

T8M30T800HC(LS)

TRIACS
SILICON BIDIRECTIONAL THYRISTORS

TRIACS
8 AMPERES RMS
800 VOLTS

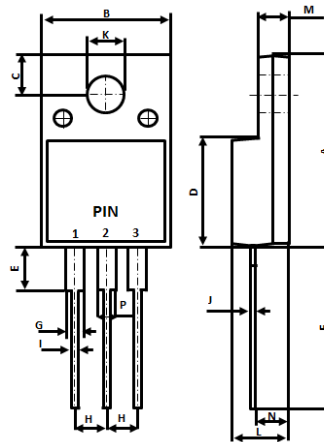
FEATURES

- Passivated die for reliability and uniformity
- Three-quadrant triggering
- Blocking voltage to 800V
- Low level triggering and holding characteristics
- Pb-free package
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

MECHANICAL DATA

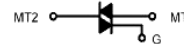
- Package: ITO-220AB
- Package Material: Plastic Material, UL Flammability Classification 94V-0
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Weight: 0.07 ounces, 2.0 grams (Approximate)

ITO-220AB



ITO-220AB		
DIM	MIN	MAX
A	14.95	15.95
B	10.00	10.40
C	2.76	3.36
D	8.50	8.80
E	3.30	3.90
F	13.00	13.70
G	1.15	1.70
H	2.40	2.70
I	0.50	0.80
J	0.45	0.70
K	3.00Ø	3.30Ø
L	4.46	4.87
M	2.48	2.80
N	2.50	2.80
P	1.50	1.90

All Dimensions in millimeter.



PIN ASSIGNMENT	
1	Main Terminal 1
2	Main Terminal 2
3	Gate

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Peak repetitive off-state voltage ($T_J = -40$ to 150°C , sine wave, 50 to 60 Hz; gate open)	V_{DRM}	700	V
Peak repetitive off-state voltage ($T_J = -40$ to 125°C , sine wave, 50 to 60 Hz; gate open) (Note 4)	V_{RRM}	800	V
On-stage RMS current (Full cycles sine wave, 60 Hz, $T_C = 95^\circ\text{C}$)	$I_{T(RMS)}$	8	A
Peak non-repetitive surge current (one full cycle 60 Hz, $T_J = 25^\circ\text{C}$)	I_{TSM}	80	A
Circuit fusing consideration ($t = 8.3\text{ms}$)	I^2T	26	A^2S
Peak gate power	P_{GM}	5	W
Operating junction temperature range	T_J	-40 to +150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-40 to +150	$^\circ\text{C}$
Dielectric strength from terminals to case, AC with $t=1$ minute, $\text{RH}<30\%$	V_{dis}	2500	V

- 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.

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Thermal resistance	RthJ _C RthJ _A	17 36	°C/W
Maximum lead temperature for soldering purposes (1/8" form case for 10 seconds)	TL	260	°C

OFF CHARACTERISTICS

PARAMETER	SYMBOL	MAX	UNIT
Peak repetitive forward or reverse blocking current @ T _J = 25°C (V _{AK} = rated V _{DRM} and V _{RRM} , gate open) @ T _J = 125°C	I _{DRM} I _{RRM}	5 0.5	uA mA

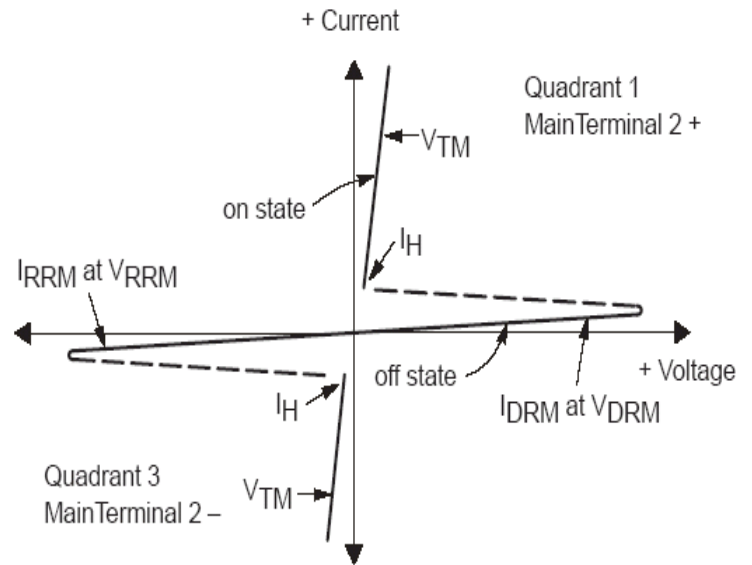
ON CHARACTERISTICS

PARAMETER	SYMBOL	MAX	UNIT
Peak forward on-state voltage (I _{TM} = ± 8A peak @ T _P ≤ 2.0 ms, duty cycle ≤ 2%)	V _{TM}	1.5	V
Gate trigger current (V _{AK} = 12V, RL=100Ω)	I _{GT1} I _{GT2} I _{GT3}	30	mA
Gate trigger voltage (V _{AK} = 12V, RL=100Ω)	V _{GT1} V _{GT2} V _{GT3}	1	V
Holding current (V _{AK} = 12V, RL=100Ω)	I _{H1} I _{H 3}	35 50	mA
Latching current (V _{AK} = 12V, RL=100Ω)	I _{L1} I _{L2} I _{L3}	35 45 35	mA

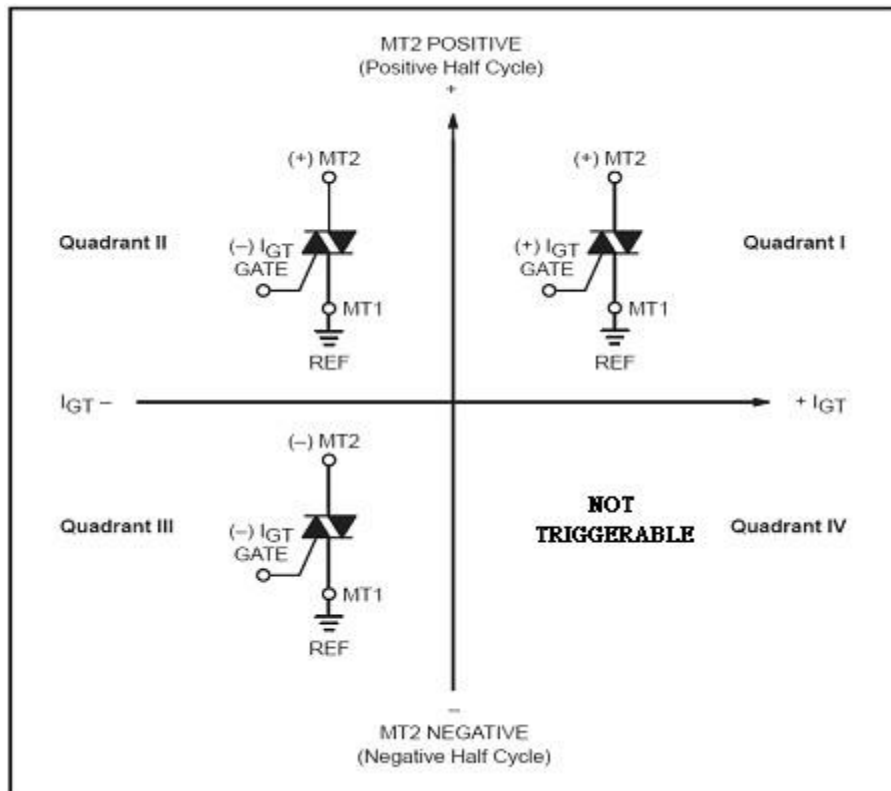
DYNAMIC CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	UNIT
Critical rate of rise of off-stage voltage (V _{AK} = 67% rated V _{DRM} , exponential waveform @ T _J = 125°C, gate open)	dv/dt	1000	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
With in-phase signal (using standard AC lines) quadrants I and III are used

RATING AND CHARACTERISTIC CURVES
T8M30T800HC

Fig.1- Holding Current Variation

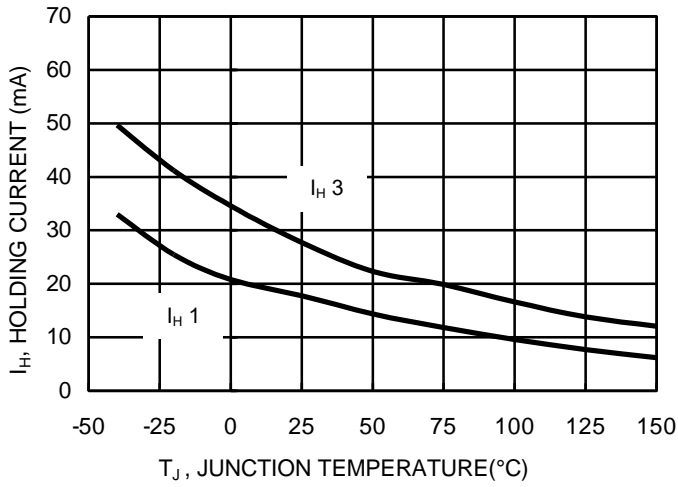


Fig.2- Gate Trigger Current Variation

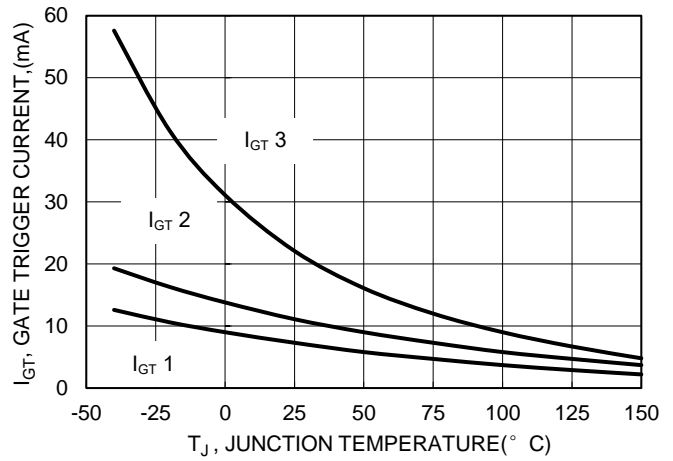


Fig.3- Gate Trigger Voltage Variation

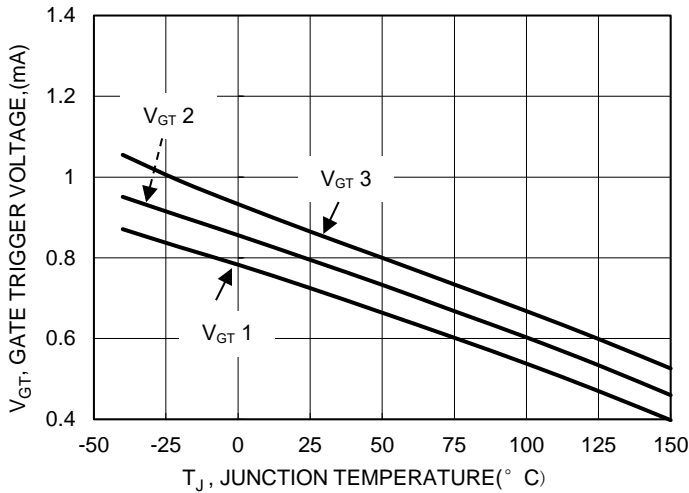


Fig.4- Typical Latching Current Versus Junction Temperature

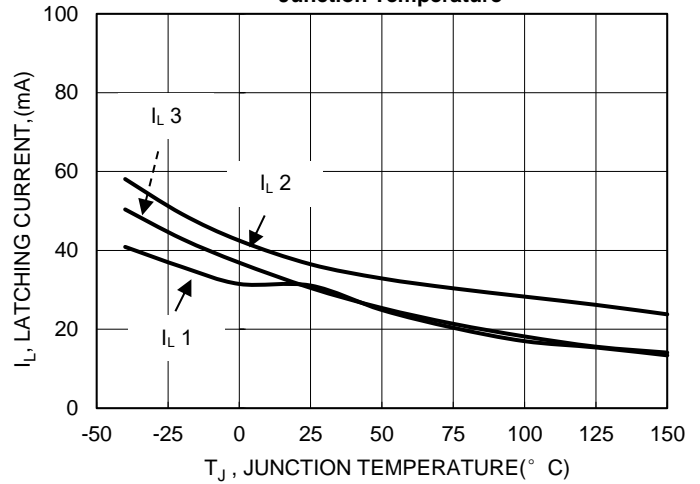
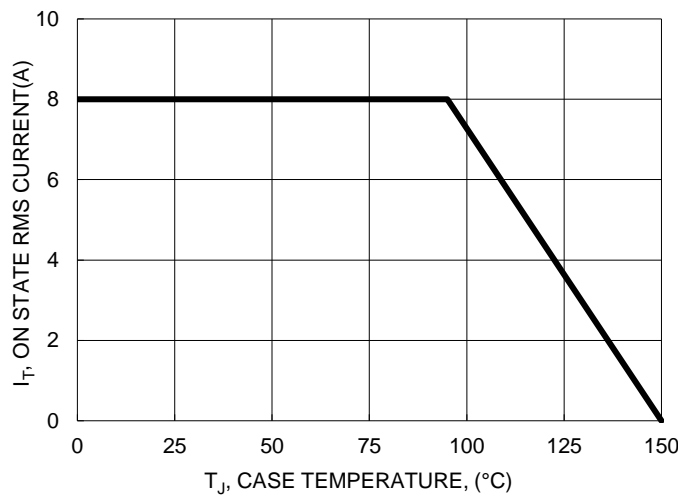


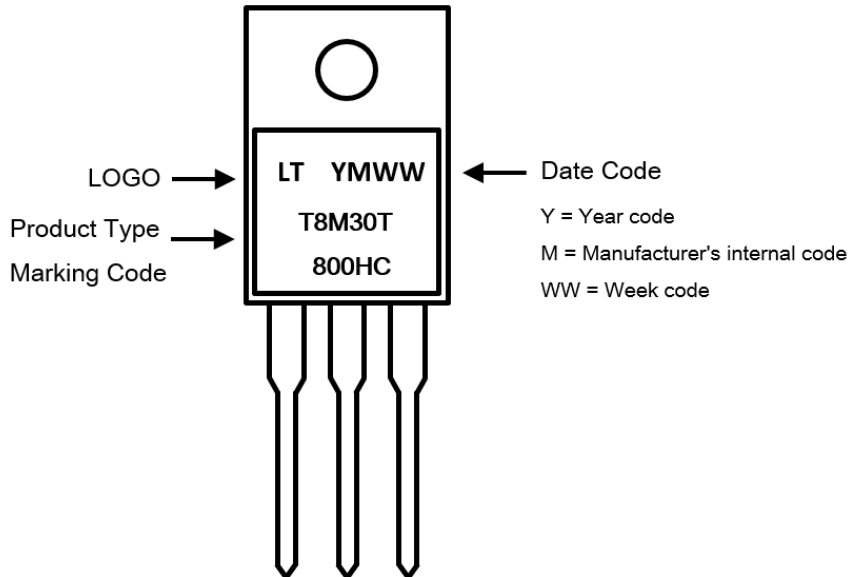
Fig.5- On-state Current Derating Curve



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
T8M30T800HC	ITO-220AB	50	Tube

Marking Information:



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