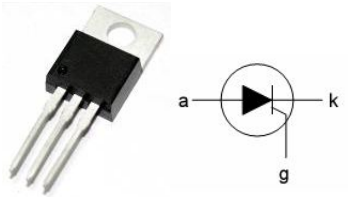
BT153

Thyristors

DRAWING



K A G

General Description

- Package: TO-220AB
- Glass passivated thyristors in a plastic envelope,Intended for use in applications requiring high bidirectional blocking voltage capability and high thermal cycling performance.Typical applications include motor control ,industrial and domestic lighting,heating and static switching.

Limiting Values

Limiting values in accordance with the absolute Maximum System(IEC134)

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V_{DRM},V_{RRM}	Repetitive peak off-state Voltages			600	V
$I_{T(AV)}$	Average on-state current	half sine wave		18	A
$I_{T(RMS)}$	RMS on-state current	all conduction angles		28	A
I_{TSM}	Non-repetitive peak on-state current	half sine wave,tp=8.3ms		300	A
I^2T	I^2T for fusing	t=10ms		280	A^2S
I_{GM}	Peak gate current	t=20us		5	A
P_{GM}	Peak gate power			20	W
$P_{G(AV)}$	Average gate power			0.5	W
T_{STG}	Storage temperature		-40	150	℃
Tj	Operating junction temperature		-40	110	℃

Thermal Resistances

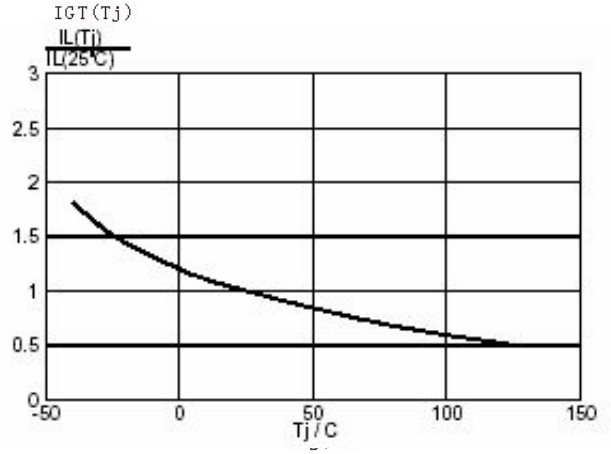
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Rthj-mb	Thermal resistance junction to mounting base				1.5	K/W
Rthj-a	Thermal resistance junction to ambient			62.5		K/W

Static Characteristics

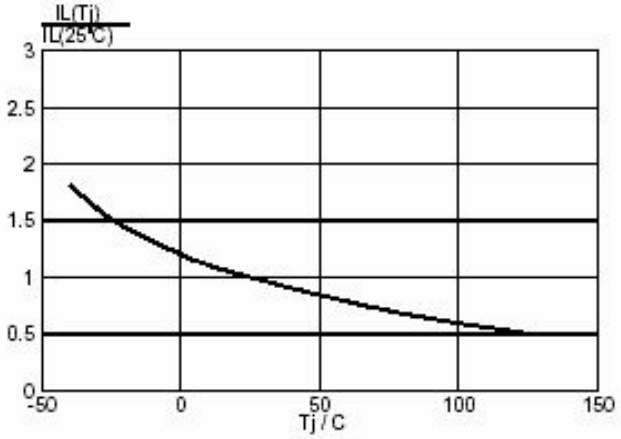
Tj=25℃ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
I_{GT}	Gate trigger current	V_D=6V, R_L=100Ω		7	20	mA
V_{GT}	Gate trigger voltage	V_D=12V, R_L=100Ω		0.7	0.8	V
I_H	Holding current	I_T=100mA, Gate Open		20	70	mA
dv/dt	Critical rate of rise or off-state voltage	V_{DM}=67%V_{DRM}(MAX), Gate Open, Tj=100℃	400	500		V/us
Dit/dt	Repetitive rate of rise of on-state current after triggering	I_{TM}=20A;IG=50mA;Dig/dt=50mA/us			150	A/us
I_H	Holding current	I_T=0.2A,I_{GT}=30mA		20	70	mA
V_{TM}	On-state voltage	I_T=24A		_	1.60	V
V_{GT}	Gate trigger voltage	V_D=6V;R_L=100Ω		0.7	0.8	V
I_D,I_R	Off-state leakage current	V_D=$V_{DRM(MAX)}$;V_R=$V_{RRM(MAX)}$;TJ=110℃		_	1.2	mA

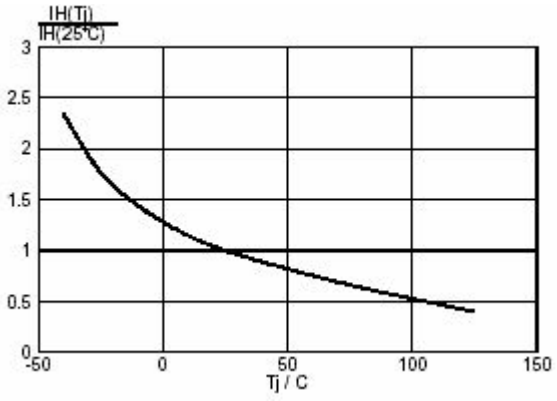
Typical Characteristics



IGT- TJ



IL- TJ



IH- TJ

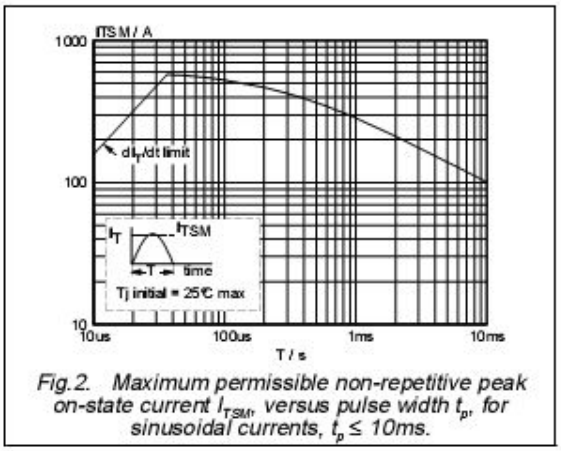


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus pulse width t_p, for sinusoidal currents, $t_p \leq 10ms$.

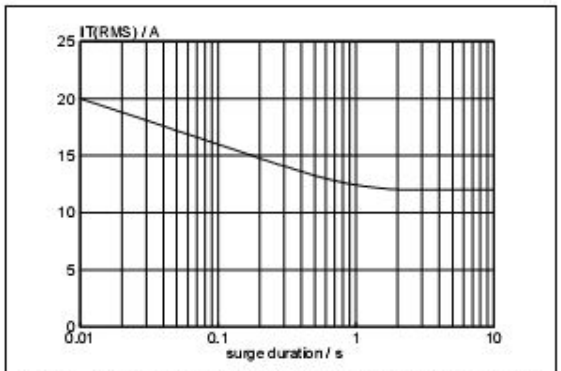


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, f = 50 Hz; $T_{mb} \leq 109°C$.

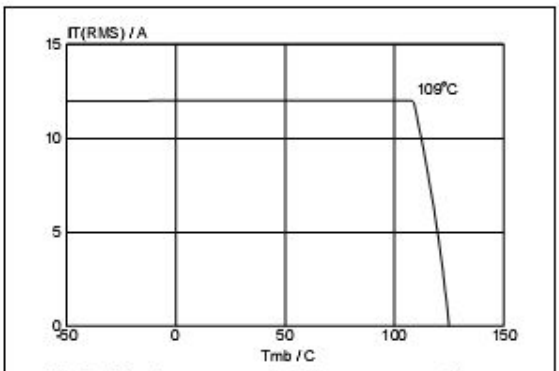


Fig.3. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb}.

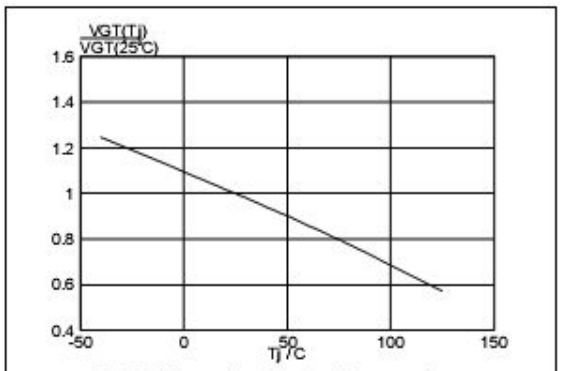


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j) / V_{GT}(25°C)$, versus junction temperature T_j.

Mechanical Dimensions