LITE-ON SEMICONDUCTOR

T1M10T800A

TRIACS
SILICON BIDIRECTIONAL THYRISTORS

TRIACS
1 AMPERES RMS
800 VOLTS

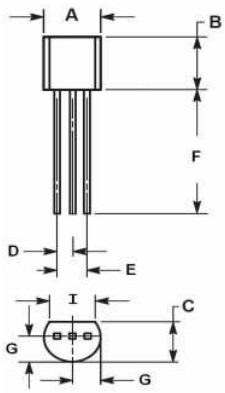
FEATURES

- Passivated die for reliability and uniformity
- Three-quadrant triggering Triac
- Over 800V V_{DRM}/V_{RRM}
- Low level triggering and holding characteristics
- Logic control compatible
- False turn-on voltage up 600V by dv/dt
- Qualified to AEC-Q101 Rev_C

APPLICATIONS

- General purpose motor control
- Small loads in washing machines
- Solenoid drivers
- Digital control drivers

TO-92



TO-92		
DIM.	MIN.	MAX.
A	4.45	4.70
B	4.32	5.33
C	3.18	4.19
D	1.15	1.39
E	2.42	2.66
F	12.7	------
G	2.04	2.66
I	3.43	-----
All Dimensions in millimeter		

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

ELECTRICAL CHARACTERISTICS (Tj = 25°C, unless otherwise specified.)

Absolute Ratings

PARAMETER	SYMBOL	VALUE	UNIT
Peak repetitive off-state voltage (Tj = -40 to 125°C, Full sine wave, 50 to 60 Hz; Gate open) (Note 1)	V_{DRM} V_{RRM}	800	V
On-stage RMS current (Full sine wave, T_C = 110°C)	$I_{T(RMS)}$	1	A
Peak non-repetitive surge current (one full cycle 60 H_Z, Tj = 25°C)	I_{TSM}	13.7	A
Circuit fusing consideration (t = 8.3ms)	I^2T	0.4	A^2S
Peak gate current	I_{GM}	2	A
Peak gate power	P_{GM}	5	W
Average gate power	$P_{G(AV)}$	0.1	W
Operating junction temperature range	Tj	-40 to +125	°C
Storage temperature range	T_{STG}	-40 to +150	°C

Note :

(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. 0, JUL-2016, KTXD27

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CHARACTERISTIC & CURVES (Tj = 25°C, unless otherwise specified.)

Thermal Characteristics

PARAMETER	SYMBOL	VALUE	UNIT
Thermal resistance from junction	Rth(j-c)	60	°C/W
	Rth(j-a)	150	
Maximum lead temperature for soldering purposes (1/8" form case for 10 seconds)	T_L	260	°C

Static Characteristics

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT
Threshold Voltage(1) @ Tj = 125°C		V_{to}	--	--	0.9	V
Dynamic resistors(1) @ Tj = 125°C		R_d	--	--	390	mΩ
Peak repetitive forward or reverse blocking current (V_{AK} = rated V_{DRM} and V_{RRM}, gate open)	Tj = 25°C	I_{DRM} I_{RRM}	--	--	5	uA
	Tj = 125°C		--	--	0.5	mA

1. For both polarities of A2 referenced to A1.

ON Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Peak forward on-state voltage (I_{TM} = 1 A @ Tj = 25°C)	V_{TM}	--	1.2	1.5	V
V_D= V_{DRM} , R_L=100Ω, Tj=125°C	V_{GD}	0.3	--	--	V
Gate trigger current (V_{AK} = 12V, R_L=100Ω)	I_{GT1} I_{GT2} I_{GT3}	--	--	10	mA
Gate trigger voltage (V_{AK} = 12V, R_L=100Ω)	V_{GT1} V_{GT2} V_{GT3}	--	--	1	V
Holding current (VAK = 12V, R_L=100Ω)	I_{H1} I_{H3}	--	--	12	mA
Latching current (V_{AK} = 12V, R_L=100Ω)	I_{L1}	--	--	12	mA
	I_{L2}	--	--	25	
	I_{L3}	--	--	12	

Dynamic Characteristics

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT
Critical rate of rise of off-stage voltage (V_{AK} = 67% rated V_{DRM} , @ Tj = 125°C, gate open)		dv/dt	600	--	--	V/us
Rate of rise of on-state current (V_{DRM}=maximum V_{DRM} ,Tj = 125°C)		di/dt	--	--	100	A/us
Rate of change of commutating current	VD=400V, dv/dt(c)=10V/us,Tj=125°C	di/dt(c)	4	--	--	A/ms
	Without snubber, VD=400V,Tj=125°C		3	--	--	

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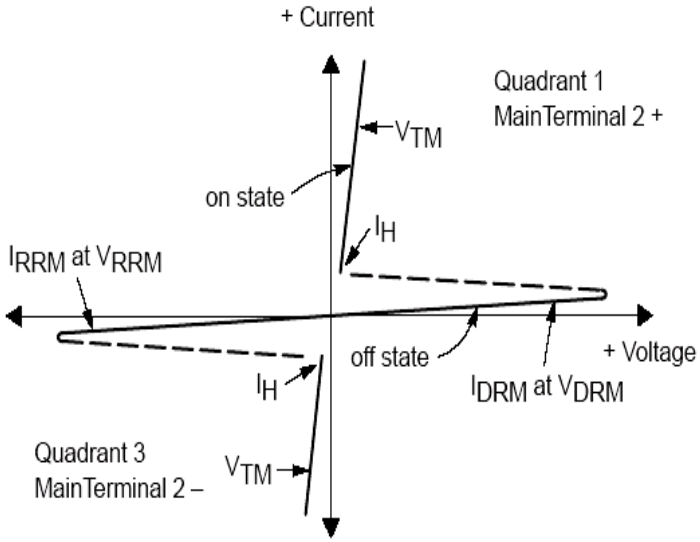
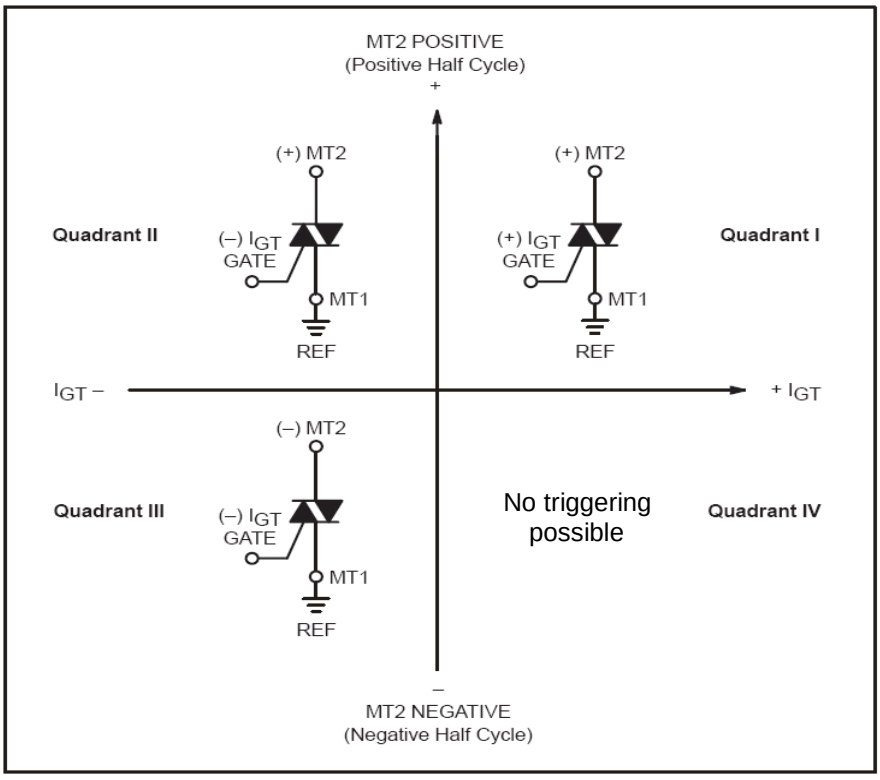
CHARACTERISTIC & CURVES (Tj = 25°C, unless otherwise specified.)

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





All polarities are referenced to MT1
With in -phase signal (using standard AC lines) quadrants I and III are used

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CHARACTERISTIC & CURVES (Tj = 25°C, unless otherwise specified.)

Fig.1- Holding Current Variation

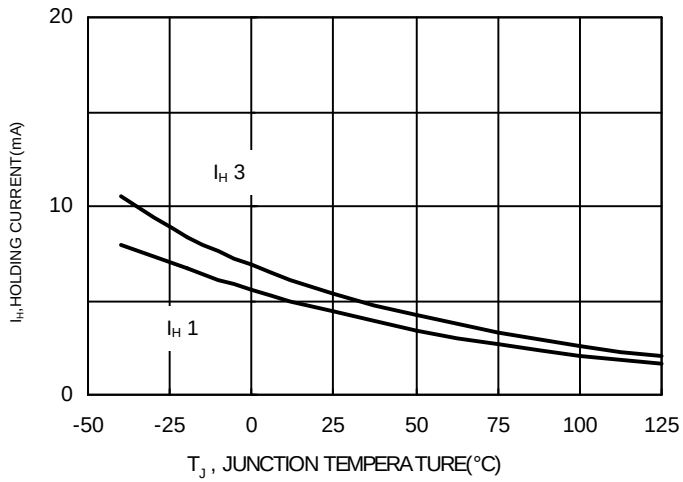


Fig.2- Gate Trigger Current Variation

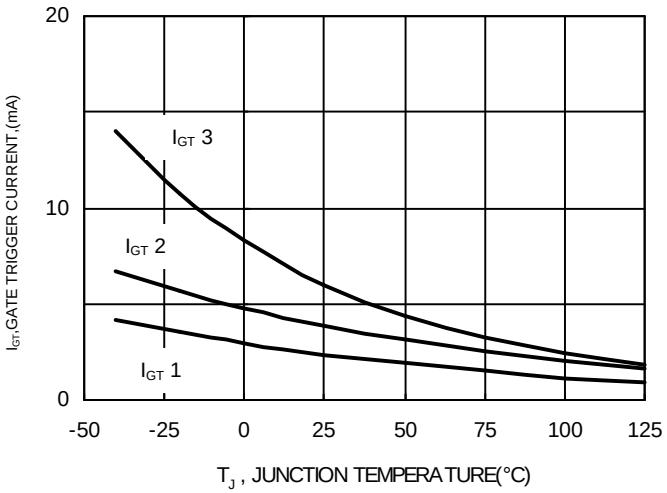


Fig.3- Gate Trigger Voltage Variation

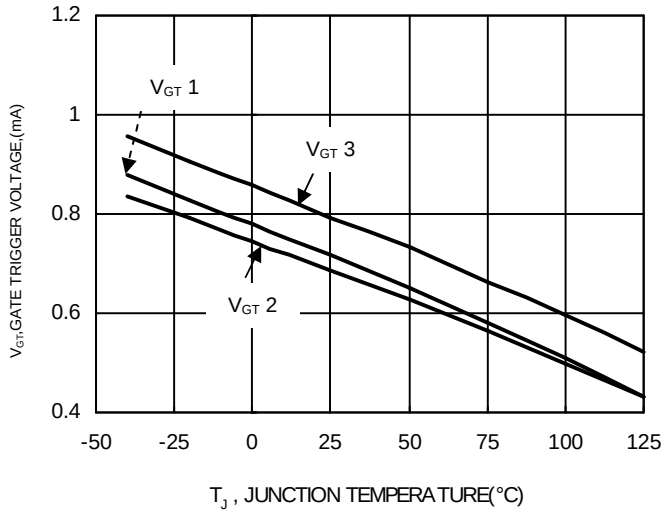


Fig.4- Typical Latching Current Versus Junction Temperature

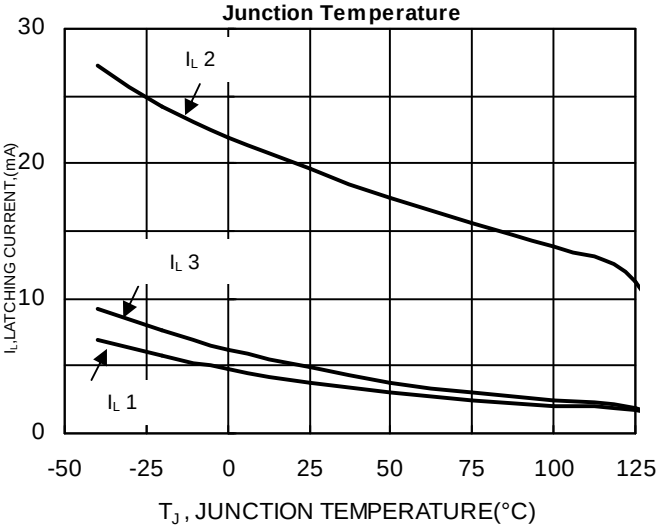


Fig.5- On-State Characteristics

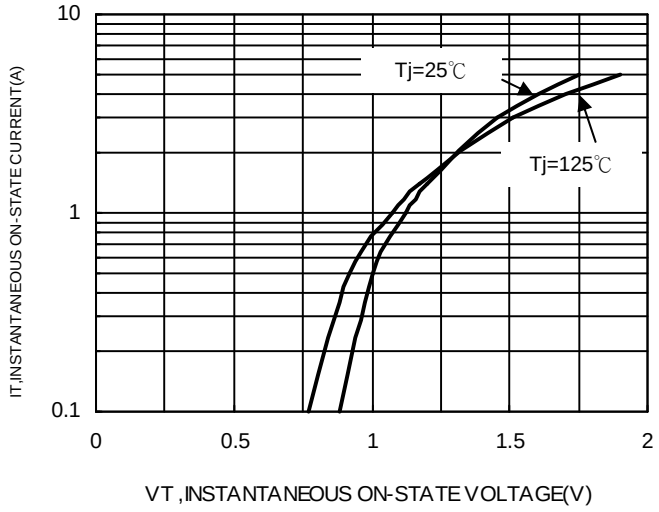
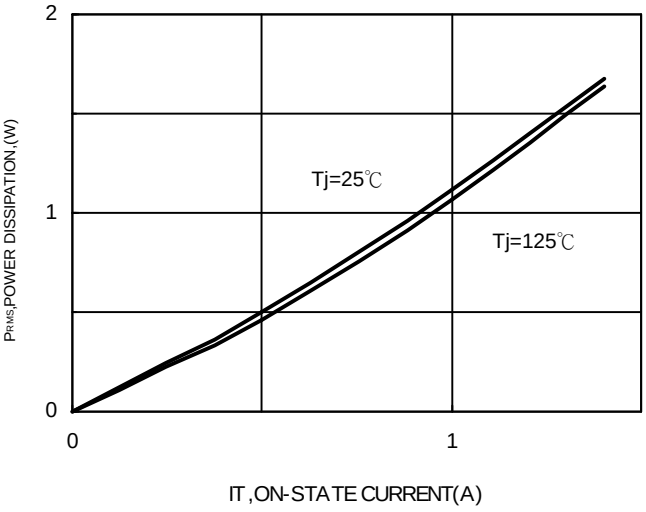


Fig.6- Power Dissipation versus IT



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