

TRIACs, 100A (DBC Module, open-frame type) Snubberless

FEATURES

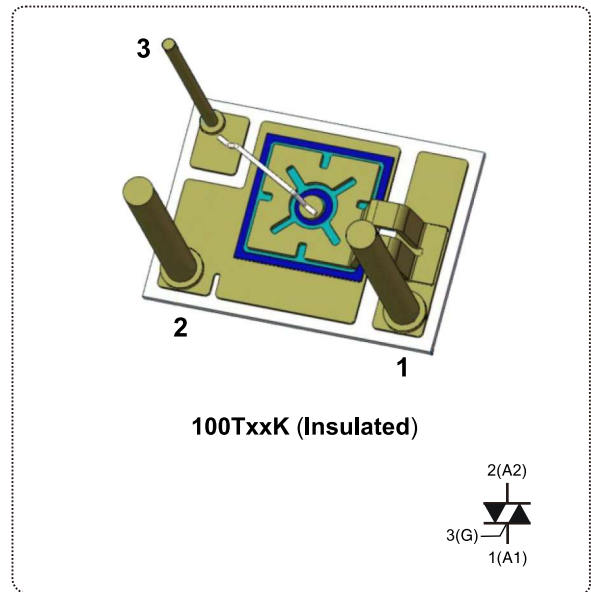
- High current triac
- Low thermal resistance with clip bonding
- Low thermal resistance for DBC package
- High commutation capability
- Packages are RoHS compliant

APPLICATIONS

- DC motor control
- Temperature control
- Lighting control

MAIN FEATURES

SYMBOL	VALUE	UNIT
$I_{T(RMS)}$	100	A
V_{DRM}/V_{RRM}	1200 to 1800	V
$I_{GT(Q1)}$	35 to 70	mA



ABSOLUTE MAXIMUM RATINGS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUE	UNIT
RMS on-state current (full sine wave)	$I_{T(RMS)}$		$T_c=72^\circ\text{C}$	100	A
Non repetitive surge peak on-state current (full cycle, T_j initial = 25°C)	I_{TSM}	$F=50\text{ Hz}, V_R=0.6 V_{RRM}$	$t=10\text{ ms}$	1000	A
		$F=60\text{ Hz}, V_R=0.6 V_{RRM}$	$t=8.3\text{ ms}$	1047	
I^2t Value for fusing	I^2t	$t_p=10\text{ ms}$	$t=10\text{ ms}$	5000	A^2s
Critical rate of rise of on-state current $I_G = 2xI_{GT}, t_r \leq 100\text{ ns}$	di/dt	$V_D=66.7\% V_{DRM}, t_p=200\mu\text{s},$ $I_G=0.3\text{ A}, di_G/dt = 0.3\text{ A}/\mu\text{s}$	$T_J=125^\circ\text{C}$	100	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	$T_p=20\mu\text{s}$	$T_J=125^\circ\text{C}$	8	A
Peak gate power dissipation	P_{GM}	$T_p=20\mu\text{s}$	$T_J=125^\circ\text{C}$	10	W
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		VALUE	Unit
I _{GT} ⁽¹⁾	V _D = 12 V, R _L = 30Ω	I - II - III	MAX.	70	mA
V _{GT}		I - II - III		1.50	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 = 1000 mA		MAX.	120	mA
I _L	I _G = 1.2 I _{GT}	I - III	MAX.	150	mA
		II		200	
dV/dt ⁽²⁾	V _D = 66.7% V _{DRM} , gate open, T _j = 125°C		MIN.	1500	V/μs
V _{INS}	Insulation voltage, AC 50 HZ, 60s			1800	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 DBC (AC)			0.28	°C/W

PRODUCT SELECTOR						
PART NUMBER	VOLTAGE (xx)			SENSITIVITY	TYPE	PACKAGE
	1200V	1600V	1800V			
100TxxK	V	V	V	70 mA	Snubberless	DBC module

ORDERING INFORMATION					
ORDERING TYPE	MARKING	PACKAGE	WEIGHT	BASE Q'TY	DELIVERY MODE
100TxxK	100TxxK	DBC module	5.0g	50	Box

Note: xx = voltage

ORDERING INFORMATION SCHEME

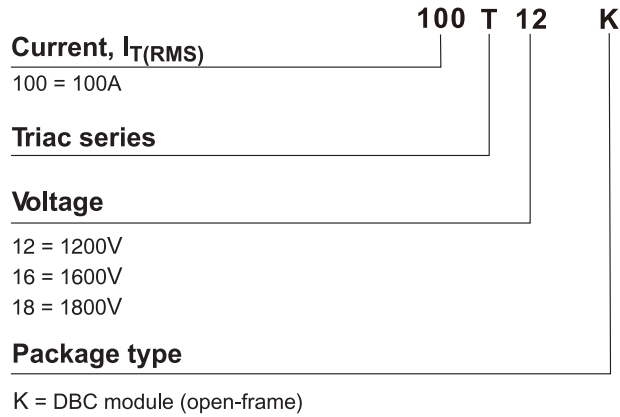


Fig.1 Maximum power dissipation versus on-state RMS current (full cycle)

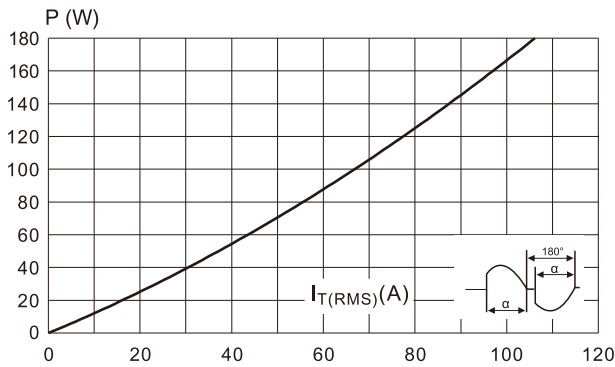


Fig.2 On-state rms current versus case temperature (full cycle)

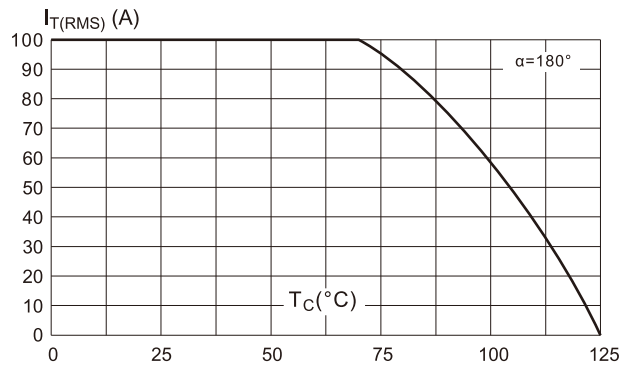


Fig.3 On-state characteristics (maximum values).

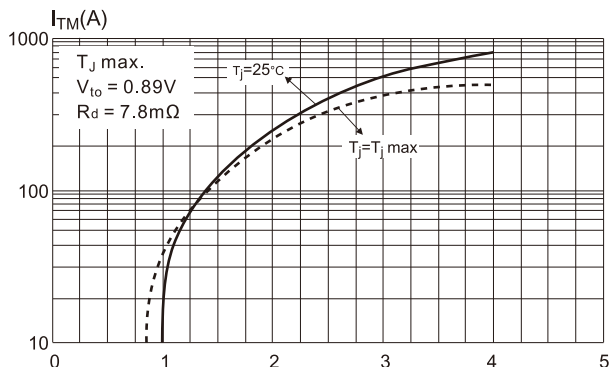


Fig.4 Surge peak on-state current versus number of cycles.

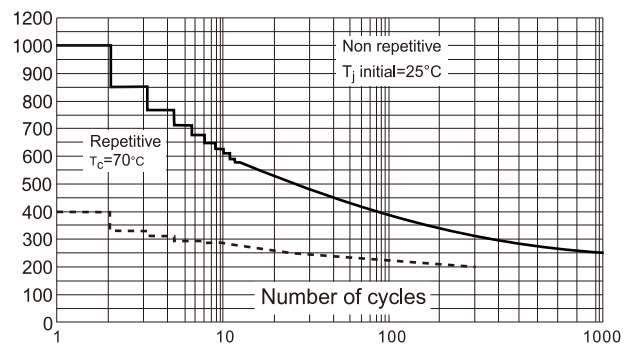


Fig.5 Non-repetitive surge peak on-state current for a sinusoidal pulse and corresponding value of I^2t .

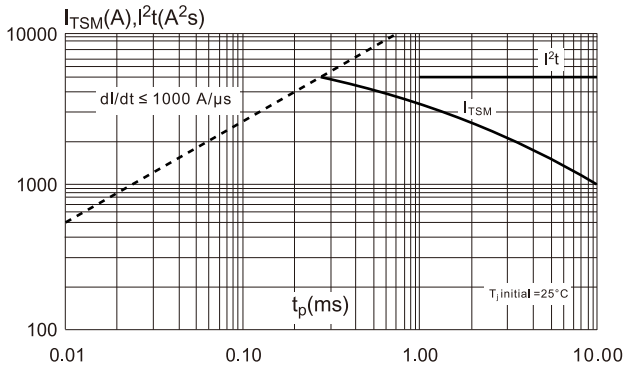
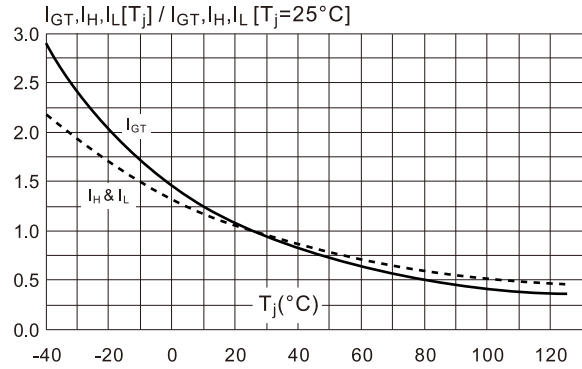
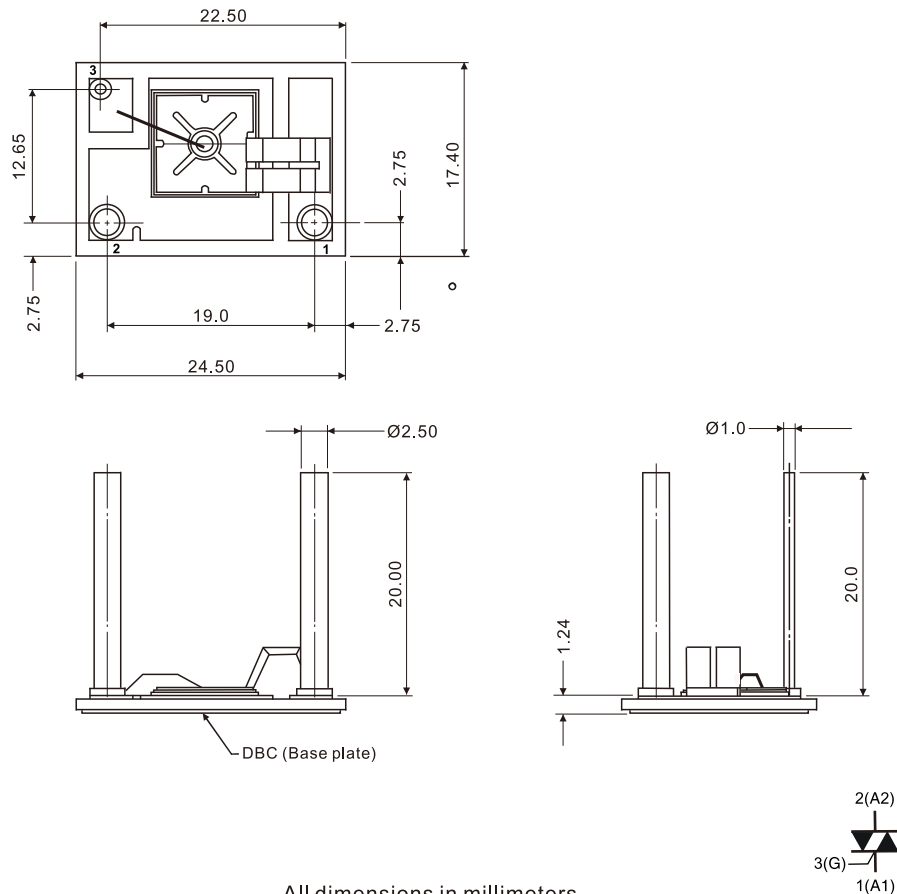


Fig.6 Relative variation of gate trigger, holding and latching current versus junction temperature (typical values)



Case Style



All dimensions in millimeters