

Triacs

Silicon Bidirectional Triode Thyristors

... designed primarily for industrial and military applications for the control of ac loads in applications such as light dimmers, power supplies, heating controls, motor controls, welding equipment and power switching systems; or wherever full-wave, silicon gate controlled solid-state devices are needed.

- All Diffused and Glass Passivated Junctions for Greater Stability
- Pressfit, Stud and Isolated Stud Packages
- Gate Triggering Guaranteed In All 4 Quadrants

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
*Peak Repetitive Off-State Voltage ($T_J = -65$ to $+100^\circ\text{C}$) 1/2 Sine Wave 50 to 60 Hz, Gate Open 2N5571, 2N5573, 2N6145 2N5572, 2N5574, 2N6146 T4100M, T4110M, 2N6147	V_{DRM}	200 400 600	Volts
*Peak Gate Voltage	V_{GM}	20	Volts
*RMS On-State Current ($T_C = -65$ to $+80^\circ\text{C}$) ($T_C = +85^\circ\text{C}$)	$I_T(\text{RMS})$	15 10	Amps
*Peak Non-Repetitive Surge Current (One Full cycle of surge current at 60 Hz, preceded and followed by rated current, $T_C = 85^\circ\text{C}$)	I_{TSM}	100	Amps
Circuit Fusing ($T_C = -65$ to $+80^\circ\text{C}$, $t = 1$ to 8.3 ms)	I^2t	40	A^2s
Peak Gate Power *($T_C = 80^\circ\text{C}$, Pulse Width = $1 \mu\text{s}$) 2N5571 thru 2N5574 T4100M, T4110M *($T_C = 80^\circ\text{C}$, Pulse Width = $2 \mu\text{s}$) 2N6145 thru 2N6147	P_{GM}	18 18 20	Watts
*Average Gate Power ($T_C = 80^\circ\text{C}$, Pulse Width = 8.3 ms)	$P_{G(AV)}$	0.5	Watt
*Peak Gate Current	I_{GM}	2	Amps
*Operating Junction Temperature Range	T_J	-65 to $+100$	$^\circ\text{C}$
*Storage Temperature Range	T_{stg}	-65 to $+150$	$^\circ\text{C}$
Stud Torque *2N5573, 2N5574, T4110M *2N6145, 2N6146, 2N6147	—	30	in. lb.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Thermal Resistance, Junction to Case	$R_{\theta JC}$	1	$^\circ\text{C/W}$

*Indicates JEDEC Registered Data.

**2N5571
 thru
 2N5574
 2N6145
 thru
 2N6147
 T4100M
 T4110M**

**TRIACs
 15 AMPERES RMS
 200 thru 600 VOLTS**



(TO-203)

2N5571
 2N5572
 T4100M



CASE 175-03

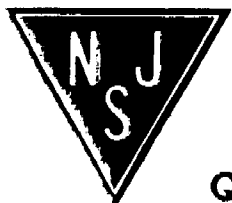
2N5573
 2N5574
 T4110M



CASE 311-02

2N6145
 2N6146
 2N6147

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2N5571 thru 2N5574 • 2N6145 thru 2N6147 • T4100M • T4110M

ELECTRICAL CHARACTERISTICS (T_C = 25°C, and 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}) T _C = 25°C T _C = 100°C	I _{DRM} , I _{RRM}	— —	— —	10 2	μA mA
*Peak On-State Voltage (I _{TM} = 21 A Peak, Pulse Width = 1 to 2 ms, Duty Cycle ≤ 2%)	V _{TM}	—	1.3	1.8	Volts
Gate Trigger Current (Continuous dc), Note 1 (V _D = 12 Vdc, R _L = 30 Ohms) MT2(+), G(+); MT2(-), G(-) MT2(+), G(-); MT2(-), G(+) *MT2(+), G(+); MT2(-), G(-), T _C = -65°C *MT2(+), G(-); MT2(-), G(+), T _C = -65°C	I _{GT}	— — — —	— — — —	50 80 150 200	mA
Gate Trigger Voltage (Continuous dc) (All Quadrants) (V _D = 12 Vdc, R _L = 30 Ohms) T _C = 25°C *T _C = -65°C *(V _D = Rated V _{DRM} , R _L = 10 k ohms, T _C = +100°C)	V _{GT}	— — 0.2	— — —	2.5 4 —	Volts
Holding Current (V _D = 12 Vdc, Gate Open) (Initiating Current = 500 mA) T _C = 25°C *T _C = -65°C	I _H	— —	— —	75 300	mA
Gate Controlled Turn-On Time (Rated V _{DRM} , I _{TM} = 21 A Peak, I _{GT} = 160 mA, Rise Time = 0.1 μs, Pulse Width = 2 μs)	t _{gt}	—	1	2	μs
*Critical Rate-of-Rise of Commutation Voltage (Rated V _{DRM} , I _{TM} = 21 A Peak, Commutating di/dt = 8 A/ms, gate unenergized) T _C = 80°C 2N5571 thru 2N5574, T4100M, T4110M T _C = 75°C 2N6145 thru 2N6147	dv/dt(c)	2 2	10 10	— —	V/μs
Critical Rate-of-Rise of Off-State Voltage (Rated V _{DRM} , Exponential Voltage Rise, Gate Open, T _C = 100°C) *2N5571, 2N5573, 2N6145 *2N5572, 2N5574, 2N6146 T4100M, T4110M, 2N6147	dv/dt	30 20 10	150 100 75	— — —	V/μs

*Indicates JEDEC Registered Data.
Note 1. All Voltage polarities referenced to main terminal 1.