

# T16M35T600B(LS)

## Triacs Silicon Bidirectional Thyristors

## TRIACS 16 AMPERES RMS 600 VOLTS

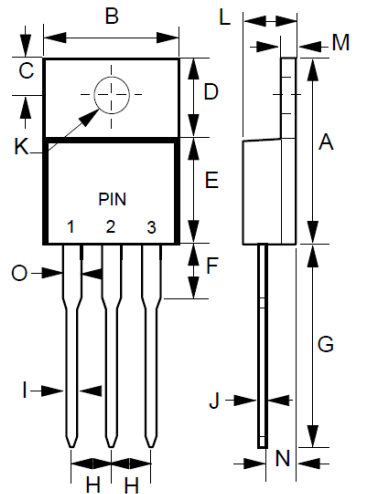
### FEATURES

- Blocking voltage to 600V
- Minimizes Snubber Networks for Protection
- On-State Current Rating of 16 Amperes RMS High surge Current Capability - 150 Amperes
- Glass Passivated Junctions for Reliability and Uniformity Operational in Three Quadrants, Q1, Q2, and Q3
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

### MECHANICAL DATA

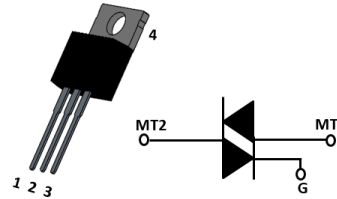
- Package: TO-220AB
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Finish – Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.07 ounces, 2.0 grams (Approximate)

### 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	3.53Ø	4.09Ø
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 AND ELECTRICAL CHARACTERISTICS

Ratings at +25°C ambient temperature unless otherwise specified.

### MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Peak repetitive off-state voltage ( $T_J = -40$ to $+125^\circ\text{C}$ , sine wave, 50 to 60Hz; gate open)	$V_{DRM}$ $V_{RRM}$	600 600	Volts
On-stage RMS current (full sine wave 50 to 60Hz, $T_C = +80^\circ\text{C}$ )	$I_{T(RMS)}$	16	Amp
Peak non-repetitive surge current (one full cycle 60Hz, $T_J = +25^\circ\text{C}$ )	$I_{TSM}$	150	Amps
Circuit fusing consideration ( $t = 8.3\text{ms}$ )	$I^2t$	93	$\text{A}^2\text{s}$
Operating junction temperature range	$T_J$	-40 to +125	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-40 to +150	$^\circ\text{C}$

### Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4.  $V_{DRM}$  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.

**OFF CHARACTERISTICS**

PARAMETER		SYMBOL	MAX	UNIT
Peak repetitive forward or reverse blocking current ( $V_{AK} = \text{rated } V_{DRM}$ and $V_{RRM}$ , gate open)	$T_J = +25^\circ\text{C}$	$I_{DRM}$	0.01	mA
	$T_J = +125^\circ\text{C}$	$I_{RRM}$	2.0	

**ON CHARACTERISTICS**

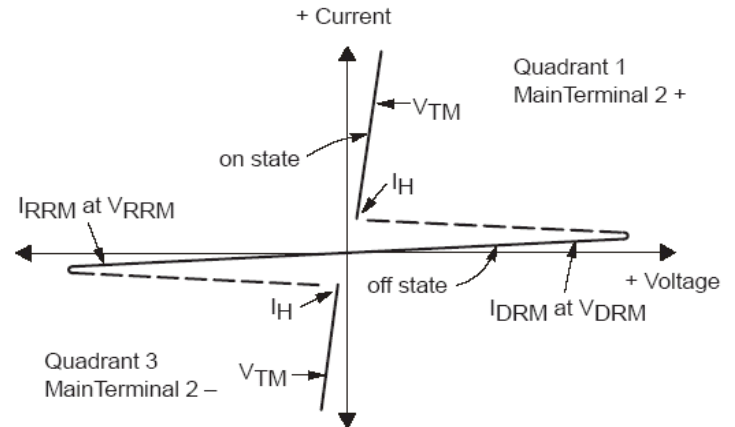
PARAMETER	SYMBOL	MAX	UNIT
Peak forward on-state voltage ( $I_{TM} = \pm 16\text{A}$ @ $t_P \leq 2.0\text{ms}$ , duty cycle $\leq 2\%$ )	$V_{TM}$	1.6	Volts
Gate trigger current ( $V_D = 12\text{V}$ , $R_L = 100\Omega$ )	$I_{GT1}$ $I_{GT2}$ $I_{GT3}$	35 35 35	mA
Gate trigger voltage ( $V_D = 12\text{V}$ , $R_L = 100\Omega$ )	$V_{GT1}$ $V_{GT2}$ $V_{GT3}$	1.5 1.5 1.5	Volts
Holding current ( $V_D = 12\text{V}$ , initiation current = $\pm 150\text{mA}$ , gate open)	$I_H$	50	mA
Latching current ( $V_D = 12\text{V}$ , $I_G = 35\text{mA}$ )	$I_{L1}$ $I_{L2}$ $I_{L3}$	50 80 50	mA

**DYNAMIC CHARACTERISTICS**

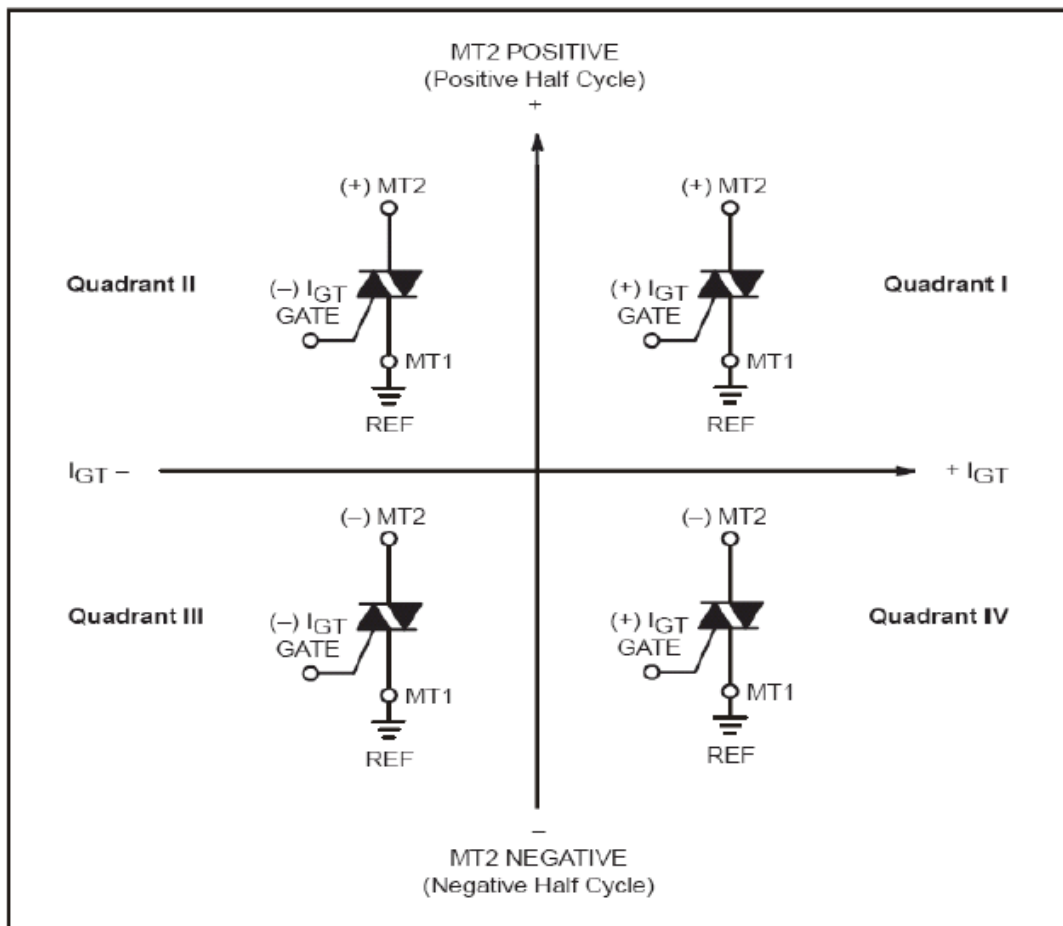
PARAMETER	SYMBOL	MIN	UNIT
Critical rate of rise of Commutation voltage $V_D = 67\%$ rated $V_{DRM}$ , exponential waveform, $T_C = +125^\circ\text{C}$	$dv/dt$	600	$\text{V}/\mu\text{s}$

**RATING AND CHARACTERISTIC CURVES**  
**T16M35T600B(LS)**

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



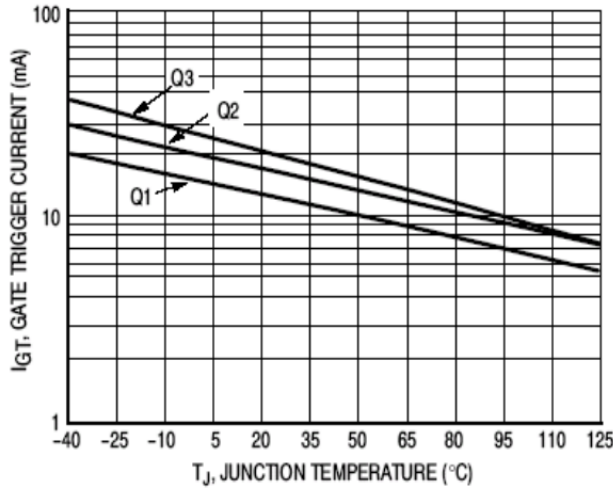
**Quadrant Definitions**



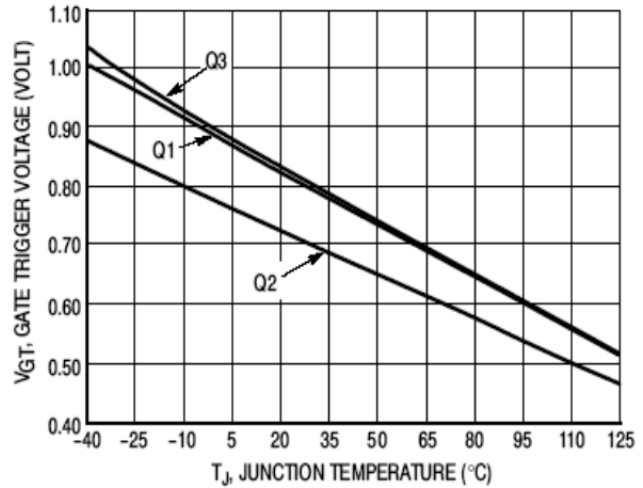
All polarities are referenced to MT1

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

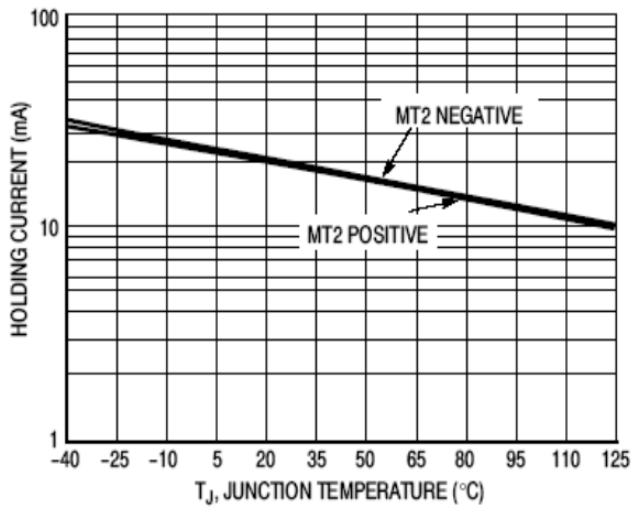
**RATING AND CHARACTERISTIC CURVES**  
**T16M35T600B(LS)**



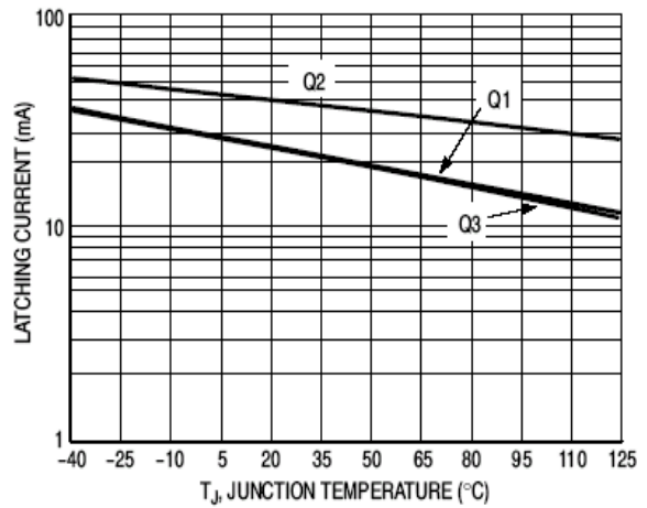
**Figure 1. Typical Gate Trigger Current versus Junction Temperature**



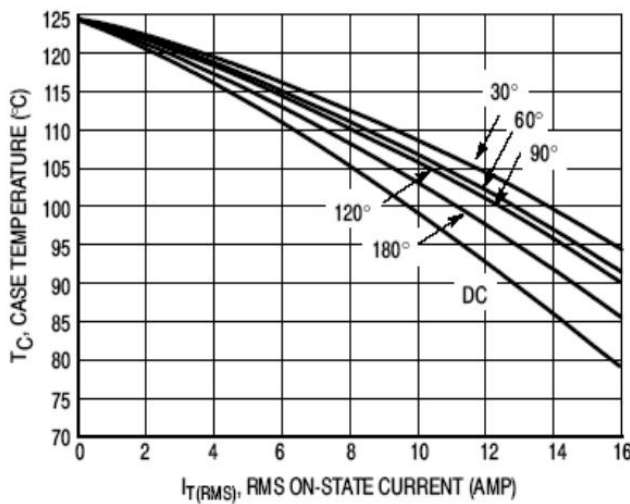
**Figure 2. Typical Gate Trigger Voltage versus Junction Temperature**



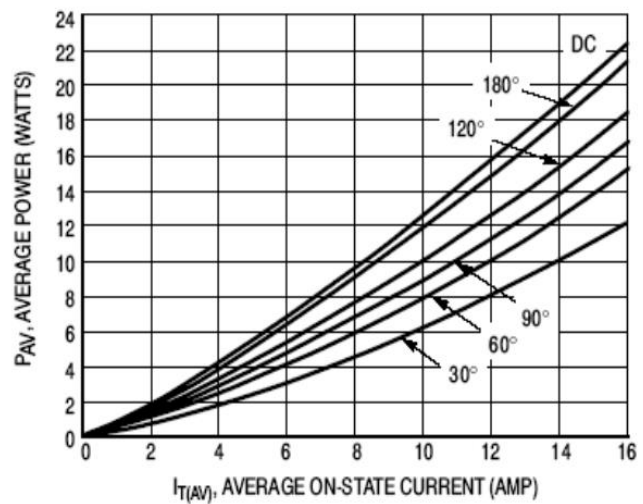
**Figure 3. Typical Holding Current versus Junction Temperature**



**Figure 4. Typical Latching Current versus Junction Temperature**

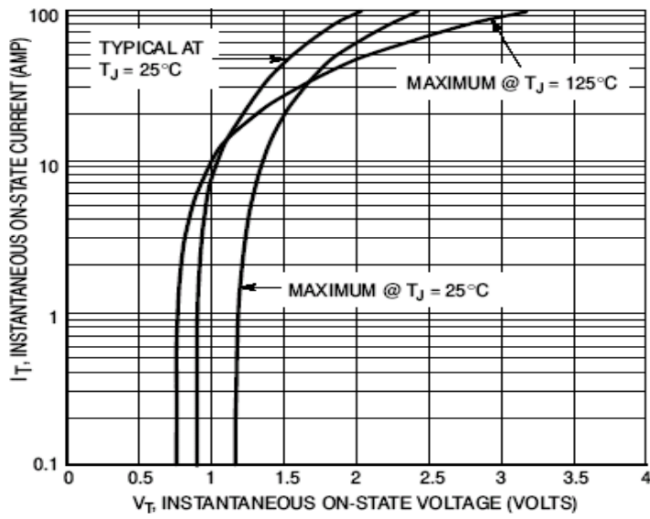


**Figure 5. Typical RMS Current Derating**

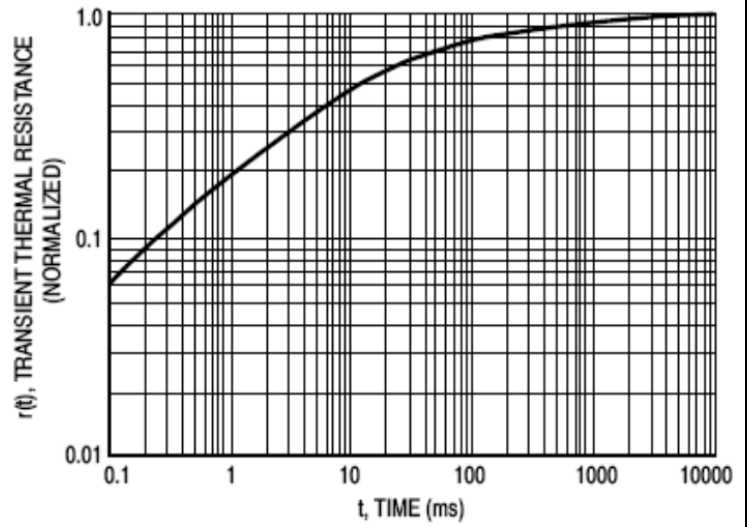


**Figure 6. On-State Power Dissipation**

**RATING AND CHARACTERISTIC CURVES  
T16M35T600B(LS)**



**Figure 7. On-State Characteristics**

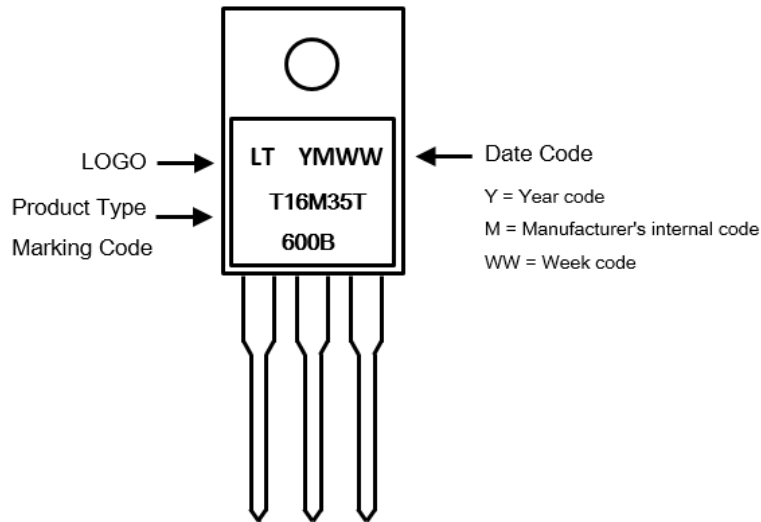


**Figure 8. Typical Thermal Response**

### Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
T16M35T600B	TO-220AB	50pcs	Tube

### Marking Information:



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