

GENERAL DESCRIPTION

QUICK REFERENCE DATA

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.

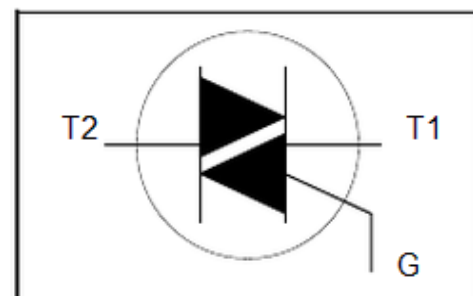
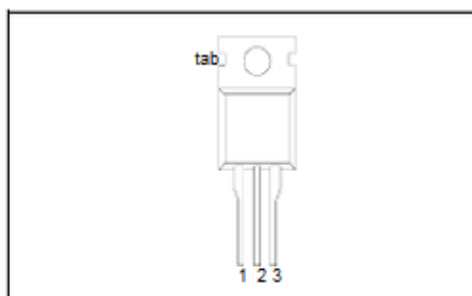
SYMBOL	PARAMETER	MAX.	UNIT
		600 600F	
V_{DRM}	Repetitive peak off-state voltages	600	V
$I_{T(RMS)}$	RMS on-state current	4	A
I_{TSM}	Non-repetitive peak on-state current	25	A

PINNING - TO220AB

PIN CONFIGURATION

SYMBOL

PIN	DESCRIPTION
1	main terminal 1
2	main terminal 2
3	gate
tab	main terminal 2



LIMITING VALUES

Limiting values in accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{DRM}	Repetitive peak off-state voltages		-	600 ¹	V
$I_{T(RMS)}$	RMS on-state current	full sine wave; $T_{mb} \leq 107\text{ }^{\circ}\text{C}$	-	4	A
I_{TSM}	Non-repetitive peak on-state current	full sine wave; $T_j = 25\text{ }^{\circ}\text{C}$ prior to surge	-	25	A
		$t = 20\text{ ms}$	-	27	A
		$t = 16.7\text{ ms}$	-	3.1	A ² s
		$t = 10\text{ ms}$	-		
I^2t	I^2t for fusing	$I_{TM} = 6\text{ A}$; $I_G = 0.2\text{ A}$;			
dl_T/dt	Repetitive rate of rise of on-state current after triggering	$dl_G/dt = 0.2\text{ A}/\mu\text{s}$			
		T2+ G+	-	50	A/ μs
		T2+ G-	-	50	A/ μs
		T2- G-	-	50	A/ μs
		T2- G+	-	10	A/ μs
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	$^{\circ}\text{C}$
T_j	Operating junction temperature		-	125	$^{\circ}\text{C}$

¹ Although not recommended, off-state voltages up to 800V may be applied without damage, but the triac may switch to the on-state. The rate of rise of current should not exceed 3 A/ μs .

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R_{thj-mb}	Thermal resistance junction to mounting base	full cycle	-	-	3.0	K/W
		half cycle	-	-	3.7	K/W
R_{thj-a}	Thermal resistance junction to ambient	in free air	-	60	-	K/W

STATIC CHARACTERISTICS $T_j = 25\text{ °C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.		UNIT
I_{GT}	Gate trigger current	BT136- $V_D = 12\text{ V}; I_T = 0.1\text{ A}$	-	-F	
		T2+ G+	-	5	35	25	mA
		T2+ G-	-	8	35	25	mA
		T2- G-	-	11	35	25	mA
		T2- G+	-	30	70	70	mA
I_L	Latching current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$	-	-	-	-	
		T2+ G+	-	7	20	20	mA
		T2+ G-	-	16	30	30	mA
		T2- G-	-	5	20	20	mA
		T2- G+	-	7	30	30	mA
I_H	Holding current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$	-	5	15	15	mA
V_T	On-state voltage	$I_T = 5\text{ A}$	-	1.4	1.70		V
V_{GT}	Gate trigger voltage	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$	-	0.7	1.5		V
		$V_D = 400\text{ V}; I_T = 0.1\text{ A};$ $T_j = 125\text{ °C}$	0.25	0.4	-		V
I_D	Off-state leakage current	$V_D = V_{DRM(max)};$ $T_j = 125\text{ °C}$	-	0.1	0.5		mA

DYNAMIC CHARACTERISTICS $T_j = 25\text{ °C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.		TYP.	MAX.	UNIT
dV_D/dt	Critical rate of rise of off-state voltage	BT136- $V_{DM} = 67\% V_{DRM(max)};$ $T_j = 125\text{ °C};$ exponential waveform; gate open circuit	100		V/μs
dV_{com}/dt	Critical rate of change of commutating voltage	$V_{DM} = 400\text{ V}; T_j = 95\text{ °C};$ $I_{T(RMS)} = 4\text{ A};$ $di_{com}/dt = 1.8\text{ A/ms};$ gate open circuit	-	-	50	-	V/μs
t_{gt}	Gate controlled turn-on time	$I_{TM} = 6\text{ A}; V_D = V_{DRM(max)};$ $I_G = 0.1\text{ A}; di_G/dt = 5\text{ A/μs}$	-	-	2	-	μs

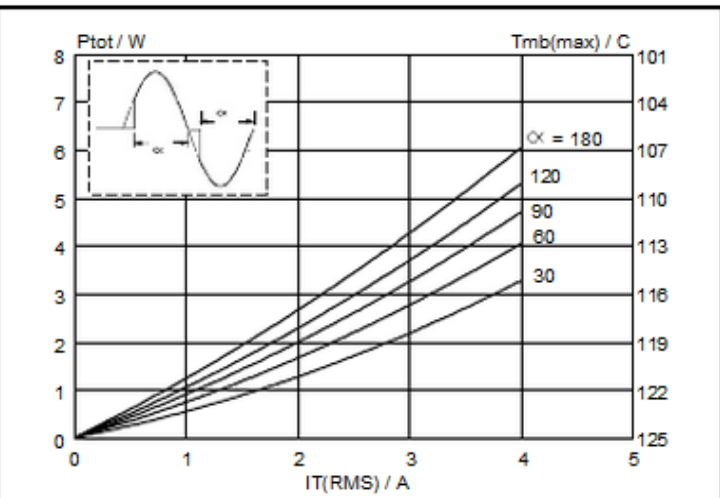


Fig.1. Maximum on-state dissipation, P_{tot} versus rms on-state current, $I_{T(RMS)}$, where α = conduction angle.

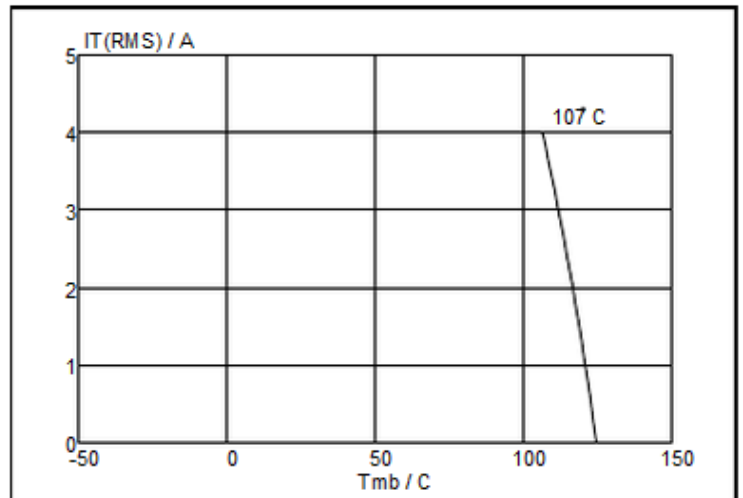


Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb} .

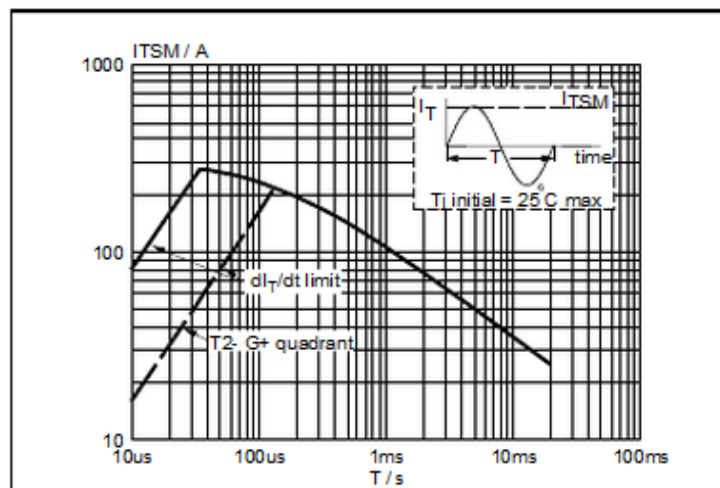


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus pulse width t_p , for sinusoidal currents, $t_p \leq 20$ ms.

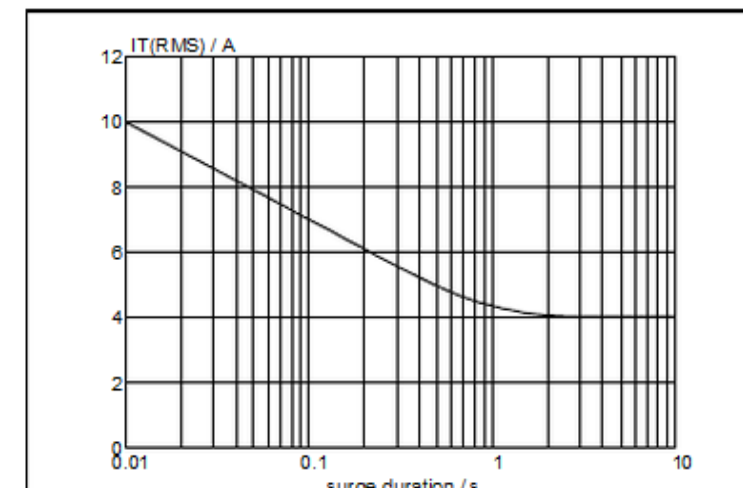


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, $f = 50$ Hz; $T_{mb} \leq 107$ C.

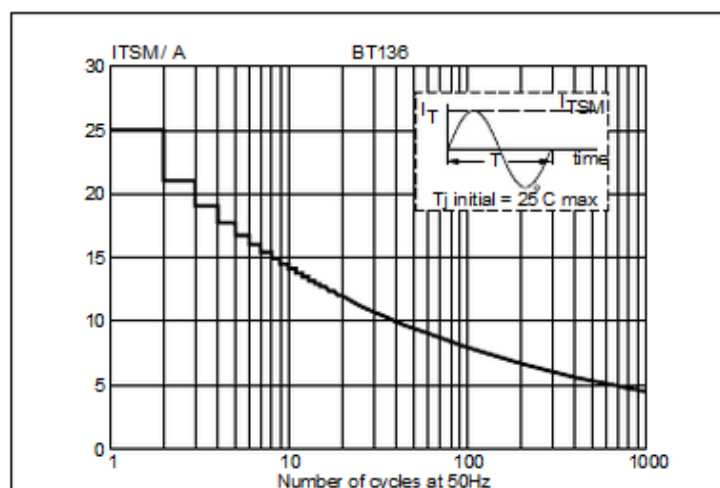


Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus number of cycles, for sinusoidal currents, $f = 50$ Hz.

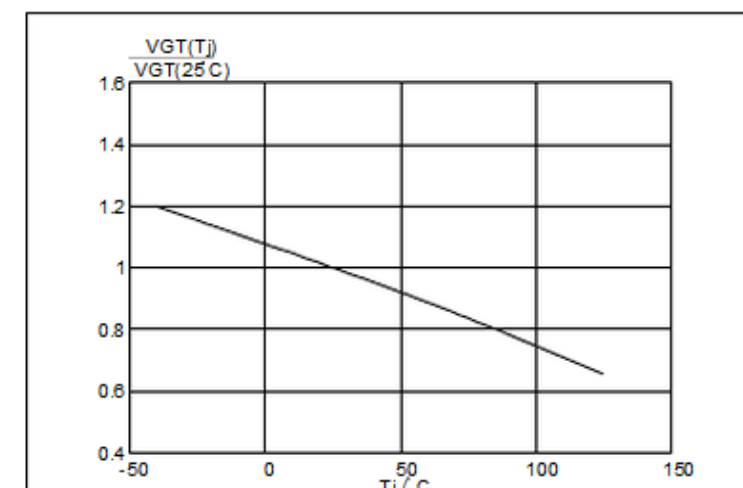


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j) / V_{GT}(25 C)$, versus junction temperature T_j .