T4M10T600B(LS)

TRIACS
SILICON BIDIRECTIONAL THYRISTORS

TRIACS
4 AMPERES RMS
600 VOLTS

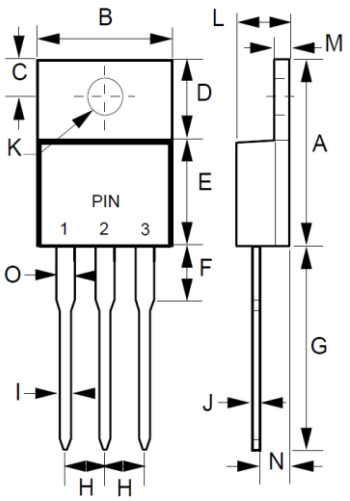
FEATURES

- Sensitive Gate Allows Triggering by Microcontrollers and Other Logic Circuits
- High Immunity to dv/dt - 50V/µs Minimum at +125°C
- Minimum and Maximum Values of I_{GT}, V_{GT} and I_H Specified for Ease of Design on
- On-State Current Rating of 4 Amperes RMS at +100°C
- High Surge Current of 40 Amperes
- Rugged, Economical TO-220AB Package
- Operational in Three Quadrants: Q1, Q2, and Q3
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

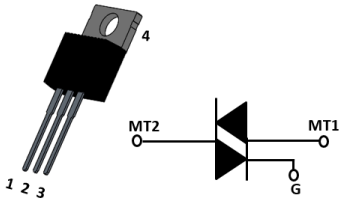
MECHANICAL DATA

- Package: TO-220AB
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Finish – Matte 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°C, sine wave, 50 to 60Hz; gate open)	V_{DRM} V_{RRM}	600 600	V
On-stage RMS current (full sine wave 50 to 60Hz, T_C = +100°C)	$I_{T(RMS)}$	4.0	A
Peak non-repetitive surge current (one full cycle 60Hz, T_J = +25°C)	I_{TSM}	40	A
Circuit fusing consideration (t = 8.3ms)	I^2t	6.6	A^2s
Operating junction temperature range	T_J	-40 to +125	°C
Storage temperature range	T_{STG}	-40 to +150	°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.

OFF CHARACTERISTICS

PARAMETER		SYMBOL	MAX	UNIT
Peak repetitive forward or reverse blocking current (V_{AK} = rated V_{DRM} and V_{RRM}, gate open)	T_J = +25°C T_J = +125°C	I_{DRM} I_{RRM}	10 2	µA mA

ON CHARACTERISTICS

PARAMETER	SYMBOL	MAX	UNIT
Peak forward on-state voltage (I_{TM} = ±6A @ t_P ≤ 2.0ms, duty cycle ≤ 2%)	V_{TM}	1.6	V
Gate trigger current (V_D = 12V, R_L = 100Ω)	I_{GT1} I_{GT2} I_{GT3}	10 10 10	mA
Gate trigger voltage (V_D = 12V, R_L = 100Ω)	V_{GT1} V_{GT2} V_{GT3}	1.3 1.3 1.3	V
Holding current (V_D = 12V, initiation current = ±200mA, gate open)	I_H	15	mA
Latching current (V_D = 12V, I_G = 10mA)	I_{L1} I_{L2} I_{L3}	30 30 30	mA

DYNAMIC CHARACTERISTICS

PARAMETER	SYMBOL	MIN	UNIT
Critical rate of rise of off-state voltage V_{AK} = 67% rated V_{DRM}, exponential waveform, gate open T_J = +125°C	dv/dt	50	V/µs

RATING AND CHARACTERISTIC CURVES
T4M10T600B(LS)

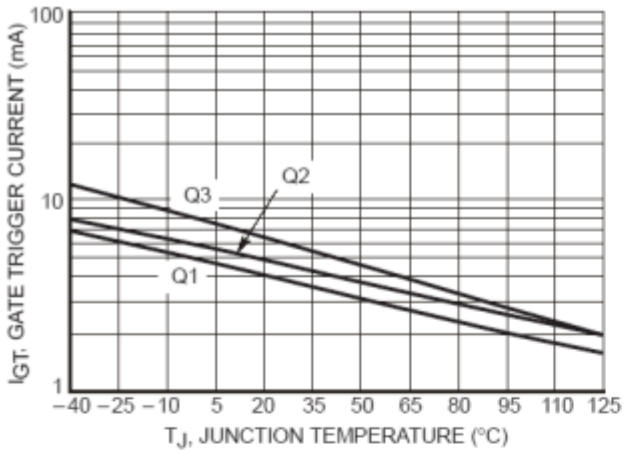


Figure 1. Typical Gate Trigger Current versus Junction Temperature

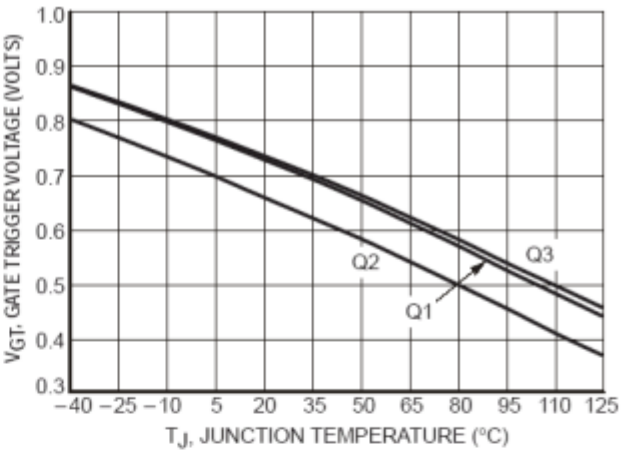


Figure 2. Typical Gate Trigger Voltage versus Junction Temperature

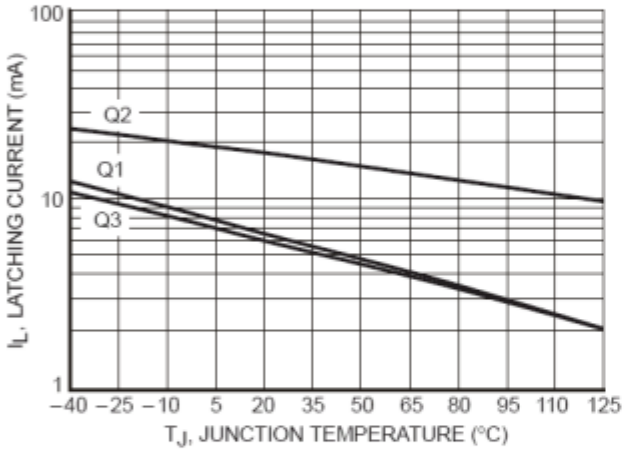


Figure 3. Typical Latching Current versus Junction Temperature

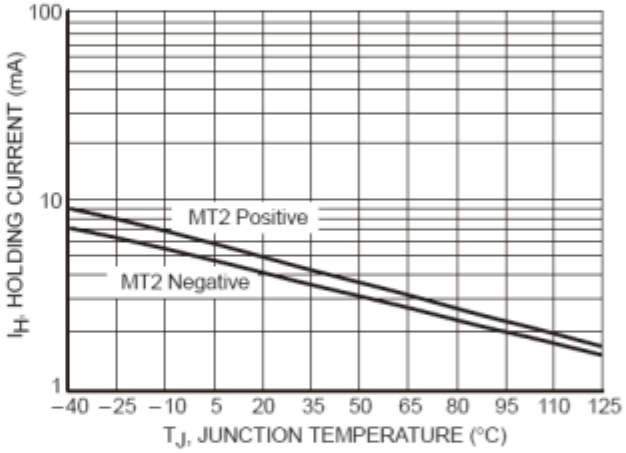


Figure 4. Typical Holding Current versus Junction Temperature

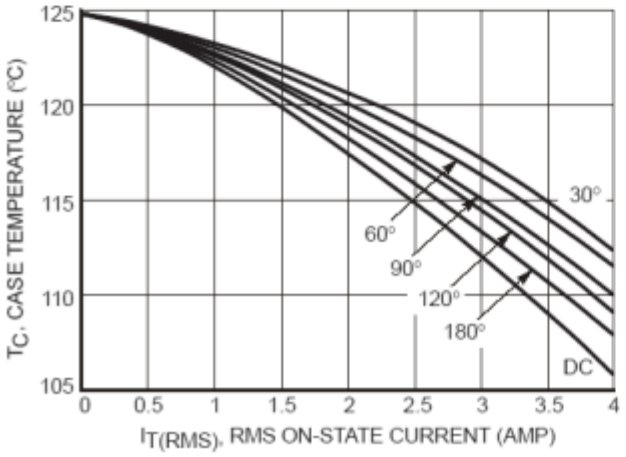


Figure 5. Typical RMS Current Derating

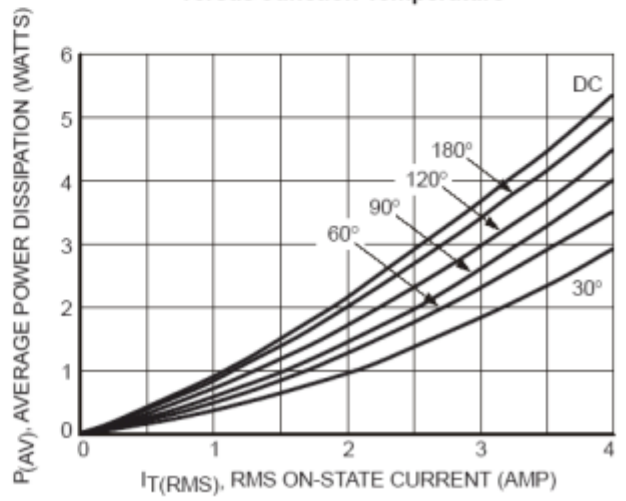


Figure 6. On-State Power Dissipation

RATING AND CHARACTERISTIC CURVES
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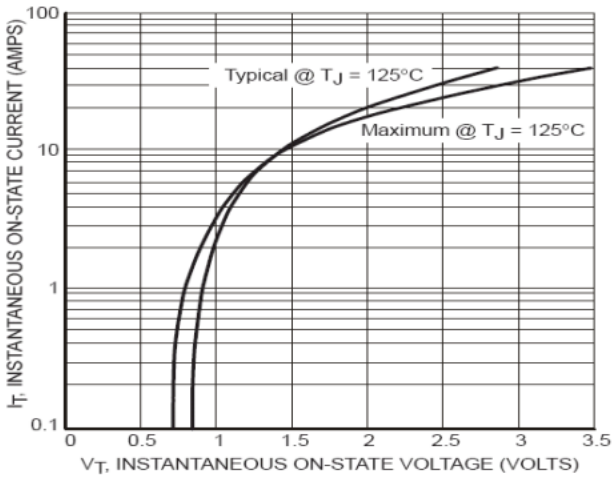


Figure 7. Typical On-State Characteristics

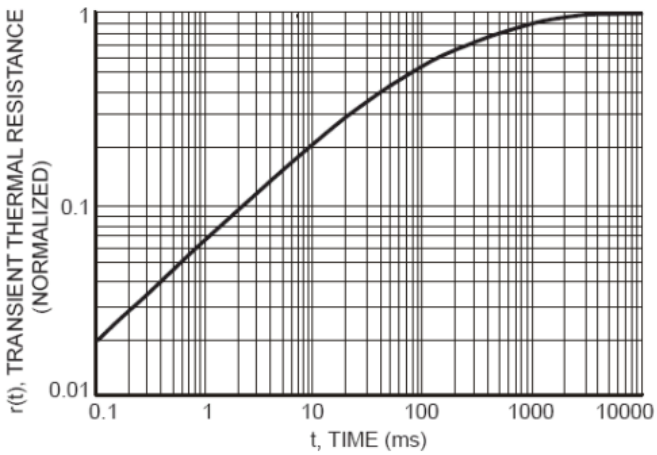
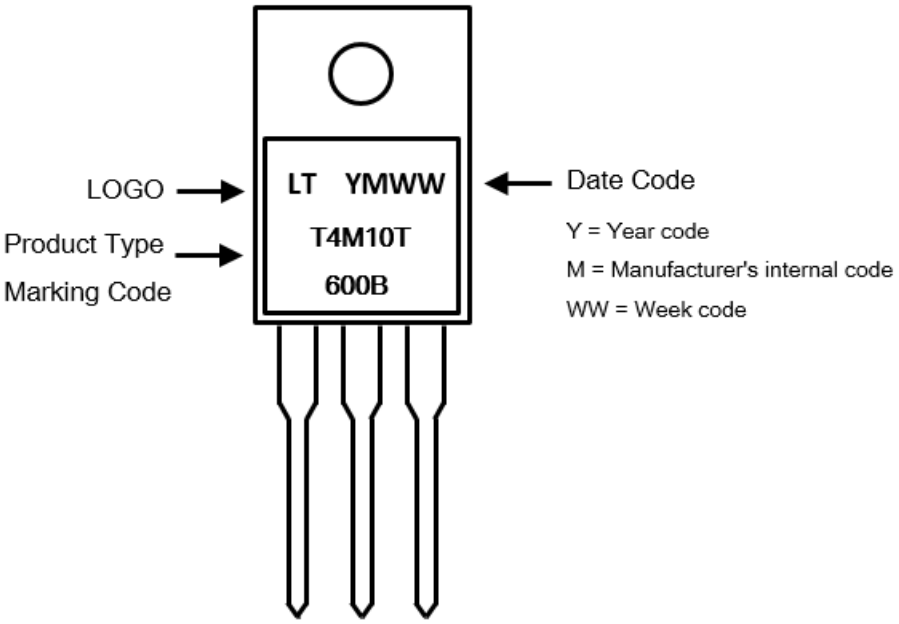


Figure 8. Typical Thermal Response

Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
T4M10T600B	TO-220AB	50pcs	Tube

Marking Information:



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