

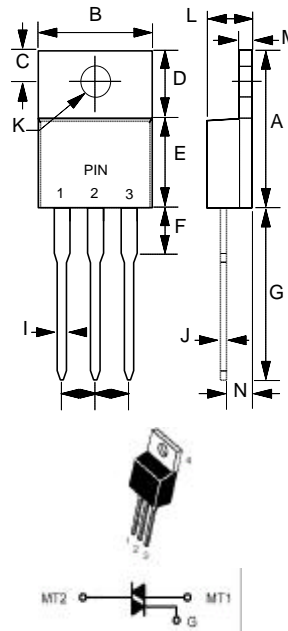
**Sensitive Gate Triacs  
Silicon Bidirectional Thyristors**

**TRIACS  
8 AMPERES RMS  
400 thru 800 VOLTS**

**FEATURES**

- Blocking Voltage 400 thru 800 Volts
- All Diffused and Glass Passivated Junctions for Greater Parameter Uniformity and Stability
- Small, Rugged, Thermowatt Construction for Low Thermal Resistance, High Heat Dissipation and Durability
- Four Quadrant Gating
- Pb-Free Package

**TO-220AB**



TO-220AB		
DIM.	MIN.	MAX.
A	14.22	15.88
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	8.26	9.28
F	-	6.35
G	12.70	14.73
H	2.29	2.79
I	0.51	1.14
J	0.30	0.64
K	3.53 $\varnothing$	4.09 $\varnothing$
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92

All Dimensions in millimeter

PIN ASSIGNMENT	
1	Main Terminal 1
2	Main Terminal 2
3	Gate
4	Main Terminal 2

**MAXIMUM RATINGS** (T<sub>J</sub>= 25 unless otherwise noticed)

Rating	Symbol	Value	Unit
Peak Repetitive Off- State Voltage (1) (T <sub>J</sub> = -40 to 125 , Sine Wave, 50 to 60 Hz; Gate Open)  T8M25F400B T8M25F600B T8M25F800B	V <sub>DRM</sub> , V <sub>RRM</sub>	400 600 800	Volts
On-State RMS Current (T <sub>c</sub> = 80 ) Full Cycle Sine Wave 50 to 60 Hz	I <sub>T(RMS)</sub>	8.0	Amp
Peak Non-Repetitive Surge Current (One Full Cycle Sine Wave, 60 Hz, T <sub>J</sub> = 25 )	I <sub>TSM</sub>	100	Amps
Circuit Fusing Consideration (t = 8.3 ms)	I <sup>2</sup> t	40	A <sup>2</sup> s
Peak Gate Power ( t = 2.0 us, T <sub>c</sub> = 80 )	P <sub>GM</sub>	16	Watt
Average Gate Power ( t = 8.3 ms, T <sub>c</sub> = 80 )	P <sub>G(AV)</sub>	0.35	Watt
Peak Gate Current ( t = 2.0 us, T <sub>c</sub> = 80 )	I <sub>GM</sub>	4.0	Amp
Operating Junction Temperature Range	T <sub>J</sub>	-40 to +125	
Storage Temperature Range	T <sub>stg</sub>	-40 to +150	

Notice: (1) V<sub>DRM</sub> and V<sub>RRM</sub> 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	Value	Unit
Thermal Resistance - Junction to Case	RthJC	2.2	/W
Maximum Lead Temperature for Soldering Purposes 1/8" from Case for 10 Seconds	TL	260	

**ELECTRICAL CHARACTERISTICS** (Tc=25 unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
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**OFF CHARACTERISTICS**

Peak Reptitive Forward or Reverse Blocking Current (VD=Rated VDRM and VRRM)	IDRM IRRM	----	----	10	uA
				2.0	

TJ=25  
TJ=100

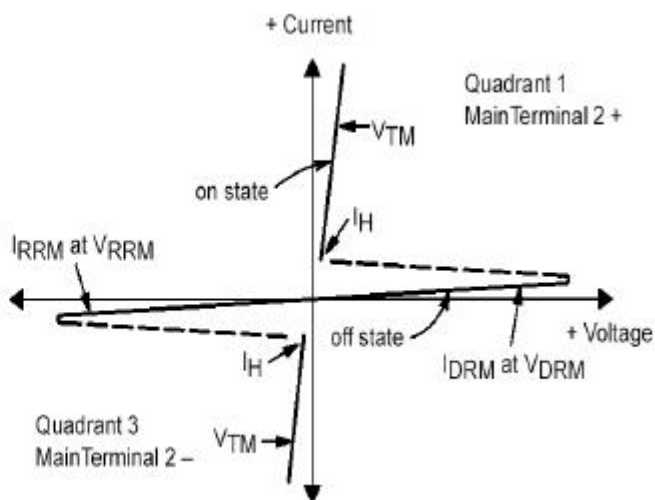
**ON CHARACTERISTICS**

Peak Forward On-State Voltage (ITM=± 30A Peak @Tp 2.0 ms, Duty Cycle 2%)	V <sub>TM</sub>	----	1.7	2.0	Volts
Gate Trigger Current (Continuous dc) (VD = 12V, RL = 100 Ohms)	I <sub>GT1</sub>	----	10	25	mA
	I <sub>GT2</sub>	----	20	60	
	I <sub>GT3</sub>	----	15	25	
	I <sub>GT4</sub>	----	30	60	
Holding Current (VD = 12 V, Initiating Current = ± 200 mA, Gate Open)	I <sub>H</sub>	----	15	30	mA
Gate Trigger Voltage (Continuous dc) (VD = 12 V, RL=100 Ohms) (All Quadrants)	V <sub>GT</sub>	----	1.25	2.5	Volts
Gate Non - Trigger Voltage (Continuous dc) (VD = 12 V, RL=100 Ohms, Tc=100 )	V <sub>GD</sub>	0.2	----	----	Volts
Gate-Controlled Turn-On Time (VD = Rated VDRM, ITM = 10 A, IGT = 80 mA, Rise Time=0.1us)	t <sub>gt</sub>	----	1.6	----	us

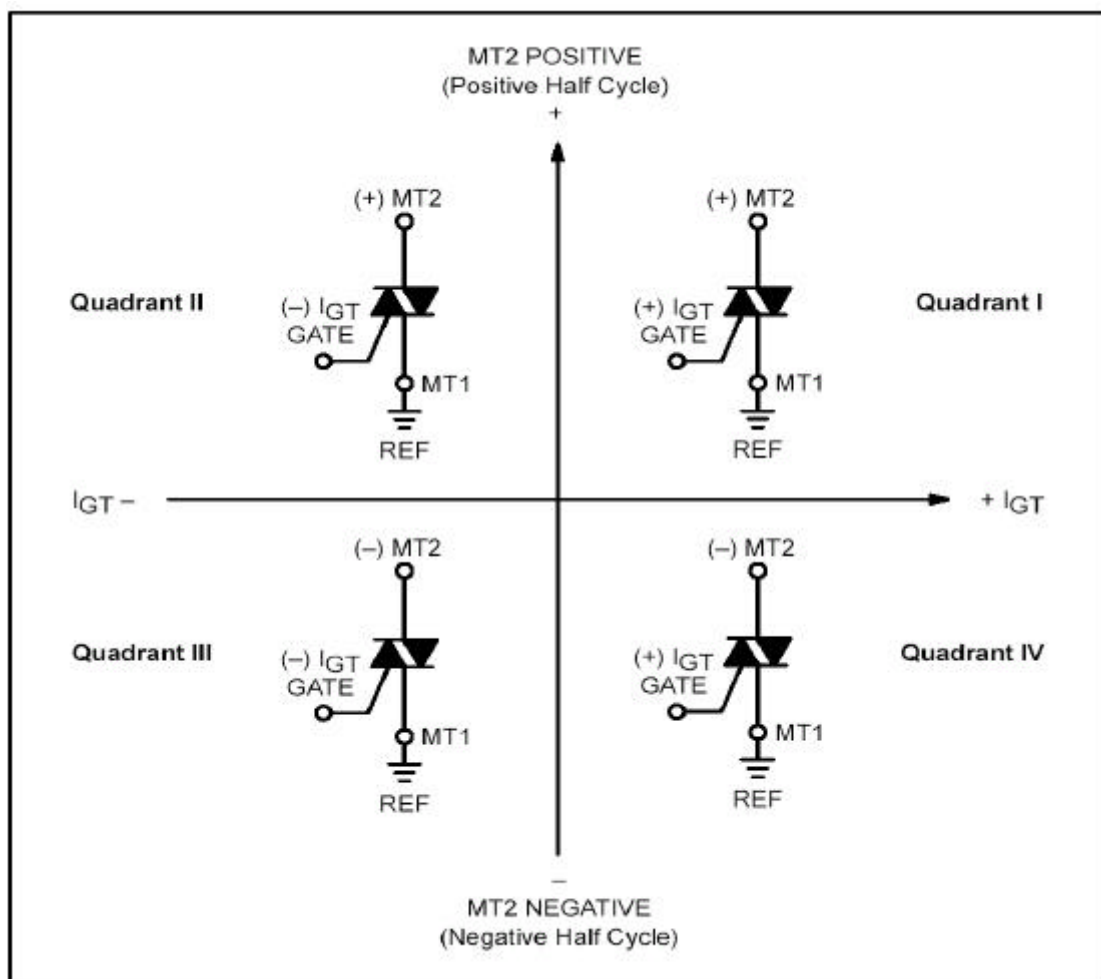
**DYNAMIC CHARACTERISTICS**

Critical Rate of Rise of Off-State Voltage (VD=Rated VDRM, Exponential Voltage Rise, Gate Open, TC=100 )	dv/dt	60	----	----	V/us
Critical Rate of Rise of Commutation Voltage (VD = Rated VDRM , ITM = 8 A, Commutating di/dt = 4.1 A/ms, Gate Unenergized, Tc = 80 )	dv/dt(c)	----	10	----	V/us

Symbol	Parameter
$V_{DRM}$	Peak Repetitive Forward Off State Voltage
$I_{DRM}$	Peak Forward Blocking Current
$V_{RRM}$	Peak Repetitive Reverse Off State Voltage
$I_{RRM}$	Peak Reverse Blocking Current
$V_{TM}$	Maximum On State Voltage
$I_H$	Holding Current



### Quadrant Definitions



All polarities are referenced to MT1

Whith in -phase signal (using standard AC lines) quadrants I and III are used

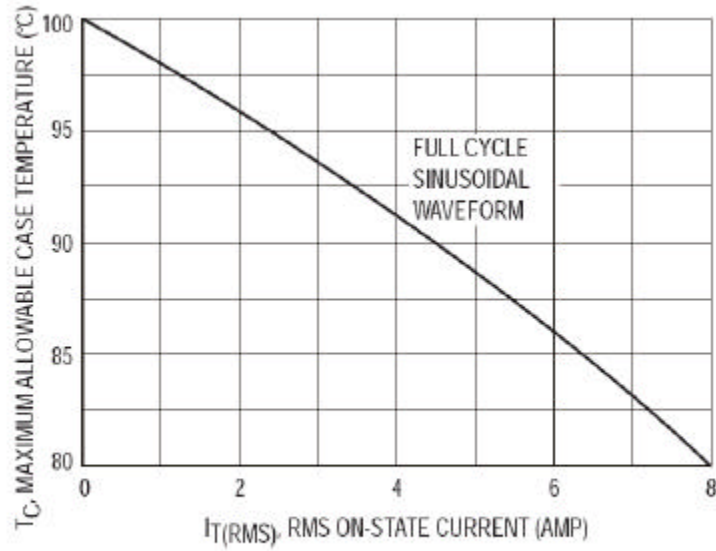


Figure 1. Current Derating

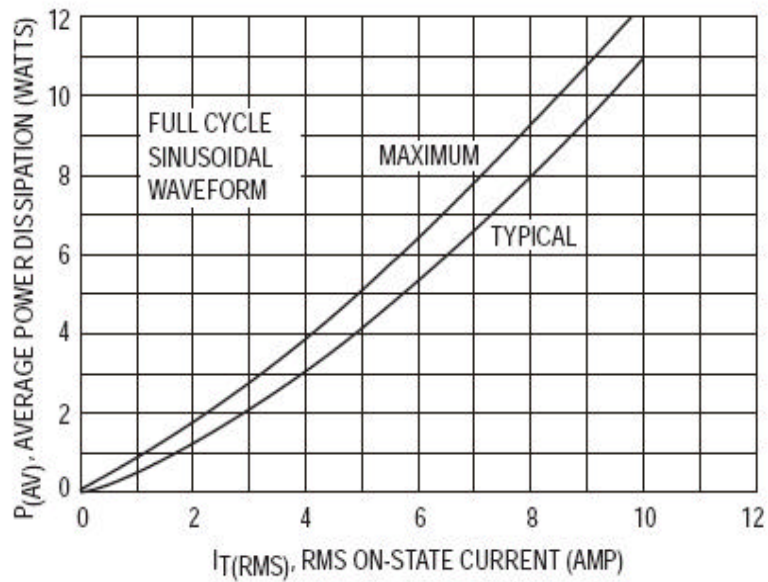


Figure 2. Power Dissipation