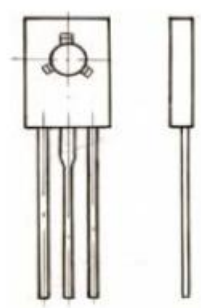
TO-126 Plastic-Encapsulate Thyristor

BT134 TRIAC

TO-126

1. ANODE
2. ANODE
3. GATE



1 2 3
T1 T2 G

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.

MAXIMUM RATINGS* T_A=25℃ unless otherwise noted

Symbol	Parameter	CONDITIONS	Value	Units
V_{DRM}	Repetitive peak off-state voltages		600	V
$I_{T(RMS)}$	RMS on-state current Non-repetitive peak on-state current	full sine wave ;Tmb≦107℃	4	A
I^2t	I^2t for fusing	t=10ms	3.1	A^2s
dI_T/dt	Repetitive rate of rise of on-state current after tiggering	dI_G/dt=0.2A/us		
		T2+G+	50	A/us
		T2+G-	50	A/us
		T2-G-	50	A/us
		T2-G+	10	A/us
I_{GM}	Peak gate current		2	A
V_{GM}	Peak gate voltage		5	V
P_{GM}	Peak gate power		5	W
$P_{G(AV)}$	Average gate power	over any 20 ms period	0.5	W
T_{stg}	Storage Temperature		-40-150	℃
T_J	Operating junction Temperature		125	℃

ELECTRICAL CHARACTERISTICS(Tamb=25℃ unless otherwise specified)

Parameter		Symbol	Test conditions		MIN	TYP	MAX	UNIT
Rated repetitive peak off-state current		I_{DRM}	$V_D=V_{DRM}$				10	μA
On-state voltage		V_{TM}	I_T=3A			1.4	1.7	V
Gate trigger current		I_{GT}	T_2(+), G(+)	V_D=12V R_L=100Ω			7	mA
			T_2(+), G(-)				7	mA
			T_2(-), G(-)				7	mA
			T_2(-), G(+)				20	mA
Gate trigger voltage		V_{GT}	T_2(+), G(+)	V_D=12V R_L=100Ω			1.45	mA
			T_2(+), G(-)				1.45	mA
			T_2(-), G(-)				1.45	mA
			T_2(-), G(+)				2	mA
Holding current		I_H	I_T=100mA I_G=20mA				15	mA
Thermal Resistance Junction to mounting base		$R_{th\ j\text{-}mb}$	full cycle				3.0	k/W
			half cycle				3.7	K/w
Thermal Resistance Junction to ambient		$R_{th\ j\text{-}a}$	In free air			60		K/w

Typical Characteristics

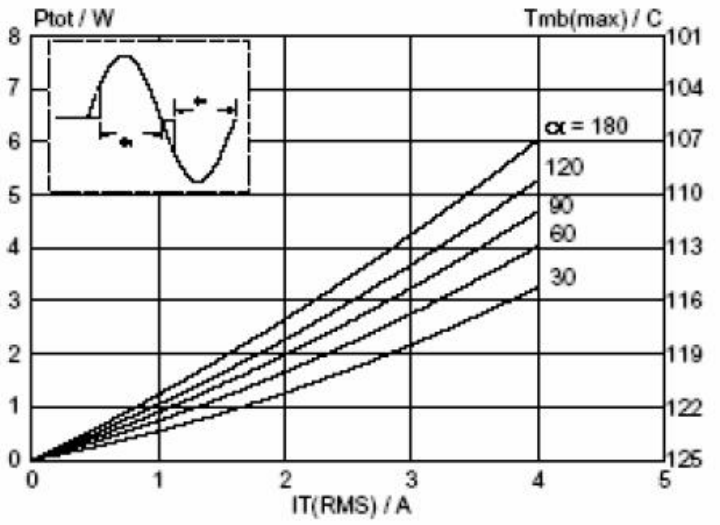


Fig.1. Maximum on-state dissipation, P_{tot}, versus rms on-state current, $I_{T(RMS)}$, where α = conduction angle.

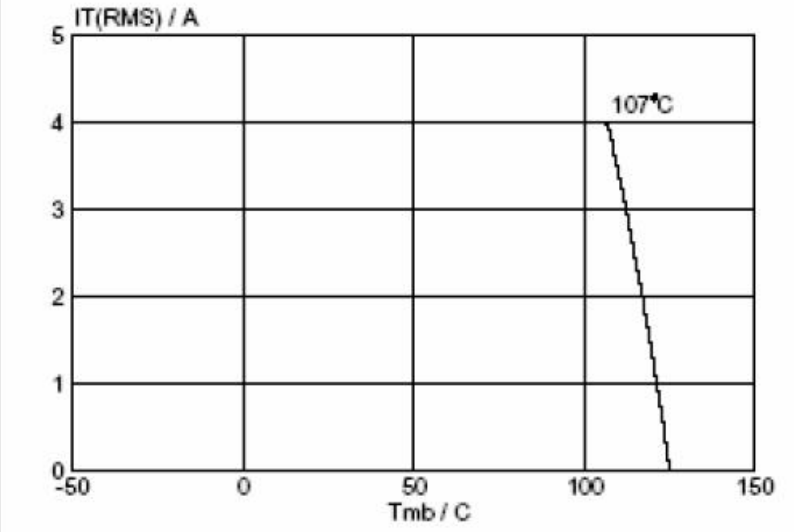


Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb}.

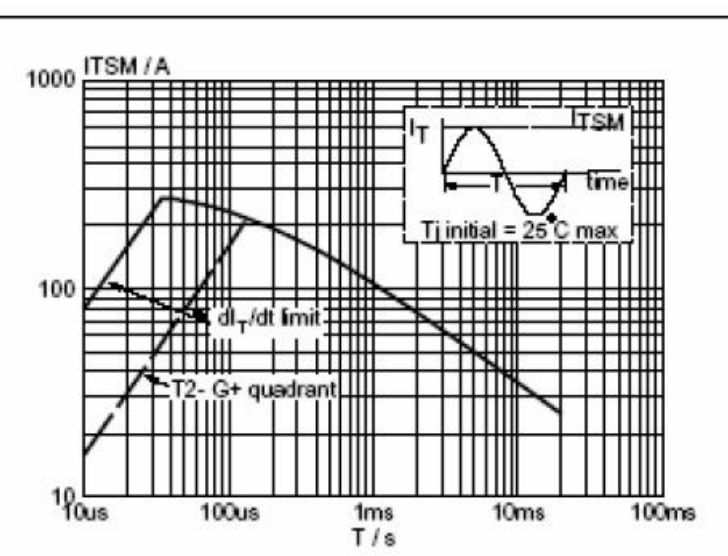


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus pulse width t_p, for sinusoidal currents, $t_p \leq 20ms$.

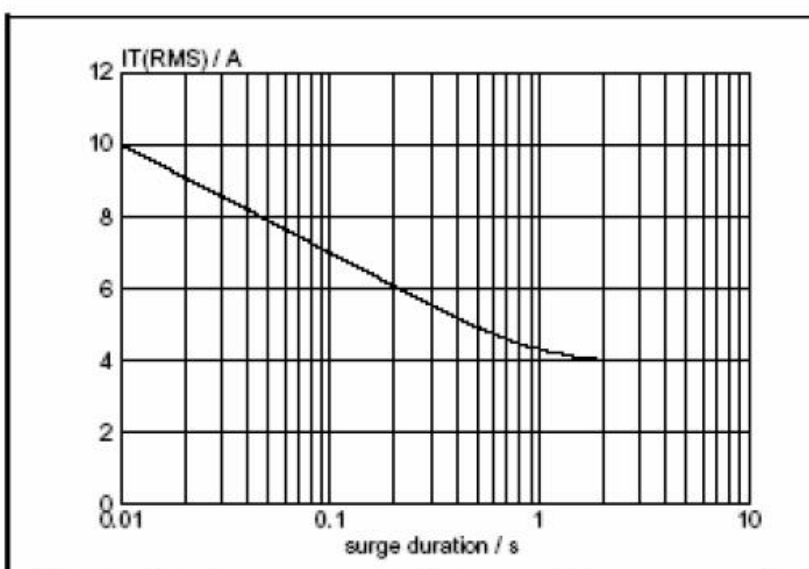


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, f = 50 Hz; $T_{mb} \leq 107°C$.

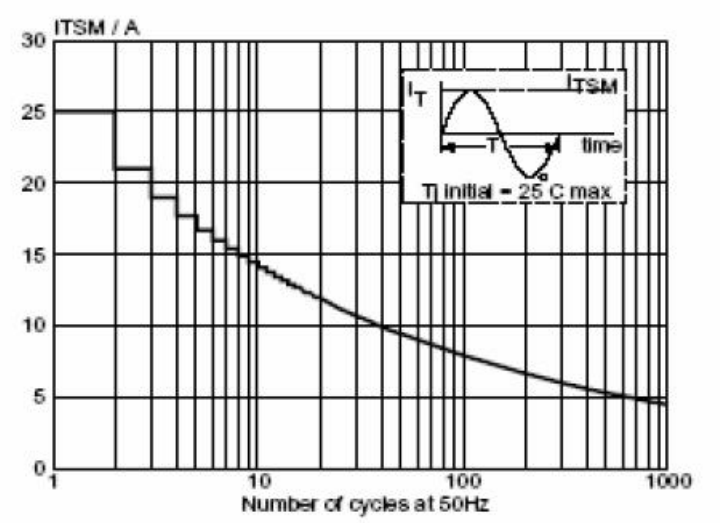


Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus number of cycles, for sinusoidal currents, f = 50 Hz.

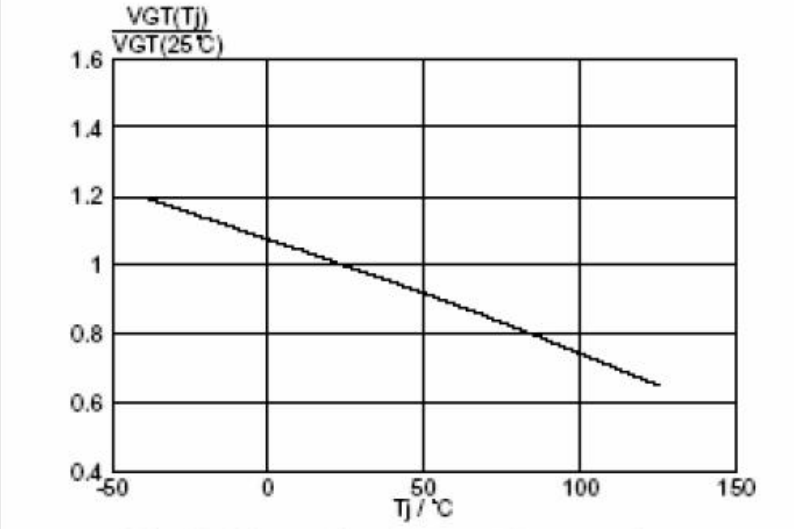


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)/V_{GT}(25°C)$, versus junction temperature T_j.

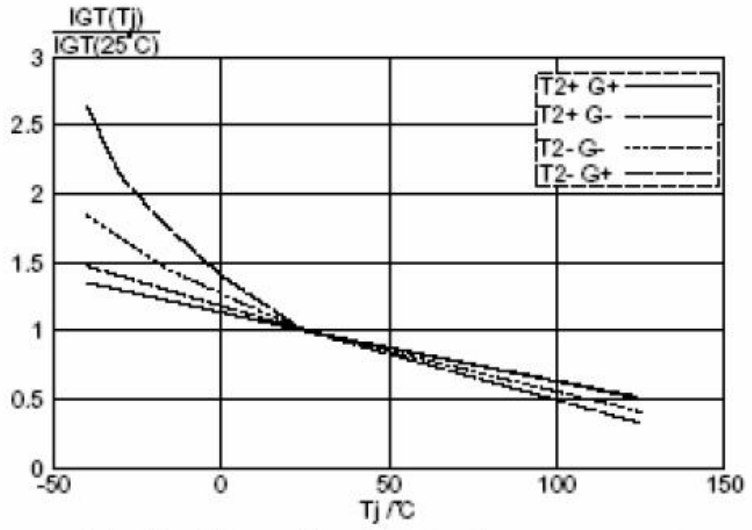


Fig.7. Normalised gate trigger current $I_{GT}(T_j)/ I_{GT}(25^{\circ}C)$, versus junction temperature T_j.

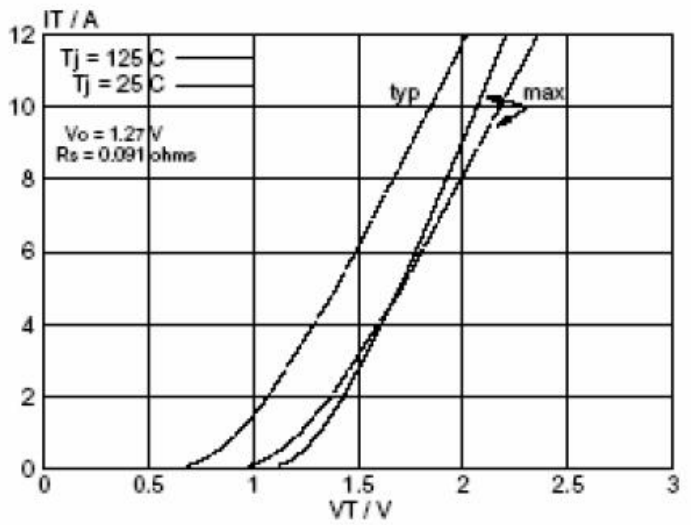


Fig.10. Typical and maximum on-state characteristic.

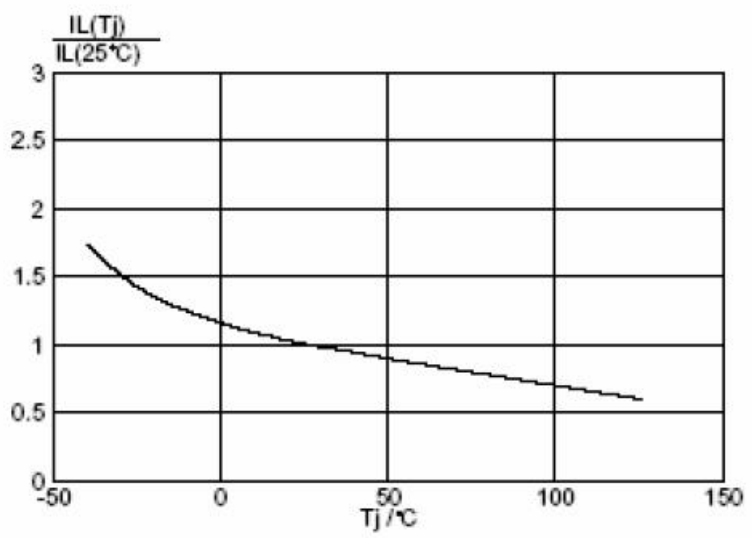


Fig.8. Normalised latching current $I_L(T_j)/ I_L(25^{\circ}C)$, versus junction temperature T_j.

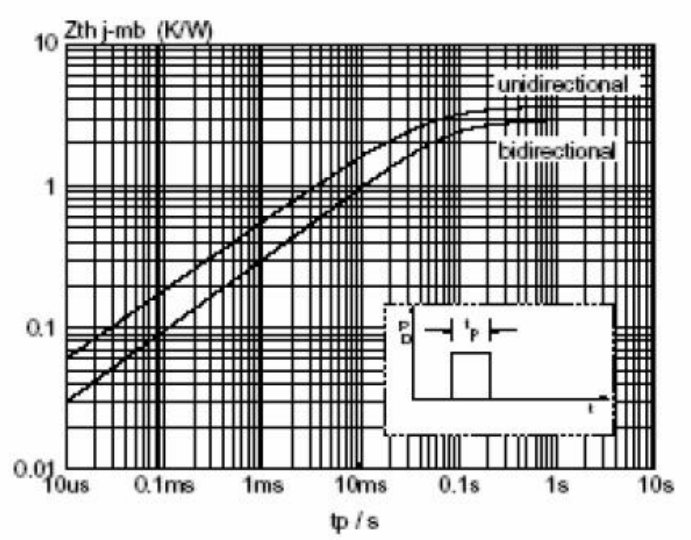


Fig.11. Transient thermal impedance $Z_{th\ j\text{-}mb}$, versus pulse width t_p.

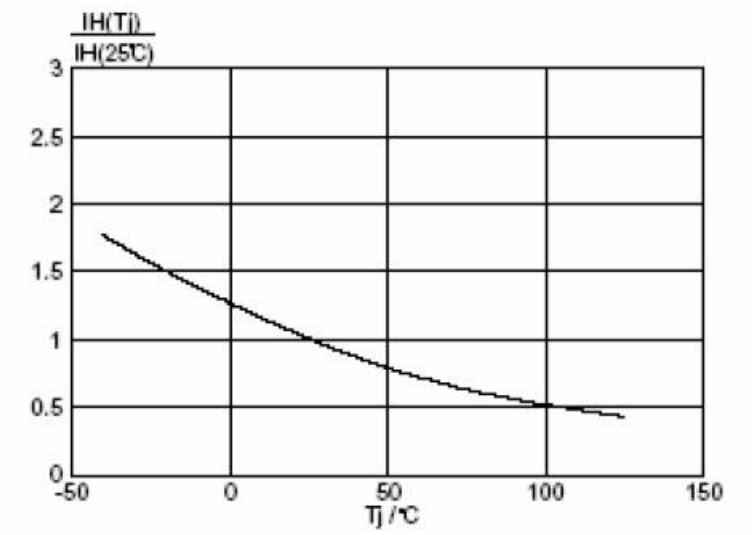


Fig.9. Normalised holding current $I_H(T_j)/ I_H(25^{\circ}C)$, versus junction temperature T_j.

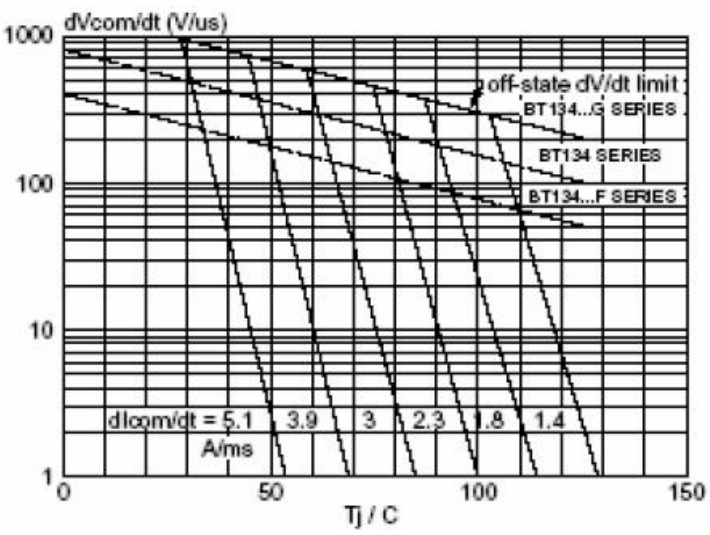


Fig.12. Typical commutation dV/dt versus junction temperature, parameter commutation dI_T/dt. The triac should commutate when the dV/dt is below the value on the appropriate curve for pre-commutation dI_T/dt.