LITE-ON SEMICONDUCTOR

T16M50T600B

Triacs
Sillicon Bidirectional Thyristors

TRIACS
16 AMPERES RMS
600 VOLTS

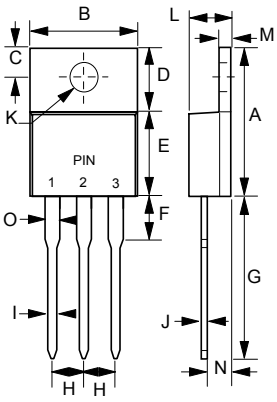
FEATURES

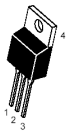
- Blocking Voltage to 600 Volts
- On-State Current Rating of 16 Amperes RMS at 80℃
- Uniform gate Trigger Currents in Three Quadrants
- High Immunity to dv/dt -- 500V/us minimum at 125℃
- Minimizes Snubber Networks for Protection
- Industry Standard TO-220AB Package
- High Commutating di/dt -- 9.0 A/ms minimum at 125℃

MECHANICAL DATA

- Case: Molded plastic
- Weight: 0.07 ounces, 2.0 grams

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	0.40	0.67
K	3.53⌀	4.09⌀
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92
O	1.17	1.37
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) (TJ= -40 to 125℃, Sine Wave, 50 to 60 Hz; Gate Open)	V_{DRM}, V_{RRM}	600	Volts
On-State RMS Current (TC = +80℃) Full Cycle Sine Wave 50 to 60 Hz	$I_{T(RMS)}$	16	Amps
Peak Non-Repetitive Surge Current (One Full Cycle Sine Wave, 60 Hz, TJ= +125℃)	I_{TSM}	150	Amps
Circuit Fusing Consideration (t = 8.3 ms)	I^2t	93	A^2s
Peak Gate Power (TC = +80℃, Tp≦ 1.0 us)	P_{GM}	20	Watts
Average Gate Power (TC = +80℃, t=8.3 ms)	$P_{G(AV)}$	0.5	Watts
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. 2,Mar-2010, KTXC29

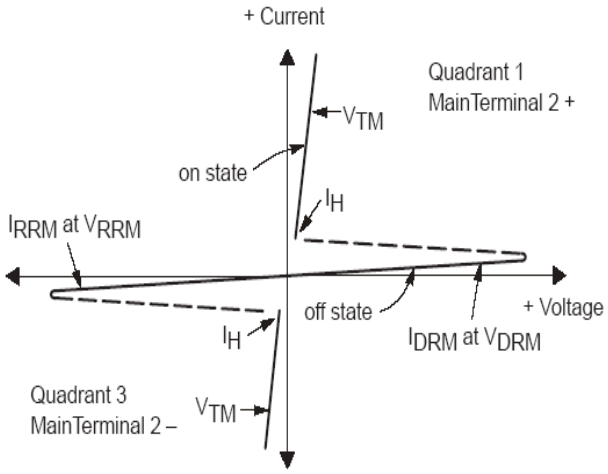
THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance - Junction to Case - Junction to Ambient	R_{thJC} R_{thJA}	2.0 62.5	℃/W
Maximum Lead Temperature for Soldering Purposes 1/8" from Case for 10 Seconds	T_L	260	℃

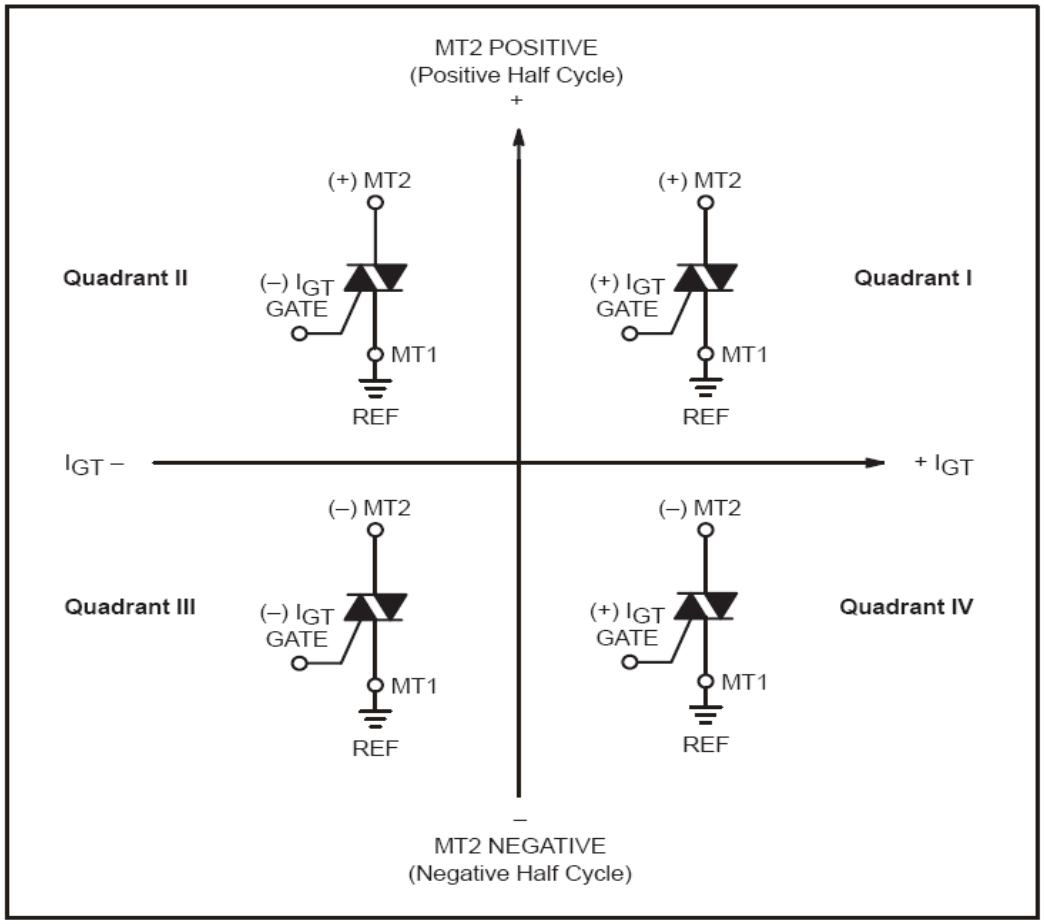
ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise noted, Electrical apply in both directions)

Characteristics		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Peak Reptitive Forward or Reverse Blocking Current (V_D=Rated V_{DRM}, V_{RRM}; Gate Open)	T_J=25℃ T_J=125℃	I_{DRM} I_{RRM}	---- ----	---- ----	10 2.0	uA mA
ON CHARACTERISTICS						
Peak On-State Voltage (I_{TM}=± 21 A Peak @Tp ≦ 2.0 ms, Duty Cycle ≦ 2%)		V_{TM}	----	1.2	1.6	Volts
Gate Trigger Current (V_D = 12Vdc; R_L = 100 Ohms)		I_{GT1} I_{GT2} I_{GT3}	10 10 10	---- ---- ----	50 50 50	mA
Gate Trigger Voltage (V_D = 12 Vdc; R_L =100 Ohms)		V_{GT1} V_{GT2} V_{GT3}	0.5 0.5 0.5	---- ---- ----	1.5 1.5 1.5	Volts
Holding Current (V_D = 12 V, Initiating Current = ± 150 mA, Gate Open)		I_H	----	----	50	mA
Latching Current (V_D = 24 V, I_G = 50 mA)		I_L	---- ---- ----	---- ---- ----	50 80 50	mA
DYNAMIC CHARACTERISTICS						
Critical Rate of Rise of Off-state Voltage (V_D = Rated VDRM, Exponential Waveform, gate Open, T_J = 125℃)		dv/dt	500	----	----	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

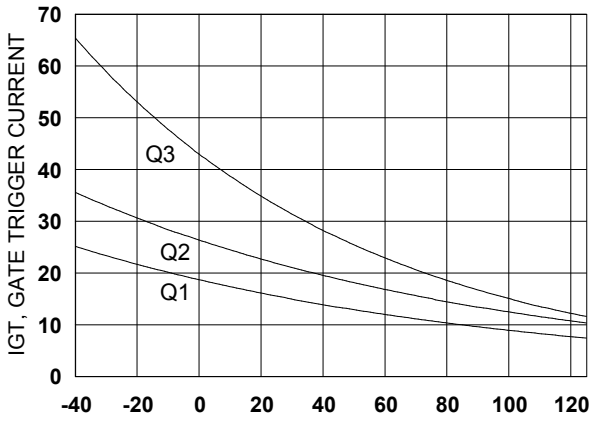


Figure 1. Typical IGT versus TJ

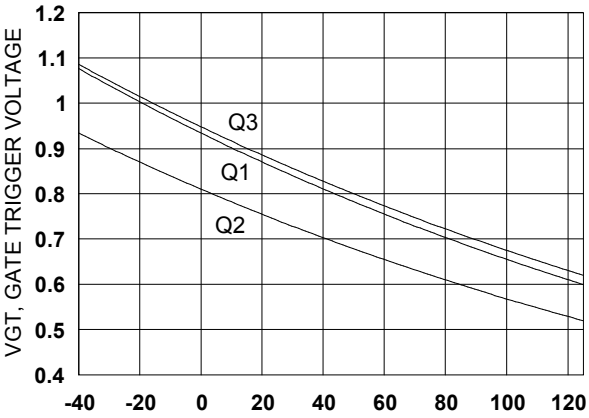


Figure 2. Typical VGT versus TJ

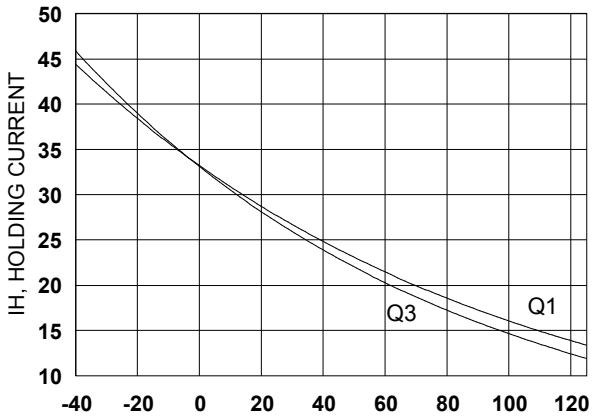


Figure 3. Typical IH versus TJ

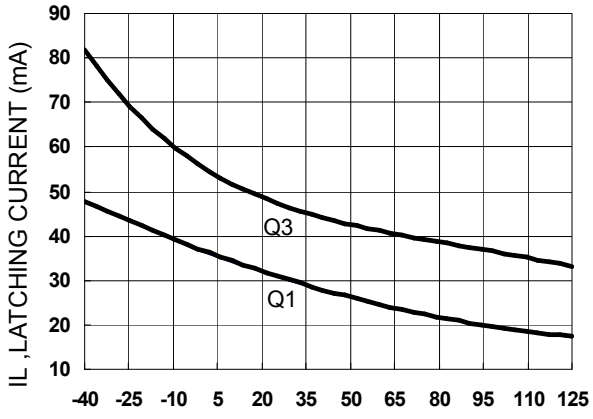


Figure 4. Typical IL versus TJ

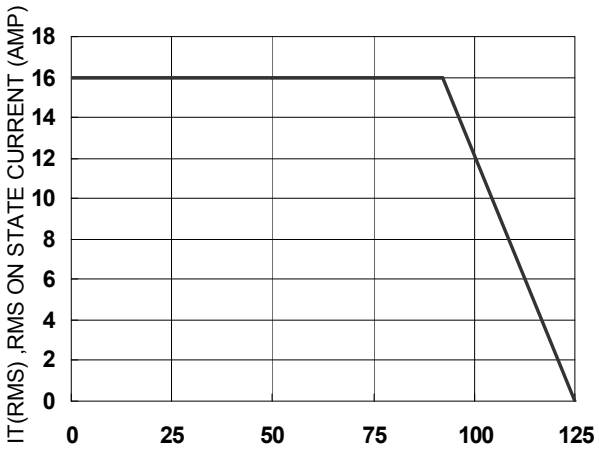


Figure 5.On-state Current Derating Curve

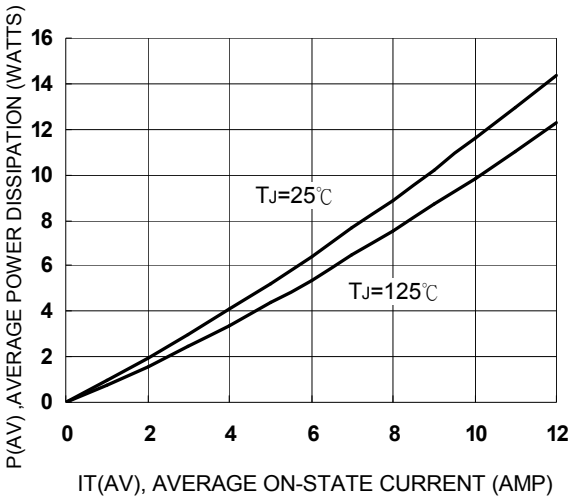


Figure 6. Power Dissipation versus IT

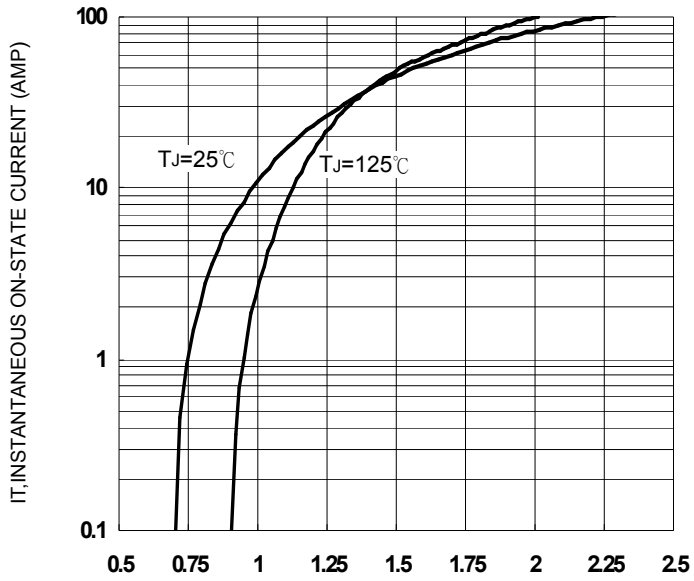


Figure 7. On-State Characteristics