| Sensitive Gate Triacs Sillicon Bidirectional Thyristors	TRIACS 8 AMPERES RMS 600 VOLTS

FEATURES

- Sensitive Gate Triggering in 3 Modes for AC Triggering on Sinking Current Sources
- Four Mode Triggering for Drive Circuits that Source Current
- All Diffused and Glass-Passivated Junctions for Parameter Uniformity and Stability
- Center Gate Geometry for Uniform Current Spreading

MECHANICAL DATA

- Case: Molded plastic
- RoHs Compliant (2002/95/EC)
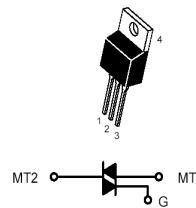- Weight: 0.07 ounces, 2.0 grams

TO-220AB
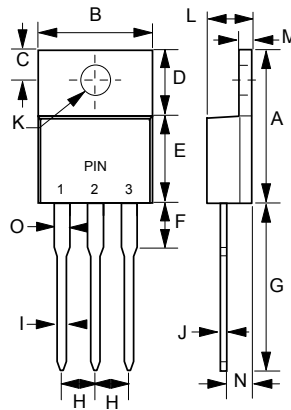
TO-220AB		
DIM.	MIN.	MAX.
A	14.22	15.88
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	8.26	9.28
F	-	6.35
G	12.70	14.73
H	2.29	2.79
I	0.51	1.14
J	0.40	0.67
K	3.53 ∅	4.09 ∅
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92
O	1.17	1.37
All Dimensions in millimeter		

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 110℃, 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	$I_{T(RMS)}$	8	Amp
Peak Non-Repetitive Surge Current (One Full Cycle Sine Wave, 60 Hz, TJ= 25℃)	I_{TSM}	80	Amps
Circuit Fusing Consideration (t = 8.3 ms)	I^2t	26.5	A^2s
Peak Gate Power (t ≤ 2.0 us, Tc = 80℃)	P_{GM}	20	Watt
Average Gate Power (t ≤ 8.3 ms, Tc = 80℃)	$P_{G(AV)}$	0.5	Watt
Peak Gate Current (t ≤ 2.0 us, Tc = 80℃)	I_{GM}	2.0	Amp
Peak Gate Voltage(t ≤ 2.0 us, Tc = 80℃)	V_{GM}	10	Volts
Operating Junction Temperature Range	T_J	-40 to +125	℃
Storage Temperature Range	T_{stg}	-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.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance - Junction to Case - Junction to Ambient	RthJC RthJA	2.2 62.5	℃/W
Maximum Lead Temperature for Soldering Purposes 1/8" from Case for 10 Seconds	TL	260	℃

ELECTRICAL CHARACTERISTICS (Tj=25℃ unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit

OFF CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Peak Reptitive Forward or Reverse Blocking Current T_J=25℃ (V_D=Rated V_{DRM} and V_{RRM}) T_J=125℃	I_{DRM} I_{RRM}	---- ----	---- ----	10 2.0	uA mA

ON CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Peak Forward On-State Voltage (I_{TM}=± 11A Peak @Tp ≦2.0 ms, Duty Cycle ≦ 2%)	V_{TM}	----	----	1.8	Volts
Gate Trigger Current (V_D = 12V, R_L = 100 Ohms)	I_{GT1} I_{GT2} I_{GT3} I_{GT4}	---- ---- ---- ----	---- ---- ---- ----	10.0 10.0 10.0 20.0	mA
Holding Current (V_D =12 V, R_L = 100 Ohms, Initiating Current =± 200 mA ,Gate Open)	I_H	----	----	15	mA
Gate Trigger Voltage (V_D = 12 V, R_L =100 Ohms)	V_{GT}	----	----	1.3	Volts
Latching Current (V_D = 12 V, R_L = 100 Ohms, I_G = 10mA)	IL	---- ---- ---- ----	---- ---- ---- ----	15 30 15 15	mA

DYNAMIC CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Critical Rate of Rise of Off-State Voltage (V_D = 0.67% Rated V_{DRM}, Exponential Waveform, TC=110℃)	dv/dt	----	50	----	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
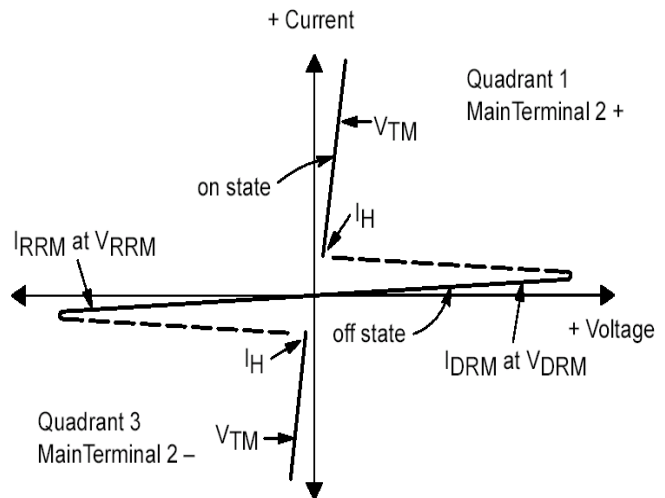
Quadrant Definitions
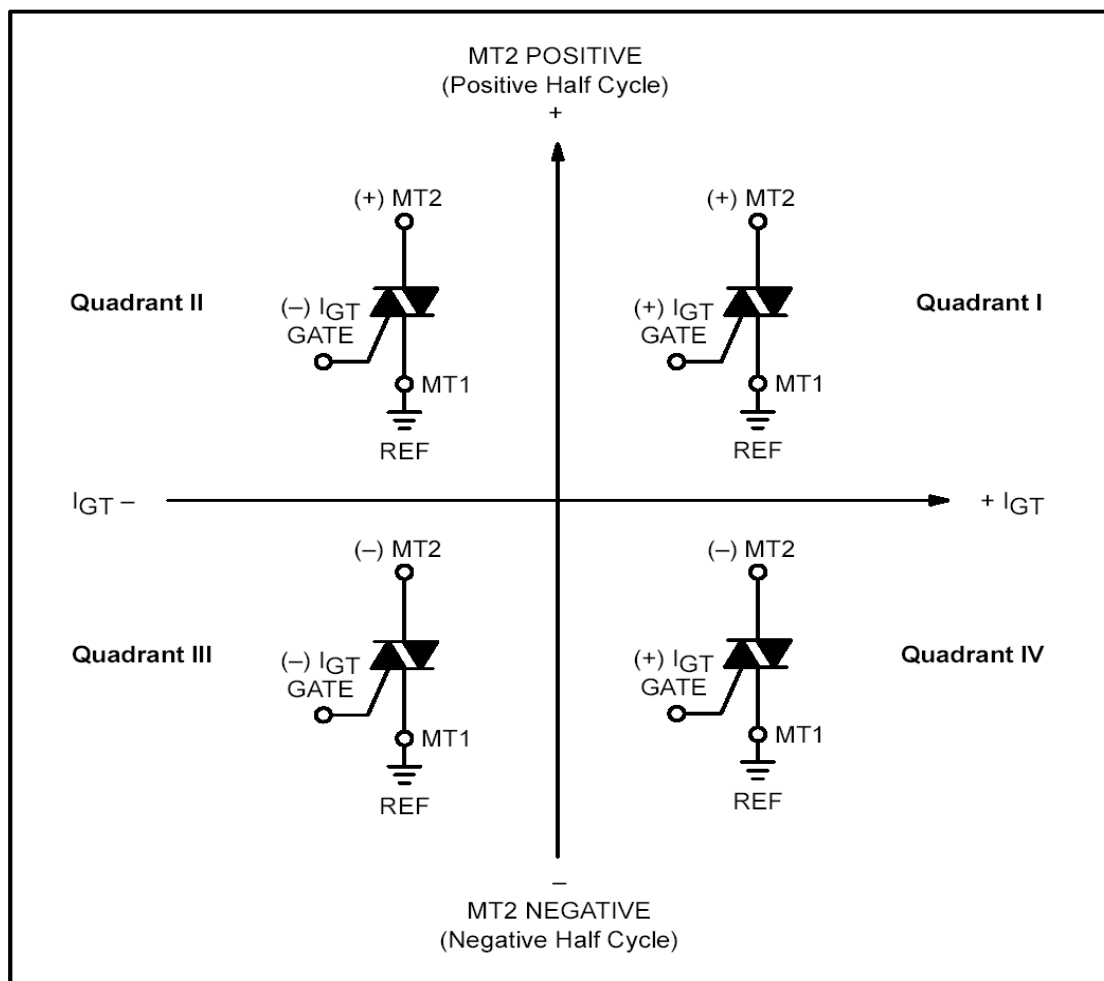
All polarities are referenced to MT1
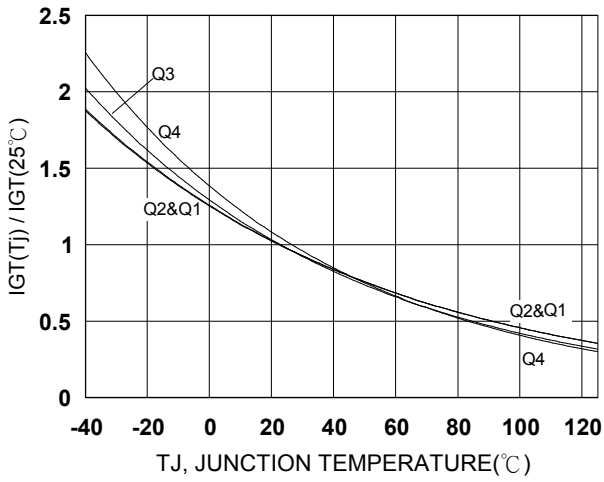Whith in -phase signal (using standard AC lines) quadrants I and III are used
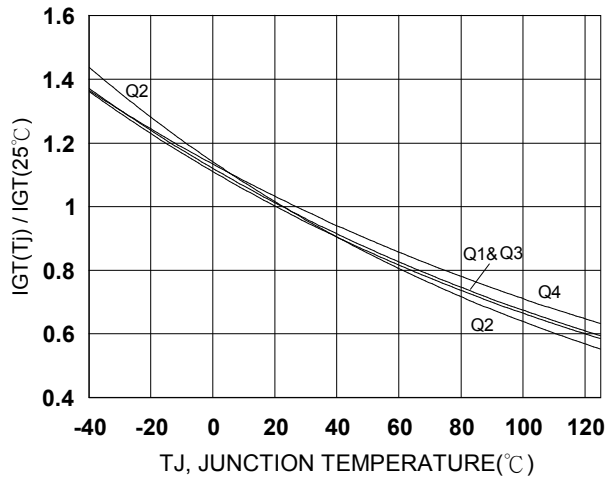
Figure 1. Typical IGT versus TJ

X-axis: TJ, JUNCTION TEMPERATURE(℃)
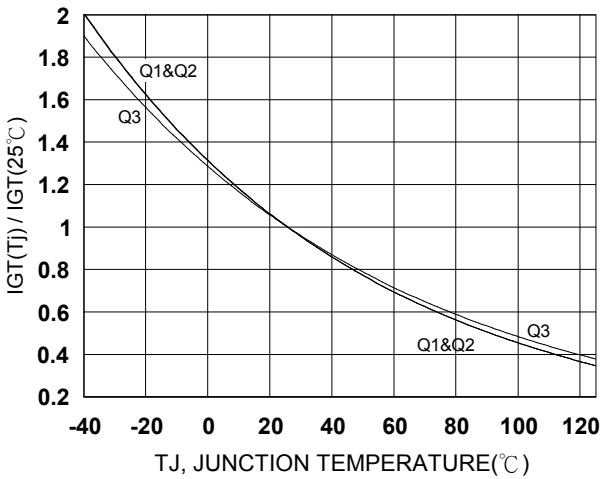Y-axis: IGT(Tj) / IGT(25℃)

Curves labeled: Q3, Q4, Q2&Q1, Q2&Q1, Q4

Figure 2. Typical VGT versus TJ

X-axis: TJ, JUNCTION TEMPERATURE(℃)
Y-axis: IGT(Tj) / IGT(25℃)

Curves labeled: Q2, Q1& Q3, Q4, Q2

Figure 3. Typical IH versus TJ

X-axis: TJ, JUNCTION TEMPERATURE(℃)
Y-axis: IGT(Tj) / IGT(25℃)

Curves labeled: Q1&Q2, Q3, Q1&Q2, Q3
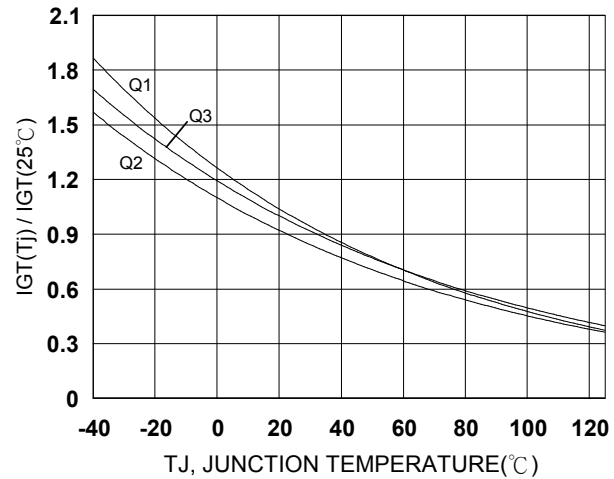
Figure 4. Typical IL versus TJ

X-axis: TJ, JUNCTION TEMPERATURE(℃)
Y-axis: IGT(Tj) / IGT(25℃)

Curves labeled: Q1, Q3, Q2
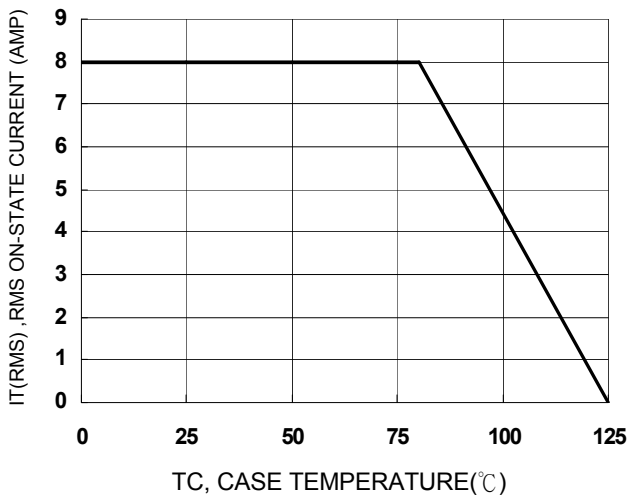
Figure 5. On-State Current Derating Curve

X-axis: TC, CASE TEMPERATURE(℃)
Y-axis: IT(RMS) , RMS ON-STATE CURRENT (AMP)
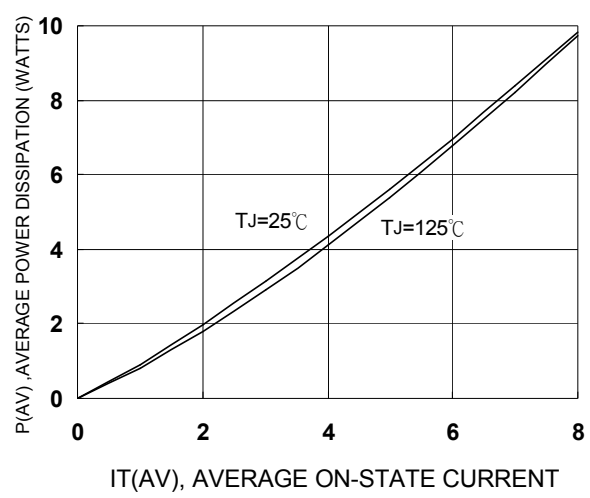
Figure 6. Power Dissipation versus IT

X-axis: IT(AV), AVERAGE ON-STATE CURRENT
Y-axis: P(AV) ,AVERAGE POWER DISSIPATION (WATTS)

Curves labeled: TJ=25℃, TJ=125℃
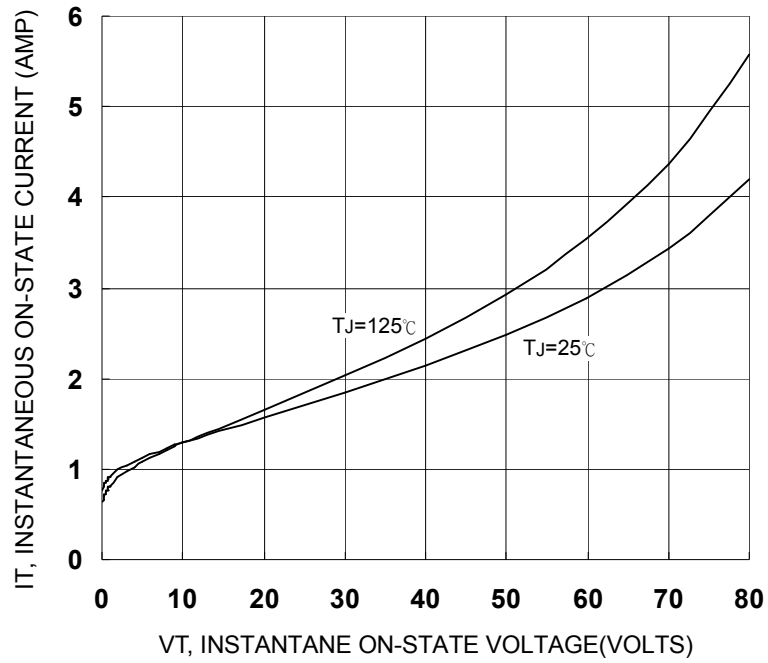
Figure 7. On-State Characteristics

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