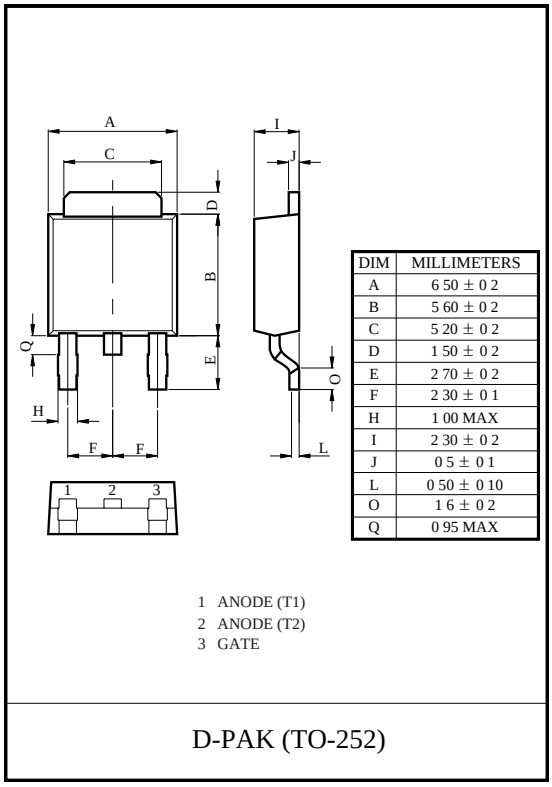
MAIN FEATURES

Symbol	value	unit
$I_{T(RMS)}$	4	A
V_{DRM} / V_{RRM}	600	V
I_{TSM}	25	A



DIM	MILLIMETERS
A	6 50 ± 0 2
B	5 60 ± 0 2
C	5 20 ± 0 2
D	1 50 ± 0 2
E	2 70 ± 0 2
F	2 30 ± 0 1
H	1 00 MAX
I	2 30 ± 0 2
J	0 5 ± 0 1
L	0 50 ± 0 10
O	1 6 ± 0 2
Q	0 95 MAX

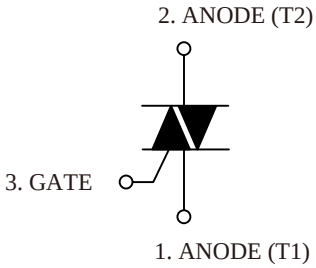
D-PAK (TO-252)

FEATURES

Glass passivated triacs in a plastic, 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.

SYMBOL



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

PARAMETER			SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltages			V_{DRM}	600 (Note 2)	V
RMS On-State Current (full sine wave, T_{MB} ≤107°C)			$I_{T(RMS)}$	4	A
Non-Repetitive Peak On-State Current		t =20ms	I_{TSM}	25	A
(Full sine wave; T_J=25°C prior to surge)		t =16.7ms		27	A
I^2t for fusing (t =10ms)			I^2t	3.1	A^2s
Repetitive Rate of Rise of On-State Current After Triggering	I_{TM}=6A, I_G=0.2A, dI_G/dt=0.2A/μs	T2+ G+	dI_T/dt	50	A/μs
		T2+ G-		50	A/μs
		T2- G-		50	A/μs
		T2- G+		10	A/μs
Peak Gate Voltage			V_{GM}	5	V
Peak Gate Current			I_{GM}	2	A
Peak Gate Power			P_{GM}	5	W
Average Gate Power (over any 20 ms period)			$P_{G(AV)}$	0.5	W
Junction Temperature			T_J	150	°C
Storage Temperature			T_{STG}	-40 ~ +150	°C

Note: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. Although not recommended, off-state voltages up to 800V may be applied without damage, but the traic may switch to the on-state. The rate of rise of current should not exceed 3A/μs.

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter		Symbol	Test conditions		Min	Max	Unit
Rated repetitive peak off-state/reverse voltage		V_{DRM},V_{RRM}	I_D=10μA		600		V
Rated repetitive peak off-state current		I_{DRM}, I_{RRM}	V_D=620V			10	μA
On-state voltage		V_{TM}	I_T=5A			1.7	V
Gate trigger current	Ⅰ	I_{GT}	T_2(+), G(+)	V_D=12V R_L=100Ω		10	mA
	Ⅱ		T_2(+), G(-)			10	mA
	Ⅲ		T_2(-), G(-)			10	mA
	Ⅳ		T_2(-), G(+)			20	mA
Gate trigger voltage	Ⅰ	V_{GT}	T_2(+), G(+)	V_D=12V R_L=100Ω		1.45	V
	Ⅱ		T_2(+), G(-)			1.45	V
	Ⅲ		T_2(-), G(-)			1.45	V
	Ⅳ		T_2(-), G(+)			1.7	V
Holding current		I_H	I_T =100mA	I_G=20mA		20	mA

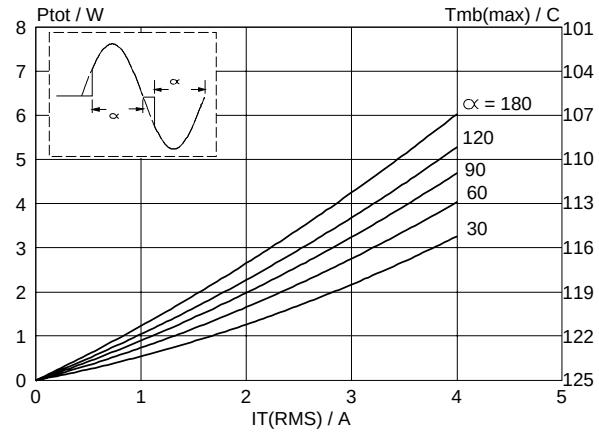


Fig.1. Maximum on-state dissipation, P_{tot}, versus rms on-state current, $I_{T(RMS)}$, where α = conduction angle.

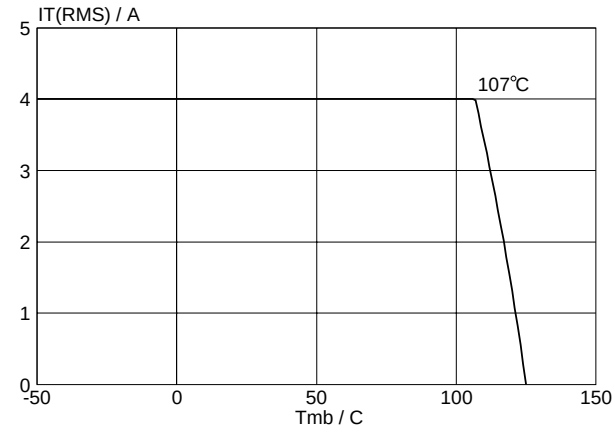


Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb}.

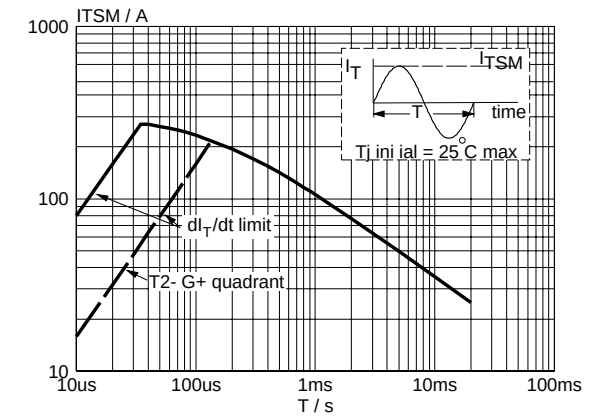


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus pulse width t_p, for sinusoidal currents, t_p ≤20ms.

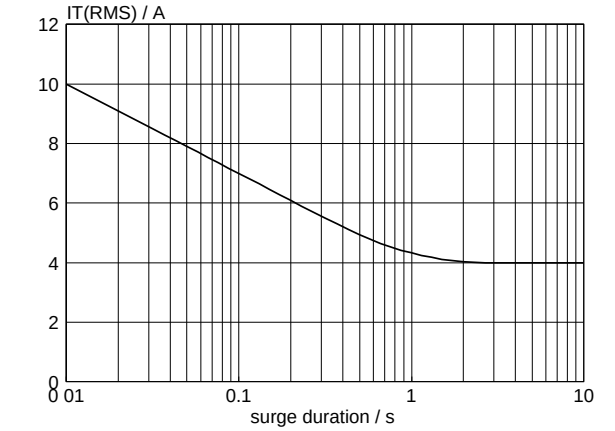


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, f = 50 Hz; T_{mb} ≤107˚C.

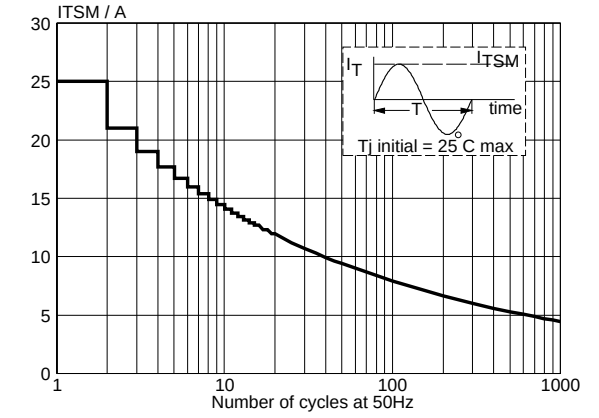


Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus number of cycles, for sinusoidal currents, f = 50 Hz.

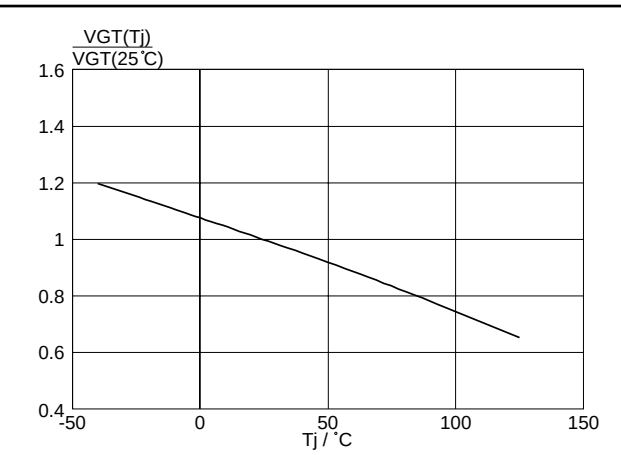


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)$/ $V_{GT}(25˚C)$, versus junction temperature T_j.

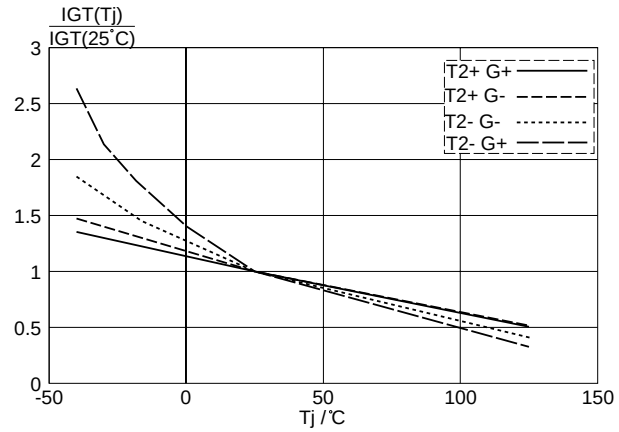


Fig.7. Normalised gate trigger current $I_{GT}(T_j)/ I_{GT}(25^{\circ}C)$, versus junction temperature T_j.

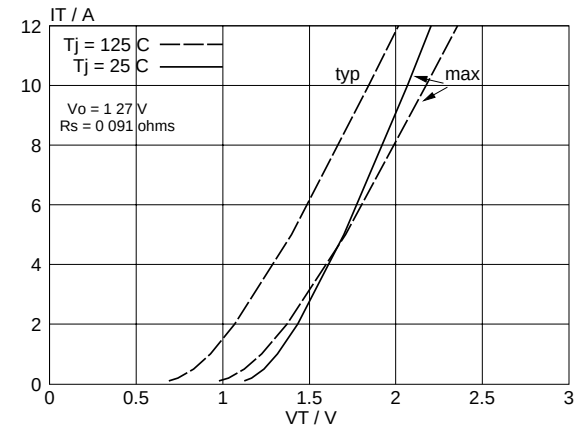


Fig.10. Typical and maximum on-state characteristic.

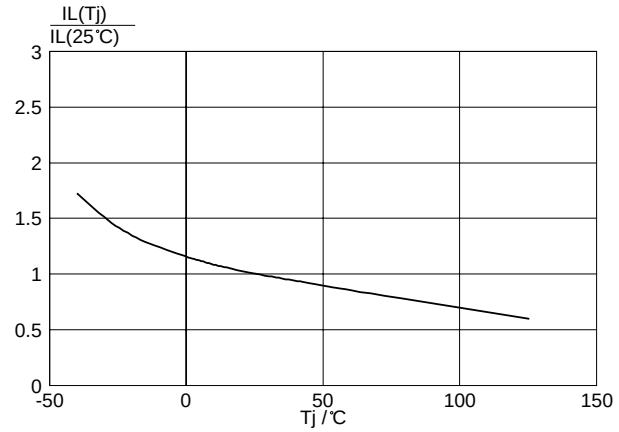


Fig.8. Normalised latching current $I_L(T_j)/ I_L(25^{\circ}C)$, versus junction temperature T_j.

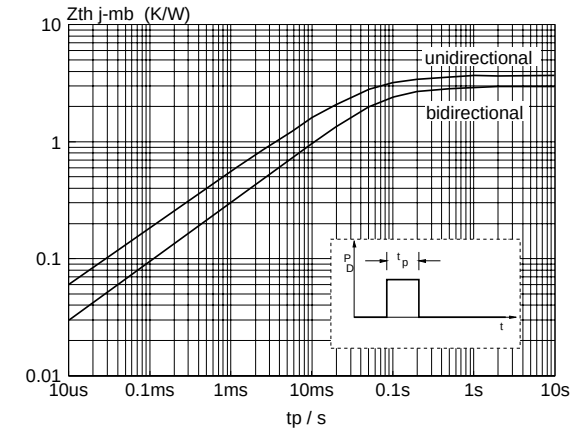


Fig.11. Transient thermal impedance $Z_{th\ j\text{-}mb}$, versus pulse width t_p.

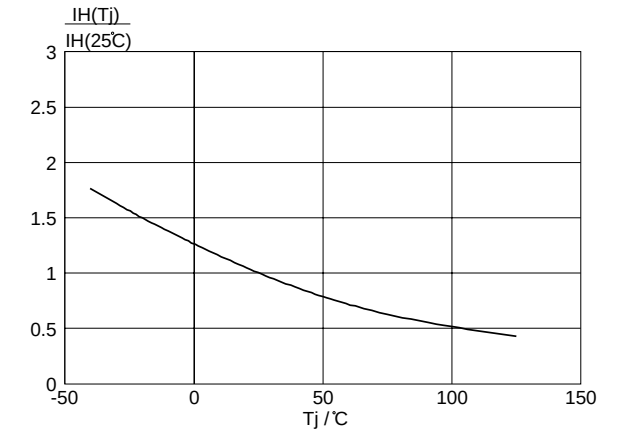


Fig.9. Normalised holding current $I_H(T_j)/ I_H(25^{\circ}C)$, versus junction temperature T_j.

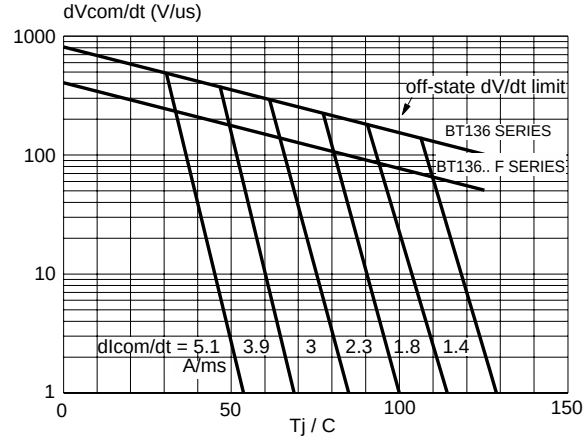


Fig.12. Typical commutation dV/dt versus junction temperature, parameter commutation dI_T/dt. The triac should commutate when the dV/dt is below the value on the appropriate curve for pre-commutation dI_T/dt.