LITE-ON SEMICONDUCTOR

T8M25F-B SERIES

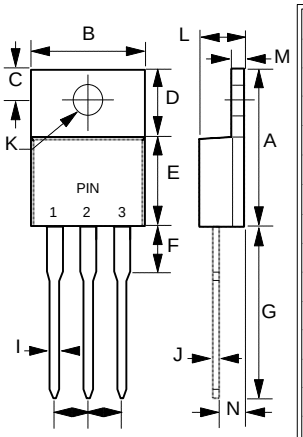
Sensitive Gate Triacs
Sillicon Bidirectional Thyristors

TRIACS
8 AMPERES RMS
400 thru 800 VOLTS

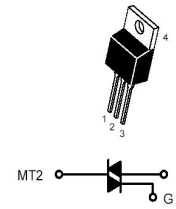
FEATURES

- 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

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 ⌀	4.09 ⌀
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 (Tj= 25℃ unless otherwise noticed)

Rating	Symbol	Value	Unit
Peak Repetitive Off– State Voltage (1) (T_J= -40 to 125℃, Sine Wave, 50 to 60 Hz; Gate Open) T8M25F400B T8M25F600B T8M25F800B	V_{DRM}, V_{RRM}	400 600 800	Volts
On-State RMS Current (T_C = 80℃) Full Cycle Sine Wave 50 to 60 Hz	$I_{T(RMS)}$	8.0	Amp
Peak Non-Repetitive Surge Current (One Full Cycle Sine Wave, 60 Hz, T_J= 25℃)	I_{TSM}	100	Amps
Circuit Fusing Consideration (t = 8.3 ms)	I^2t	40	A^2s
Peak Gate Power (t ≦ 2.0 us, Tc = 80℃)	P_{GM}	16	Watt
Average Gate Power (t ≦ 8.3 ms, Tc = 80℃)	$P_{G(AV)}$	0.35	Watt
Peak Gate Current (t ≦ 2.0 us, Tc = 80℃)	I_{GM}	4.0	Amp
Operating Junction Temperature Range	T_J	-40 to +125	℃
Storage Temperature Range	Tstg	-40 to +150	℃

Notice: (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.

REV. 1, Jul-2004, KTXC14

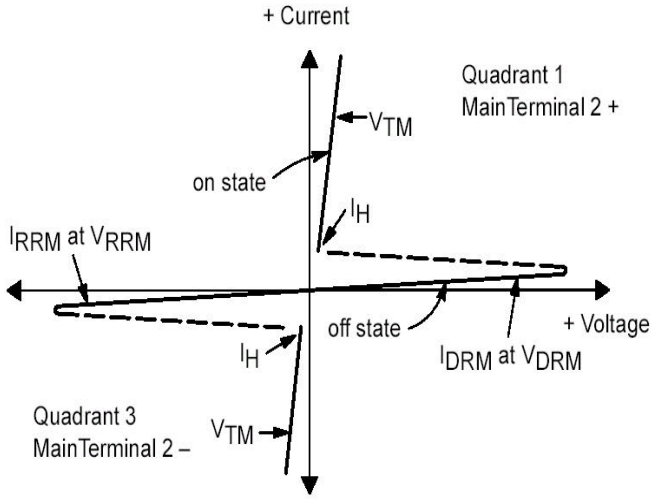
THERMAL CHARACTERISTICS

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	T_L	260	℃

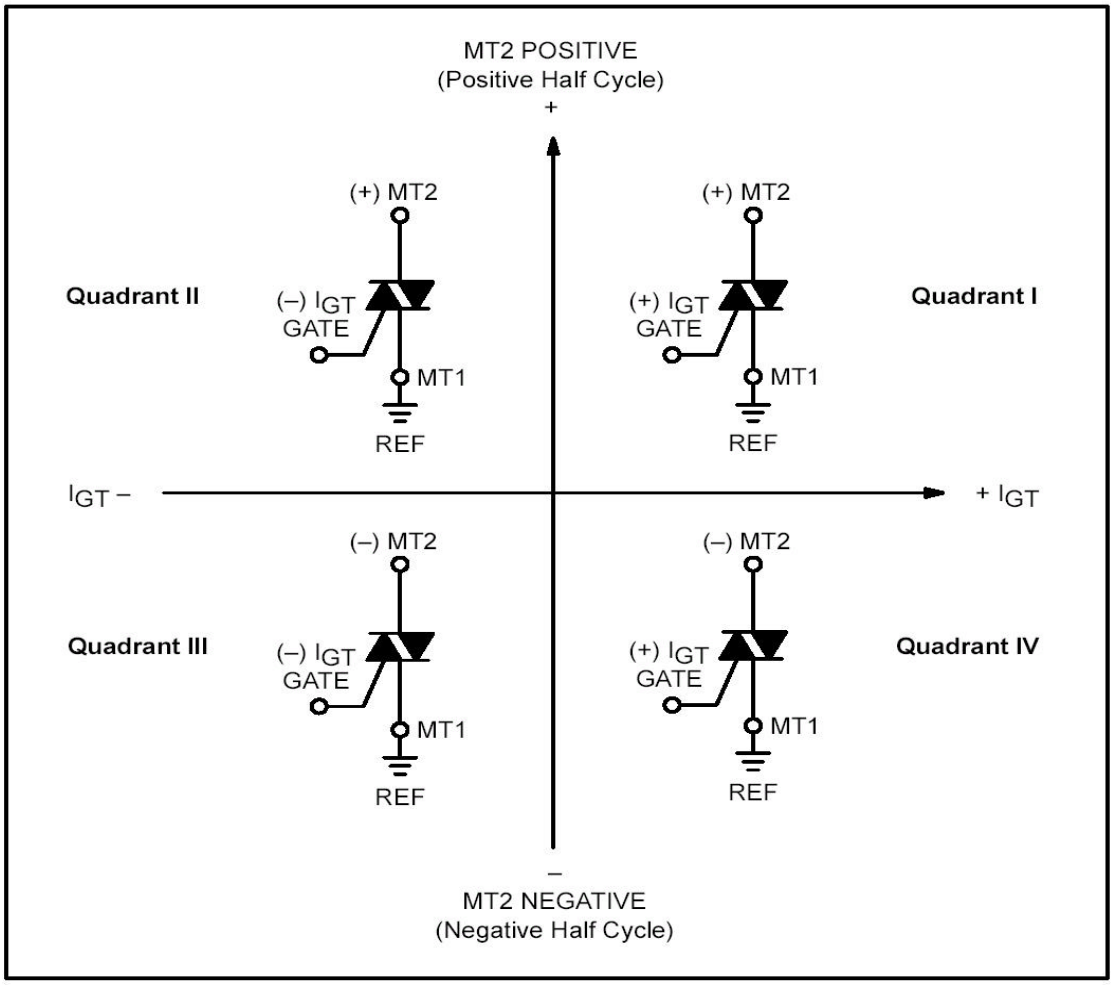
ELECTRICAL CHARACTERISTICS (T_C=25℃ unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Peak Reptitive Forward or Reverse Blocking Current (T_J=25℃ / T_J=100℃) (V_D=Rated V_{DRM} and V_{RRM})	I_{DRM} I_{RRM}	---- ----	---- ----	10 2.0	uA mA
ON CHARACTERISTICS					
Peak Forward On-State Voltage (I_{TM}=± 30A Peak @Tp ≦2.0 ms, Duty Cycle ≦ 2%)	V_{TM}	----	1.7	2.0	Volts
Gate Trigger Current (Continuous dc) (V_D = 12V, R_L = 100 Ohms)	I_{GT1} I_{GT2} I_{GT3} I_{GT4}	---- ---- ---- ----	10 20 15 30	25 60 25 60	mA
Holding Current (V_D = 12 V, Initiating Current = ± 200 mA, Gate Open)	I_H	----	15	30	mA
Gate Trigger Voltage (Continuous dc) (V_D = 12 V, R_L =100 Ohms) (All Quadrants)	V_{GT}	----	1.25	2.5	Volts
Gate Non - Trigger Voltage (Continuous dc) (V_D = 12 V, R_L =100 Ohms, Tc=100℃)	V_{GD}	0.2	----	----	Volts
Gate-Controlled Turn-On Time (V_D = Rated V_{DRM}, ITM = 10 A, I_{GT} = 80 mA, Rise Time=0.1us)	tgt	----	1.6	----	us
DYNAMIC CHARACTERISTICS					
Critical Rate of Rise of Off-State Voltage (V_D=Rated V_{DRM}, Exponential Voltage Rise, Gate Open, TC=100℃)	dv/dt	60	----	----	V/us
Critical Rate of Rise of Commutation Voltage (V_D = Rated VDRM , I_{TM} = 8 A, Commutating di/dt = 4.1 A/ms, Gate Unenergized, T_C = 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

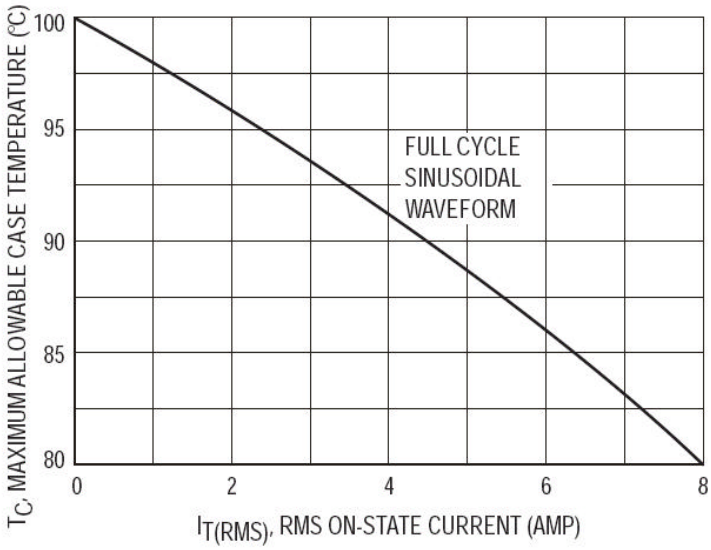


Figure 1. Current Derating

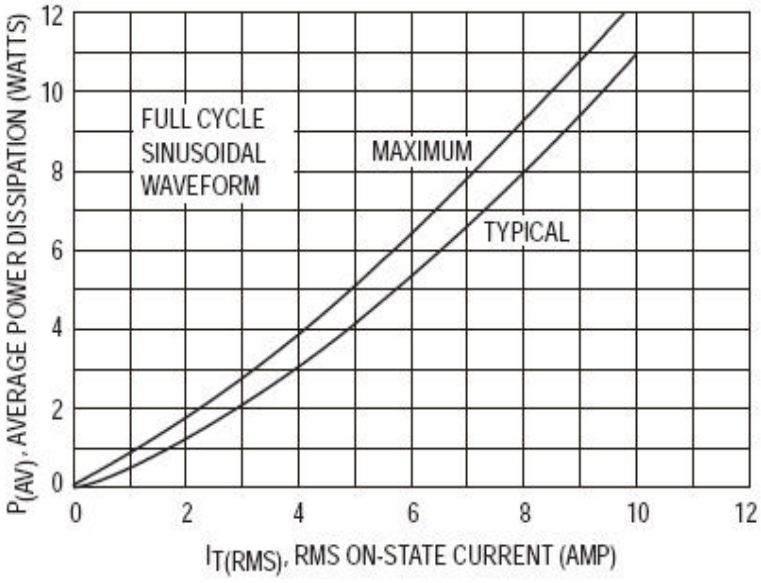


Figure 2. Power Dissipation