

DIGITRON SEMICONDUCTORS

T2800 SERIES

BIDIRECTIONAL TRIODE THYRISTORS

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Repetitive peak off-stage voltage ⁽¹⁾ (T _J = -40 to +100°C, gate open)	V _{DRM}		
T2800B		200	Volts
T2800C		300	
T2800D		400	
T2800E		500	
T2800M		600	
RMS on-state current (conduction angle = 360°, T _C = 80°C)	I _{T(RMS)}	8	Amps
Peak non-repetitive surge current (One Cycle, 60Hz, T _J = 80°C)	I _{TSM}	100	Amps
Circuit fusing considerations (T _J = -40 to +100°C, t = 1.25 to 10ms)	I ² t	50	A ² s
Peak gate power (pulse width = 1.0μs)	P _{GM}	16	Watts
Average gate power	P _{G(AV)}	0.35	Watts
Peak gate trigger current (pulse width = 1.0μs)	I _{GM}	4	Amps
Operating junction temperature range	T _J	-40 to +100	°C
Storage temperature range	T _{stg}	-40 to +150	°C

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.

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal resistance, junction to case	R _{θJC}	2.2	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit
Peak off state current (Rated V _{DRM} @ T _C = 100°C, gate open)	I _{DRM}	-	-	2	mA
Peak on-state voltage (I _{TM} = 30A peak)	V _{TM}	-	1.7	2	Volts
DC gate trigger current (continuous dc) (V _D = 12V, R _L = 12Ω) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-) MT2(-), G(+)	I _{GT}	- - - -	10 20 15 30	25 60 25 60	mA
DC gate trigger voltage (continuous dc) all polarities (V _D = 12V, R _L = 100Ω) (V _D = V _{DRM} , R _L = 125Ω, T _C = 100°C)	V _{GT}	- 0.2	1.25 -	2.5 -	Volts
Holding current (either direction) (V _D = 12V, gate open, I _T = 125mA)	I _H	-	15	30	mA
Gate controlled turn on time (V _D = Rated V _{DRM} , I _T = 10A, I _{GT} = 80mA, rise time = 0.1μs)	t _{gt}	-	1.6	-	μs
Critical rate of rise of commutating voltage (Rated V _{DRM} , I _{T(RMS)} = 8A, commutating di/dt = 4.3A/ms, gate unenergized, T _C = 80°C)	dv/dt(c)	-	10	-	V/μs

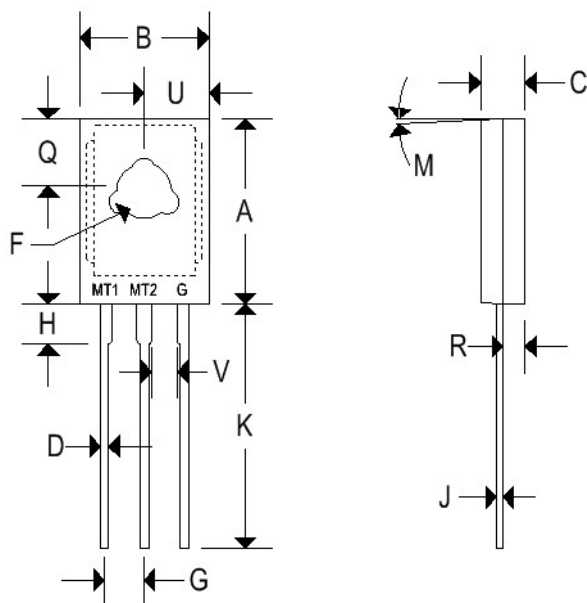
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Characteristic	Symbol	Min	Typ	Max	Unit
Critical rate of rise of off-state voltage (Rated V_{DRM} , exponential voltage rise, gate open, $T_C = 100^\circ\text{C}$)					
T2800B	dv/dt	100	-	-	V/ μs
T2800C		85	-	-	
T2800D		75	-	-	
T2800E		65	-	-	
T2800M		60	-	-	

MECHANICAL CHARACTERISTICS

Case	TO-220AB
Marking	Alpha-numeric
Pin out	See below



	TO-220AB			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.575	0.620	14.600	15.750
B	0.380	0.405	9.650	10.290
C	0.160	0.190	4.060	4.820
D	0.025	0.035	0.640	0.890
F	0.142	0.147	3.610	3.730
G	0.095	0.105	2.410	2.670
H	0.110	0.155	2.790	3.930
J	0.014	0.022	0.360	0.560
K	0.500	0.562	12.700	14.270
L	0.045	0.055	1.140	1.390
N	0.190	0.210	4.830	5.330
Q	0.100	0.120	2.540	3.040
R	0.080	0.110	2.040	2.790
S	0.045	0.055	1.140	1.390
T	0.235	0.255	5.970	6.480
U	-	0.050	-	1.270
V	0.045	-	1.140	-
Z	-	0.080	-	2.030

FIGURE 1 – CURRENT DERATING

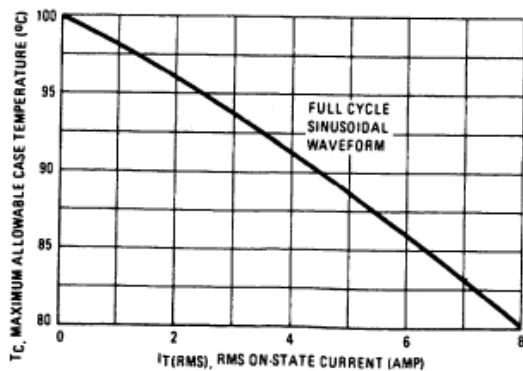


FIGURE 2 – POWER DISSIPATION

