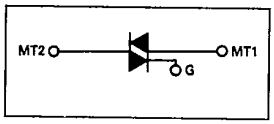
T4120 Series

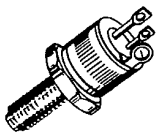
Triacs
Silicon Bidirectional Triode Thyristors

... designed primarily for industrial and military applications for full wave control of ac loads in applications such as light dimmers, power supplies, heating controls, motor controls, welding equipment and power switching systems.

- All Diffused and Glass Passivated Junctions for Greater Stability
- Isolated Stud Package
- Gate Triggering Guaranteed in All 4 Quadrants

TRIACs
15 AMPERES RMS
200 thru 800 VOLTS





CASE 235-03
STYLE 2

3

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Off-State Voltage, Note 1 (T_J = −65 to +100°C) Gate Open T4120 B D M N	V_{DRM}	 200 400 600 800	Volts
RMS On-State Current (Conduction Angle = 360°) T_C = +75°C	$I_{T(RMS)}$	15	Amps
Peak Non-Repetitive Surge Current (One Full Cycle, 60 Hz)	I_{TSM}	100	Amps
Circuit Fusing (T_J = −65 to +100°C, t = 1.25 to 10 ms)	I^2t	50	A^2s
Peak Gate Power (Pulse Width = 1 μs)	P_{GM}	16	Watts
Average Gate Power	$P_{G(AV)}$	0.5	Watt
Peak Gate Trigger Current (Pulse Width = 1 μs)	I_{GTM}	4	Amps
Operating Case Junction Temperature Range	T_C	−65 to +100	°C
Storage Temperature Range	T_{stg}	−65 to +150	°C
Stud Torque	—	30	in. lb.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.1	°C/W

Note 1. Ratings apply for open gate conditions. Thyristor devices shall not be tested with a constant current source for blocking capability such that the voltage applied exceeds the rated blocking voltage.

T4120 Series

ELECTRICAL CHARACTERISTICS (T_C = 25°C, either polarity of MT2 to MT1 voltage, unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current (Rated V_{DRM} or V_{RRM}, gate open) T_C = 25°C	I_{DRM}, I_{RRM}	—	—	10	μA
T_C = 100°C		—	—	2	mA
Peak On-State Voltage (I_T = 21 A Peak)	V_{TM}	—	1.4	1.8	Volt
Gate Trigger Current (Continuous dc), Note 1 (V_D = 12 Vdc, R_L = 30 Ohms)	I_{GT}				mA
$V_{MT2(+)}$, $V_{G(+)}$; $V_{MT2(-)}$, $V_{G(-)}$		—	—	50	
$V_{MT2(+)}$, $V_{G(-)}$; $V_{MT2(-)}$, $V_{G(+)}$		—	—	80	
$V_{MT2(+)}$, $V_{G(+)}$; $V_{MT2(-)}$, $V_{G(-)}$, T_C = −65°C		—	—	150	
$V_{MT2(+)}$, $V_{G(-)}$; $V_{MT2(-)}$, $V_{G(+)}$, T_C = −65°C		—	—	200	
Gate Trigger Voltage (Continuous dc) (All Quadrants) (V_D = 12 Vdc, R_L = 30 Ohms)	V_{GT}				Volts
T_C = 25°C		—	—	2.5	
T_C = −65°C		—	—	4	
(V_D = Rated V_{DROM}, R_L = 125 Ohms, T_C = 100°C)		0.2	—	—	
Holding Current (V_D = 12 Vdc, Gate Open)	I_H				mA
(I_T = 500 mA) T_C = 25°C		—	—	75	
T_C = −65°C		—	—	300	
Gate Controlled Turn-On Time (V_D = Rated V_{DRM}, I_{TM} = 25 A Peak, I_{GT} = 160 mA, Rise Time = 0.1 μs)	t_{gt}	—	1.6	2.5	μs
Critical Rate of Rise of Commutation Voltage (Rated V_{DRM}, $I_{T(RMS)}$ = 15 A, Cummutating di/dt = 8 A/ms, Gate Unenergized, T_C = 75°C)	dv/dt(c)	2	10	—	V/μs
Critical Rate of Rise of Off-State Voltage (Rated V_{DRM}, Exponential Voltage Rise, Gate Open, T_C = 100°C)	dv/dt				V/μs
T4120 B		30	150	—	
D		20	100	—	
M		10	75	—	
N		10	—	—	

Note 1. All Voltage polarities referenced to main terminal 1.

FIGURE 1 – CURRENT DERATING

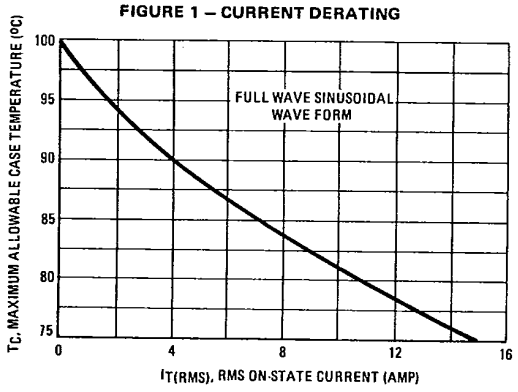


FIGURE 2 – POWER DISSIPATION