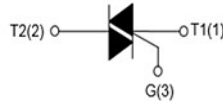


100A TRIACs

BTA100-1200BW /1600BW



ITO-247



TO-247 (INS)
Leaded Package
RoHS compliant

General Description :

BTA 100 Series triacs provide good commutation capability, which is suitable for general purpose AC switching and voltage regulation, and can be used in static relays, heating regulation, induction motor starting circuits. From all three pins to external heatsink, BTA100 Series triacs provide an insulation voltage of 2500 VRMS., complying with UL standards (File ref: E252906)

Features:

Symbol	Value	Unit
V_{DRM}/V_{RRM}	1200/1600	V
$I_{T(RMS)}$	100	A
I_{GT1-3}	≤50	mA

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	Value	Units
Storage junction temperature range	T_{stg}	-40-150	$^\circ\text{C}$
Operating junction temperature range	T_j	-40-125	$^\circ\text{C}$
Repetitive peak off-state voltage	$T_j=25^\circ\text{C}$ V_{DRM}	1200/1600	V
Repetitive peak reverse voltage	$T_j=25^\circ\text{C}$ V_{RRM}	1200/1600	V
Non repetitive surge peak Off-state voltage	V_{DSM}	100	V
Non repetitive peak reverse voltage	V_{RSM}	100	V
RMS on-state current	$(T_c=70^\circ\text{C})$ $I_{T(RMS)}$	100	A
Non repetitive surge peak on-state current (tp=20ms)	I_{TSM}	1100	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	5500	A^2s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	100	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	8	A
Average gate power dissipation	$P_{G(AV)}$	2	W
Peak gate power	P_{GM}	10	W



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Electrical Characteristic at ($T_a = 25\text{ }^\circ\text{C}$ Unless otherwise specified)

Test Conditions	Quadrant	Symbol	Value			Units
			Min.	Typ.	Max.	
$V_D = 12V$ $R_L = 33\Omega$	I - II - III	I_{GT}	--	--	50	mA
	I - II - III	V_{GT}	--	--	1.3	V
$V_D = V_{DRM}$ $T_j = 125^\circ\text{C}$ $R_L = 3.3K\Omega$	I - II - III	V_{GD}	0.2	--	--	V
$I_G = 1.2I_{GT}$	I - II - III	I_L	--	--	180	mA
$I_T = 100\text{mA}$		I_H	--	--	100	mA
$V_D = 2/3V_{DRM}$ $T_j = 125\text{ }^\circ\text{C}$ Gate Open		dV/dt	1500	--	--	V μ s
Static Characteristics						
Parameter		Symbol	Value			Units
			Min.	Typ.	Max.	
$I_{TM} = 150A$ $t_p = 380\mu\text{s}$	$T_j = 25^\circ\text{C}$	V_{TM}	--	--	1.5	V
$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$	I_{DRM}	--	--	20	μ A
	$T_j = 125^\circ\text{C}$	I_{RRM}	--	--	12	mA
Thermal Resistances						
Junction to case Temperature(AC)		$R_{th(j-c)}$	--	--	0.30	$^\circ\text{C/W}$

Typical Characteristic Curves

FIG.1: Maximum power dissipation versus RMS on-state current

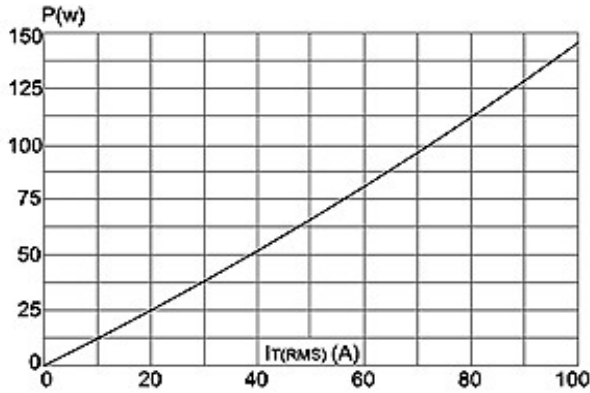


FIG.3: Surge peak on-state current versus number of cycles

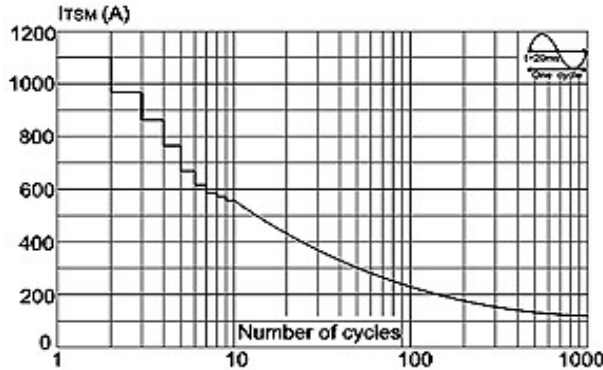


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of $I^2 t$ ($di/dt < 100\text{A}/\mu\text{s}$)

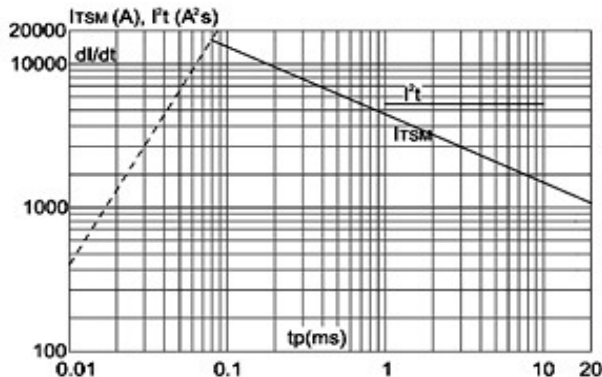


FIG.2: RMS on-state current versus case temperature

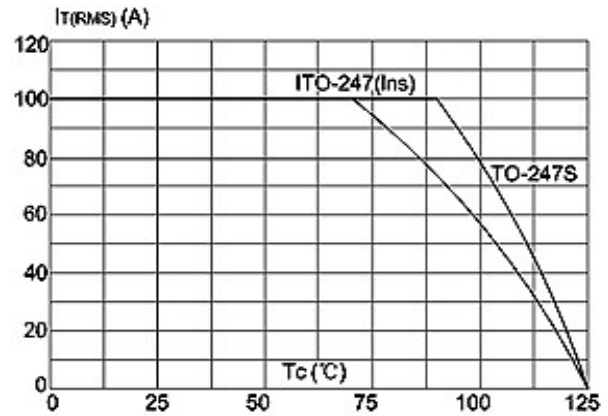


FIG.4: On-state characteristics (maximum values)

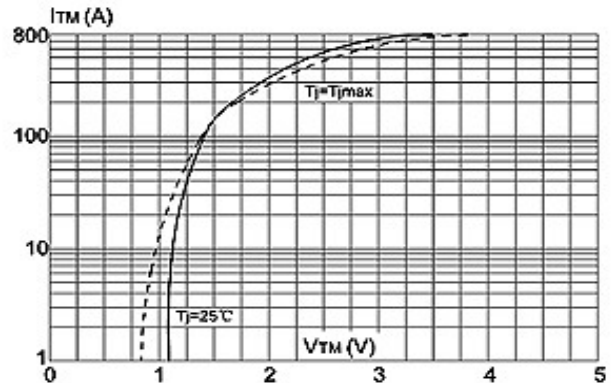
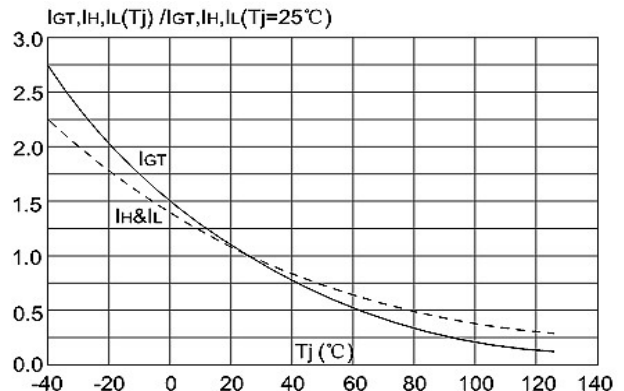
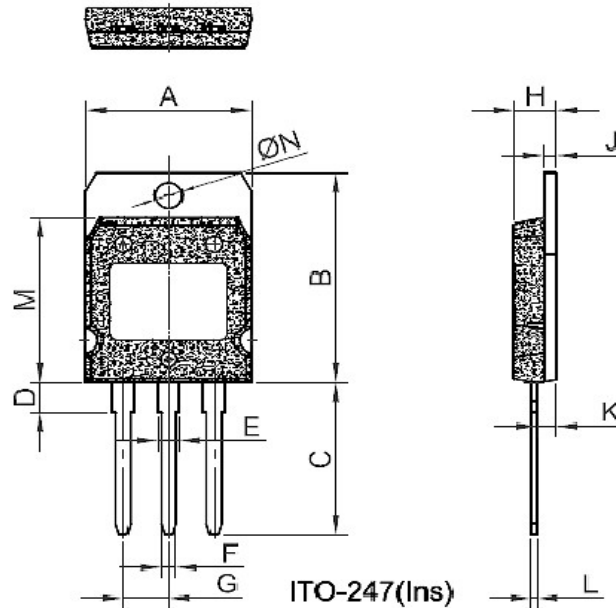


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Package Detail

ITO247 (INS) PlasticLeaded Package



Ref	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	19.7	19.9	20.1	0.776	0.783	0.791
B	26.9	27.1	27.3	1.059	1.067	1.075
C	19.4	19.9	20.4	0.764	0.783	0.803
D	3.8	3.9	4.0	0.15	0.154	0.157
E	2.56	2.66	2.76	0.101	0.105	0.109
F	1.66	1.76	1.86	0.065	0.069	0.073
G		5.45			0.215	
H	5.05	5.10	5.5	0.199	0.201	0.217
J	1.45	1.50	1.55	0.057	0.059	0.061
K	2.20	2.30	2.40	0.087	0.091	0.094
L	0.60	0.70	0.80	0.024	0.028	0.031
M	21.2	21.3	21.4	0.835	0.839	0.843
ØN	3.20	3.30	3.40	0.126	0.130	0.134



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Recommended Product Storage Environment for Discrete Semiconductor Devices

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside down. They should not be placed against the wall.

Shelf Life of CDIL Products

The shelf life of products is the period from product manufacture to shipment to customers. The product can be unconditionally shipped within this period. The period is defined as 2 years.

If products are stored longer than the shelf life of 2 years the products shall be subjected to quality check as per CDIL quality procedure.

The products are further warranted for another one year after the date of shipment subject to the above conditions in CDIL original packing.

Floor Life of CDIL Products and MSL Level

When the products are opened from the original packing, the floor life will start.

For this, the following JEDEC table may be referred:

JEDEC MSL Level		
Level	Time	Condition
1	Unlimited	≤30 °C / 85% RH
2	1 Year	≤30 °C / 60% RH
2a	4 Weeks	≤30 °C / 60% RH
3	168 Hours	≤30 °C / 60% RH
4	72 Hours	≤30 °C / 60% RH
5	48 Hours	≤30 °C / 60% RH
5a	24 Hours	≤30 °C / 60% RH
6	Time on Label(TOL)	≤30 °C / 60% RH



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Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



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