

T12M35T800HC(LS)

TRIACS SILICON BIDIRECTIONAL THYRISTORS

TRIACS 12 AMPERES RMS 800 VOLTS

FEATURES

- High di/dt(c) over 18A/ms
- Three-quadrants triggering Triac
- 150°C Operation temperature
- Over 800V VDRM/VRRM
- Low triggering level VGT/IGT and Low holding current characteristics
- · Isolated mounting base package
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative.

https://www.diodes.com/quality/product-definitions/

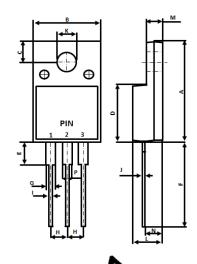
MECHANICAL DATA

- Package: ITO-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 (a)
- · Weight: 1.9 grams (Approximate)

APPLICATIONS

- Heaters
- · Washing machines
- Vacuum cleaners
- · Rectifier-fed DC inductive loads
- · DC motors and solenoids

<u>ITO-220AB</u>



ITO-220AB				
DIM.	MIN.	MAX		
Α	14.95	15.95		
В	10.00	10.40		
С	2.76	3.36		
D	8.50	8.80		
Е	3.30	3.90		
F	13.00	13.70		
G	1.15	1.70		
Н	2.40	2.70		
ı	0.50	0.80		
J	0.45	0.70		
K	3.00Ø	3.30Ø		
L	4.46	4.87		
М	2.48	2.80		
N	2.50	2.80		
Р	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	V_{DRM}	800	V
(T_J = -40 to 150°C, Full sine wave, 50 to 60 Hz; Gate open) (Note 3)	V_{RRM}	800	V
On-stage RMS current (Full sine wave, Tc = 100°C)	I _{T(RMS)}	12	Α
Peak non-repetitive surge current (one full cycle 60 HZ, T _J = 25°C)	Ітѕм	100	Α
Circuit fusing consideration (t = 8.3ms)	I ² T	41	A ² S
Average gate power	$P_{G(AV)}$	0.5	W
Operating junction temperature range	TJ	-40 to +150	°C
Storage temperature range	T _{STG}	-40 to +150	°C
Dielectric Strength from terminals to case, AC with t=1 minute, RH<30%	Vdis	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.
- 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	TYP.	MAX	UNIT
Junction to case with heatsink		Rth(j-c)		4	°C/W
Junction to ambient (DC)	$S^{(1)} = 0.5 \text{ cm}^2$	Rth(j-a)	55		°C/W
Maximum lead temperature for soldering purposes (1/8" form case for 10 seconds)		TL	-	260	°C

^{1.} S= Copper surface under tab.

Static Characteristics

PARAMETER		SYMBOL	MAX	UNIT
Threshold Voltage ⁽²⁾ @ T _J = 150°C		V_{to}	0.9	V
Dynamic resistors ⁽²⁾ @ T _J = 150°C		R _d	30	mΩ
Peak repetitive forward or reverse blocking current	T _J = 25°C	I _{DRM}	5	uA
(V_{AK} = rated V_{DRM} and V_{RRM} , gate open)	T _J = 150°C	I_{RRM}	2	mA

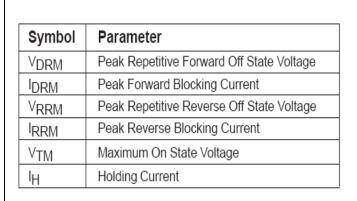
^{2.} For both polarities of A2 referenced to A1.

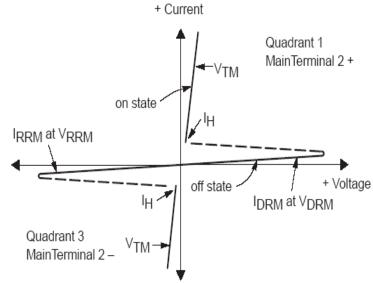
ON Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX	UNIT
Peak forward on-state voltage (I _{TM} = 15A @ T _J = 25°C)	Vтм		1.3	1.5	V
$V_D = V_{DRM}$, $R_L = 100\Omega$, $T_J = 150$ °C	V_{GD}	0.2			V
Gate trigger current (V _{AK} = 12V, R _L =100Ω)	I _{GT1} I _{GT2} I _{GT3}			35	mA
Gate trigger voltage (V _{AK} = 12V, R _L =100Ω)	V _{GT1} V _{GT2} V _{GT3}			1	٧
Holding comment ()/ 42\/ D =4000\	I _{H1}			35	- mA
Holding current ($V_{AK} = 12V$, $R_L=100\Omega$)	Інз			50	
	I _{L1}			50	
Latching current (V _{AK} = 12V, R _L =100Ω)	I _{L2}			60	mA
	I _{L3}			50	

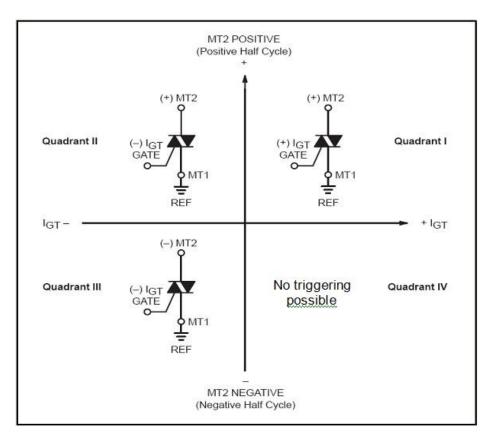
Dynamic Characteristics

PARAMETER		SYMBOL	MIN.	MAX	UNIT
Critical rate of rise of off (VAK = 67% rated VDRM	-stage voltage , @ T _J = 150°C, gate open)	dv/dt(s)	500	1	V/us
Critical rate of rise of on-state current (VDRM = maximum VDRM, @ TJ = 150°C)		di/dt(s)		50	A/us
Rate of change of commutating current	20V/us, Without snubber, @ $T_J = 125$ °C $V_D = 400$ V, gate open	di/dt(c)	18		A/ms

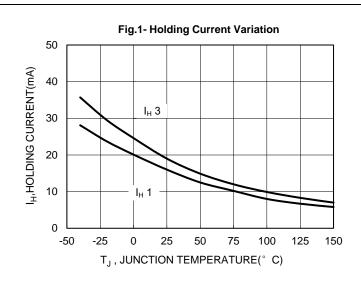


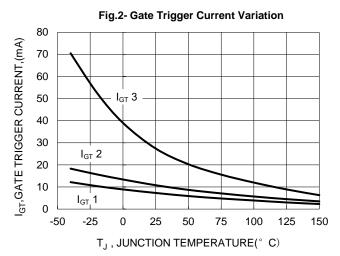


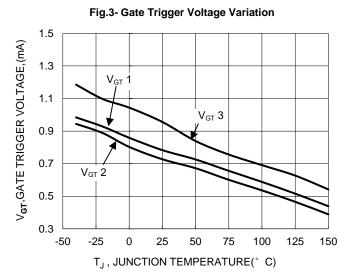
Quadrant Definitions

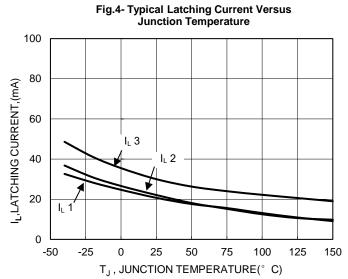


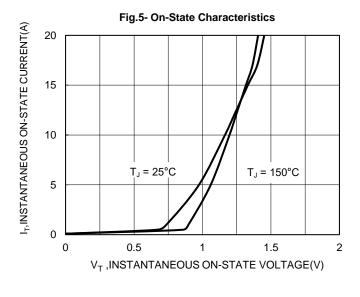
All polarities are referenced to MT1 With in -phase signal (using standard AC lines) quadrants I and III are used

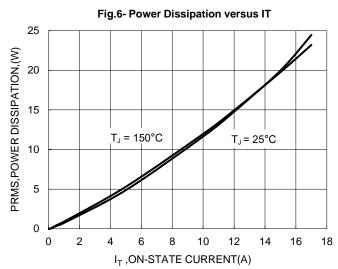




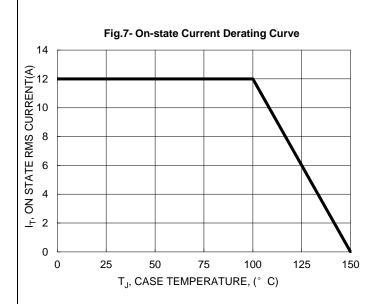








RATING AND CHARACTERISTIC CURVES (continued) T12M35T800HC

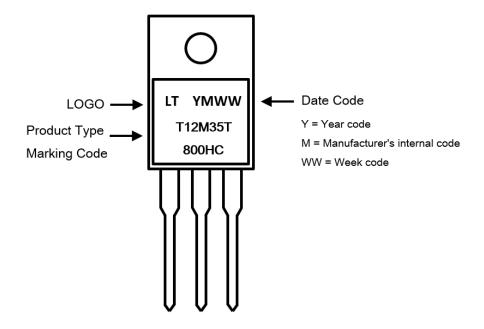




Ordering Information:

Part Number	Package	Packing		
Fait Nullibei	Fackage	Qty.	Carrier	
T12M35T800HC	ITO-220AB	50	Tube	

Marking Information:



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