

TRIACs, 100A Snubberless

FEATURES

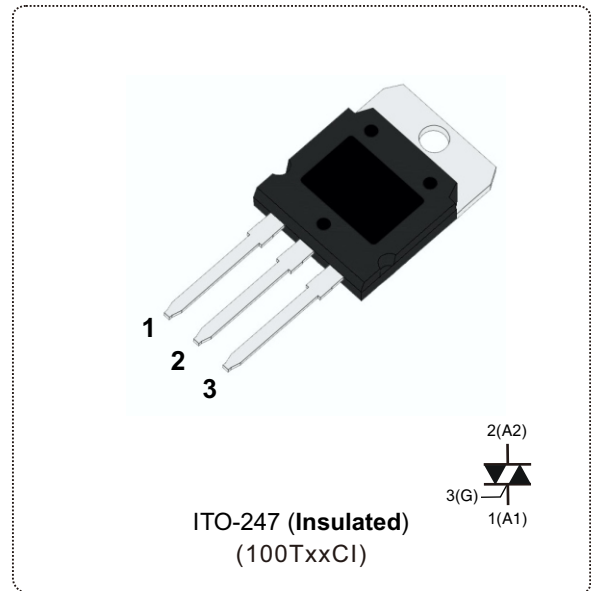
- High current triac
- Low thermal resistance with clip bonding
- Low thermal resistance for ITO-247 package
- High commutation capability
- 100T series are **UL** certified (File ref: E320098)
- Packages are RoHS compliant

APPLICATIONS

The snubberless concept offer suppression of RC network and it is suitable for applications such as on/off function in static relays, heating regulation, induction motor starting circuits, phase control operation in light dimmers, motor speed controllers, and similar.

Due to their clip assembly technique, they provide a superior performance in surge current handling capabilities.

100T series are 3 Quadrants triacs. They are specially recommended for use on inductive loads.



MAIN FEATURES

SYMBOL	VALUE	UNIT
$I_{T(RMS)}$	100	A
V_{DRM}/V_{RRM}	1200 to 1600	V
$I_{GT(1-3)}$	30 to 60	mA

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUE	UNIT
RMS on-state current (full sine wave)	$I_{T(RMS)}$	$T_c = 70^\circ\text{C}$	100	A
Non repetitive surge peak on-state current (full cycle, T_j initial = 25°C)	I_{TSM}	F = 50 Hz t = 10 ms	1000	A
		F = 60 Hz t = 8.3 ms	1047	
I^2t Value for fusing	I^2t	$t_p = 10$ ms t = 10 ms	5000	A^2s
Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$, $t_r \leq 100$ ns	dI/dt	F = 120 Hz, $I_G = 2 \times I_{GT}$, $t_r \leq 100$ ns $T_J = 125^\circ\text{C}$	100	A/ μs
Peak gate current	I_{GM}	$T_p = 20$ μs $T_J = 125^\circ\text{C}$	8	A
Peak gate power dissipation	P_{GM}	$T_p = 20$ μs $T_J = 125^\circ\text{C}$	10	
Average gate power dissipation	$P_{G(AV)}$	$T_J = 125^\circ\text{C}$	2	
Storage temperature range	T_{stg}		- 40 to + 150	$^\circ\text{C}$
Operating junction temperature range	T_J		- 40 to + 125	

© ELECTRICAL CHARACTERISTICS (T_J= 25 °C unless otherwise specified)

SNUBBERLESS and Logic level (3 quadrants)					
SYMBOL	TEST CONDITIONS	QUADRANT		100TxxCI	Unit
				BW	
I _{GT} ⁽¹⁾	V _D = 12 V, R _L = 33Ω	I - II - III	MAX.	60	mA
V _{GT}		I - II - III		1.5	V
V _{GD}	V _D = V _{DRM} , R _L = 3.3KΩ T _j = 125°C	I - II - III	MIN.	0.2	V
I _H ⁽²⁾	I _T = 500 mA		MAX.	120	mA
I _L	I _G = 1.2 I _{GT}	I - III	MAX.	150	mA
		II		200	
dV/dt ⁽²⁾	V _D = 67% V _{DRM} , gate open, T _j = 125°C		MIN.	1500	V/μs
V _{ins}	Insulation voltage, AC 50Hz, 60S			2500	V

STATIC CHARACTERISTICS					
SYMBOL	TEST CONDITIONS			VALUE	UNIT
V _{TM} ⁽²⁾	I _{TM} = 150 A, t _p = 380 μs	T _J = 25°C	MAX.	1.55	V
V _{th} ⁽²⁾	Threshold voltage	T _J = 125°C	MAX.	0.89	V
R _d ⁽²⁾	Dynamic resistance	T _J = 125°C	MAX.	7.8	mΩ
I _{DRM} I _{RRM}	V _D = V _{DRM} V _R = V _{RRM}	T _J = 25°C	MAX.	50	μA
		T _J = 125°C		10	mA

Note 1: Minimum I_{GT} is guaranteed at 5% of I_{GT} max.

Note 2: For both polarities of A2 referenced to A1.

THERMAL RESISTANCE					
SYMBOL				VALUE	UNIT
R _{th(j-c)}	Junction to case (AC)			0.30	°C/W
R _{th(j-a)}	Junction to ambient	ITO-247		40	

PRODUCT SELECTOR					
PART NUMBER	VOLTAGE (xx)		SENSITIVITY	TYPE	PACKAGE
	1200 V	1600 V			
100TxxCI-BW	V	V	60 mA	Snubberless	ITO-247

ORDERING INFORMATION					
ORDERING TYPE	MARKING	PACKAGE	WEIGHT	BASE Q'TY	DELIVERY MODE
100TxxCI-yy	100TxxCI-yy	ITO-247	6.5g	20	Tube

Note: xx = voltage, yy = sensitivity

ORDERING INFORMATION SCHEME

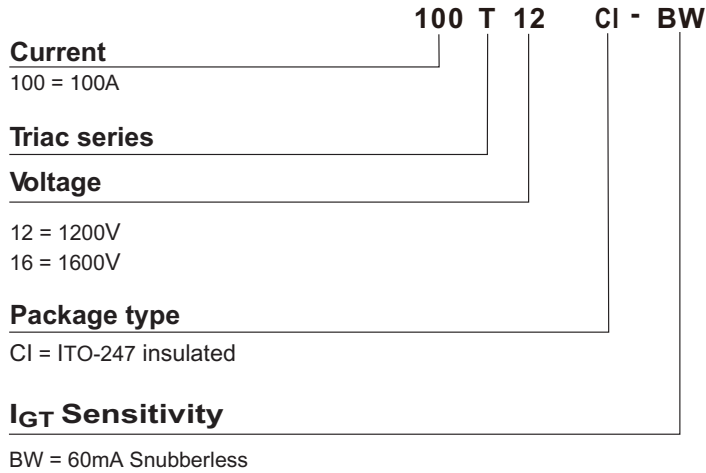


Fig.1 Maximum power dissipation versus on-state RMS current (full cycle)

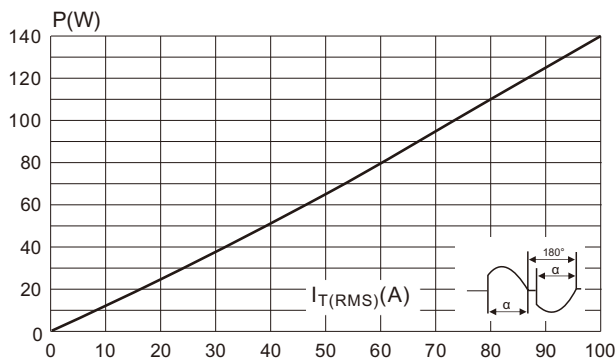


Fig.2 On-state rms current versus case temperature (full cycle)

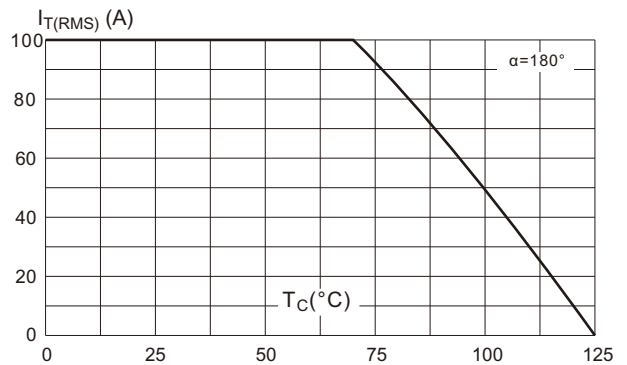


Fig.3 On-state characteristics (maximum values).

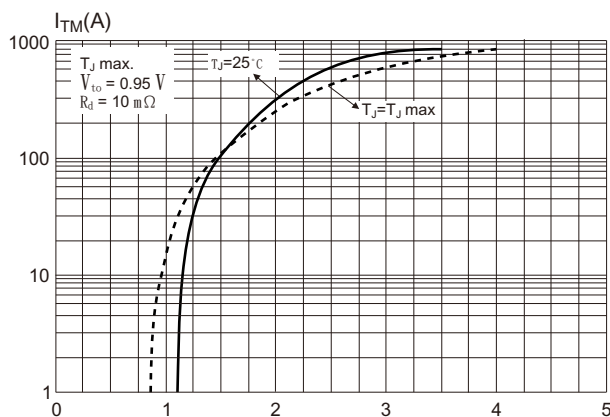


Fig.4 Surge peak on-state current versus number of cycles.

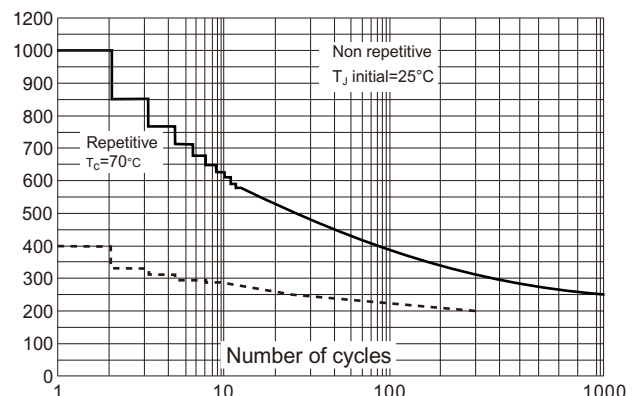


Fig.5 Non-repetitive surge peak on-state current for a sinusoidal pulse and corresponding value of I^2t .

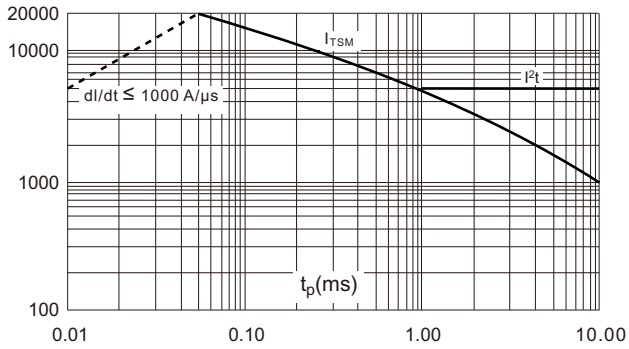
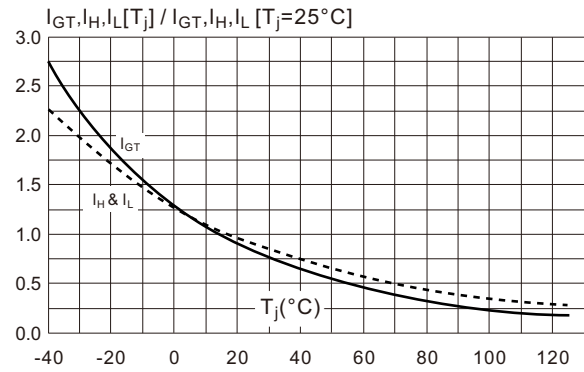
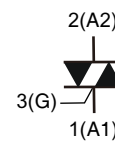
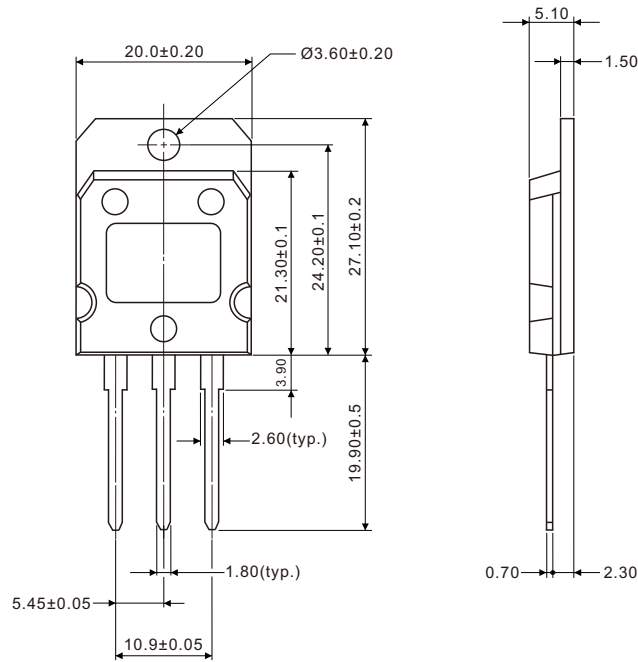


Fig.6 Relative variation of gate trigger, holding and latching current versus junction temperature (typical values)



Case Style

ITO-247



All dimensions in millimeters