gate Open)	V _{DRM} , V _{RRM}	400 600 800	V
On-State RMS Current (All Conduction Angles; T _C = 70°C)	I _{T(RMS)}	12	A
Peak Non-Repetitive Surge Current (One Full Cycle, 60 Hz, T _J = 125°C)	I _{TSM}	100	A
Circuit Fusing Consideration (t = 8.33 ms)	I ² t	41	A ² sec
Peak Gate Power (Pulse Width ≤ 1.0 μs, T _C = 80°C)	P _{GM}	16	W
Average Gate Power (t = 8.3 ms, T _C = 80°C)	P _{G(AV)}	0.35	W
Operating Junction Temperature Range	T _J	-40 to +125	°C
Storage Temperature Range	T _{stg}	-40 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

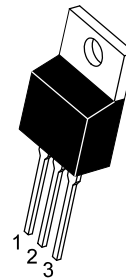
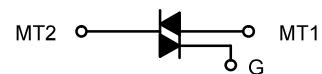
1. V_{DRM} and V_{RRM} for all types can be applied on a continuous basis. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.



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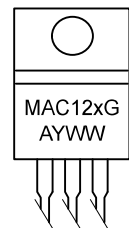
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TRIACS
12 AMPERES RMS
400 thru 800 VOLTS



TO-220
CASE 221A
STYLE 4

MARKING DIAGRAM



x = D, M, or N
A = Assembly Location
Y = Year
WW = Work Week
G = Pb-Free Package

PIN ASSIGNMENT

Pin	Assignment
1	Main Terminal 1
2	Main Terminal 2
3	Gate
4	Main Terminal 2

ORDERING INFORMATION

Device	Package	Shipping
MAC12DG	TO-220 (Pb-Free)	50 Units / Rail
MAC12MG	TO-220 (Pb-Free)	50 Units / Rail
MAC12NG	TO-220 (Pb-Free)	50 Units / Rail

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.