

TO-252 Plastic-Encapsulate Thyristors

BT151 SCR

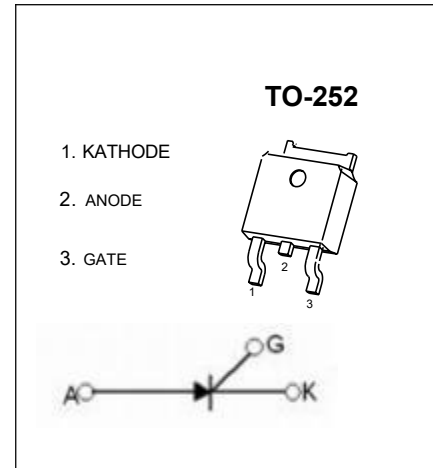
MAIN FEATURES

Symbol	value	unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	500	V
I_{TSM}	100	A

GENERAL DESCRIPTION

. Glass passivated triacs in a plastic envelope ,
 intended for use in applications requiring
 high bidirectional transient and blocking
 voltage capability and high thermal cycling performance.

. Typical applications include motor control,
 industrial and domestic lighting , heating and static switching.


ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

symbol	parameter			value	unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	D ² PAK/TO-220	T _C =107°C	8	A
I_{TSM}	Non repetitive surge peak on-state current (full sine wave, T _J =25°C)		t=10ms	100	A
			t=8.3ms	110	
I_{GM}	Peak gate current			2	A
$P_{G(AV)}$	Average gate power dissipation		T _J =125°C	0.5	W
T _{stg}	Storage junction temperature range			-40 to +150	°C
T _J	Operating junction temperature range			-40 to +125	

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Rated repetitive peak off-state/reverse voltage	V_{DRM}, V_{RRM}	$I_D=10\mu A$	500		V
Rated repetitive peak off-state current	I_{DRM}, I_{RRM}	$V_D=620V$		10	μA
On-state voltage	V_{TM}	$I_T=23A$	1.4	1.75	V
Gate trigger current	I I_{GT}	T ₂ , G $V_D=12V$ $I_T=0.1A$ $R_L=100\Omega$		10	mA
Gate trigger voltage	I V_{GT}	T ₂ , G $V_D=12V$ $I_T=0.1A$ $R_L=100\Omega$		1.45	V
Holding current	I_H	$I_T=100mA$ $I_G=20mA$		20	mA

Characteristics Curve:

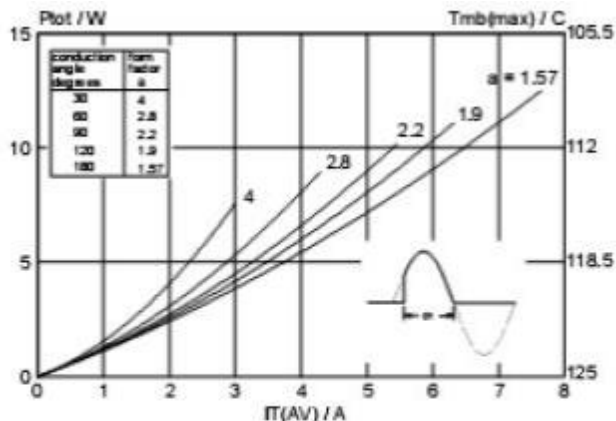


Fig. 1. Maximum on-state dissipation, P_{tot} versus average on-state current, $I_{T(AV)}$ where $a = \text{form factor} = I_{T(RMS)} / I_{T(AV)}$

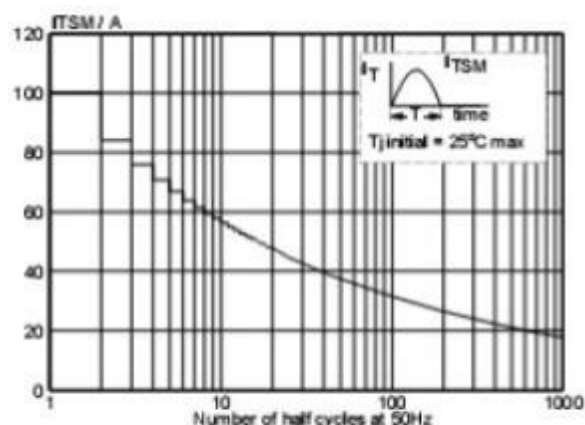


Fig. 4. Maximum permissible non-repetitive peak on-state current I_{TSM} versus number of cycles, for sinusoidal currents, $f = 50 \text{ Hz}$.

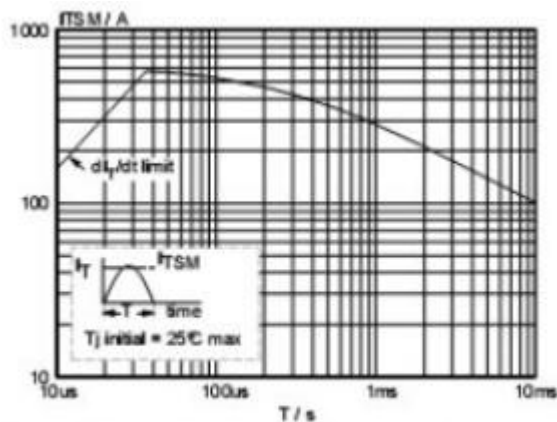


Fig. 2. Maximum permissible non-repetitive peak on-state current I_{TSM} versus pulse width t_p , for sinusoidal currents, $t_p \leq 10 \text{ ms}$.

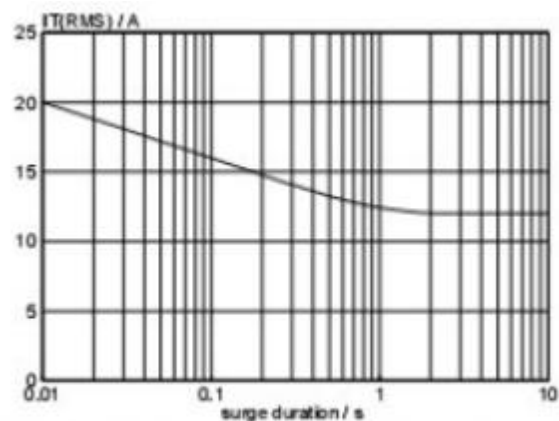


Fig. 5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$ versus surge duration, for sinusoidal currents, $f = 50 \text{ Hz}$; $T_{max} \leq 109^\circ \text{C}$.

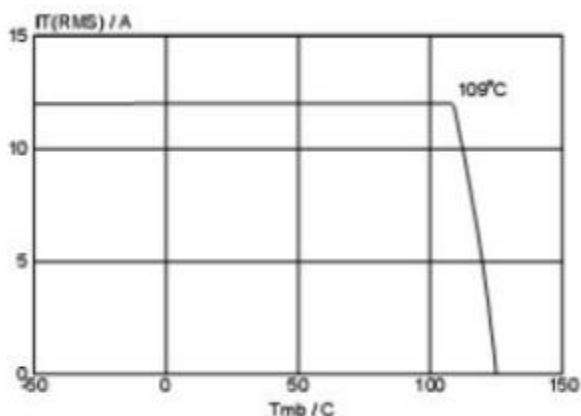


Fig. 3. Maximum permissible rms current $I_{T(RMS)}$ versus mounting base temperature T_{mb} .

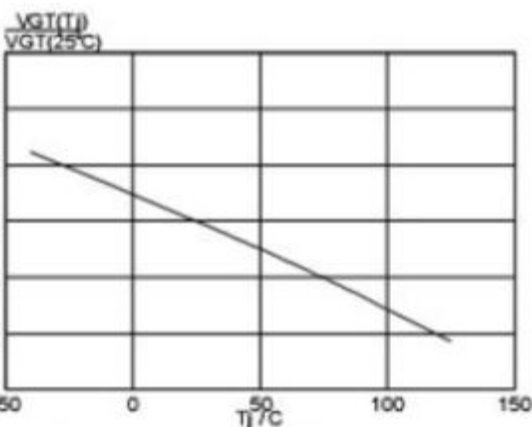


Fig. 6. Normalised gate trigger voltage $V_{Gr}(T) / V_{Gr}(25^\circ \text{C})$, versus junction temperature T_j .