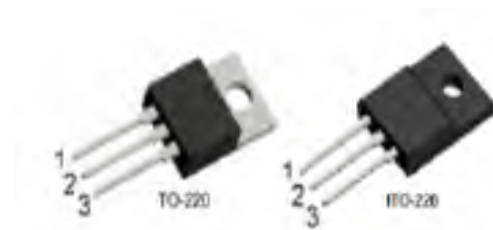
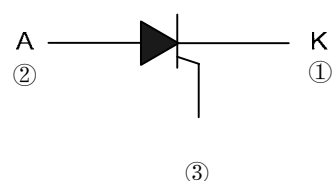


**DESCRIPTION:**

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.

**Ordering Information**

Part No.	Package	Packing
BT153-600R	TO-220	50pcs / Tube
BT153-800R	TO-220	50pcs / Tube
BT153F-600R	ITO-220	50pcs / Tube
BT153F-800R	ITO-220	50pcs / Tube

Symbol**ABSOLUTE MAXIMUM RATINGS**

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	°C
Operating junction temperature range		T_j	-40-125	°C
Repetitive peak off-state voltage($T_j=25^{\circ}\text{C}$)		V_{DRM}	600/800	V
Repetitive peak reverse voltage($T_j=25^{\circ}\text{C}$)		V_{RRM}	600/800	V
RMS on-state current	ITO-220(Ins) ($T_C=87^{\circ}\text{C}$)	$I_{T(RMS)}$	20	A
	TO-220(Ins) ($T_C=105^{\circ}\text{C}$)			



20A SCR

BT153 Series R

Non repetitive surge peak on-state current (tp=10ms)	I_{TSM}	250	A
I^2t value for fusing (tp=10ms)	I^2t	312.5	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	dI/dt	50	$A/\mu s$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS ($T_j=25^\circ C$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V$ $R_L=33\Omega$	-	-	25	mA
V_{GT}		-	-	1.0	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ C$ $R_L=3.3K\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	60	mA
I_H	$I_T=500mA$	-	-	40	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$	200	-	-	$V/\mu s$

STATIC CHARACTERISTICS

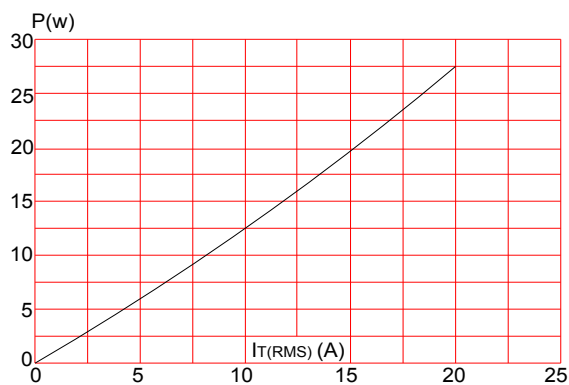
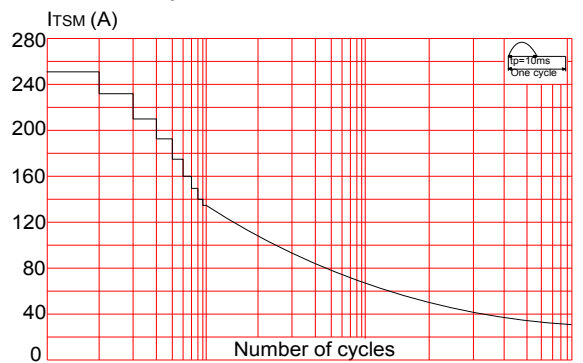
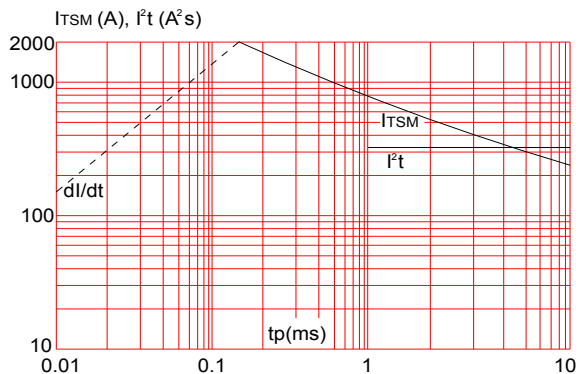
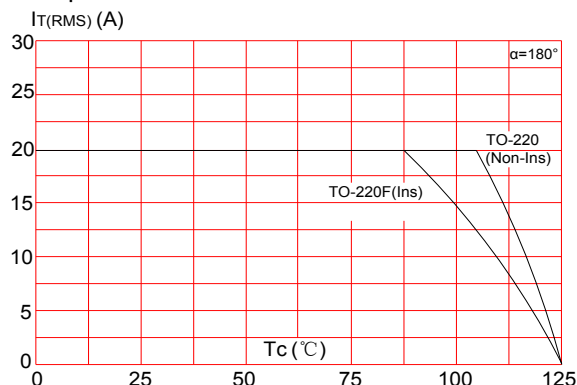
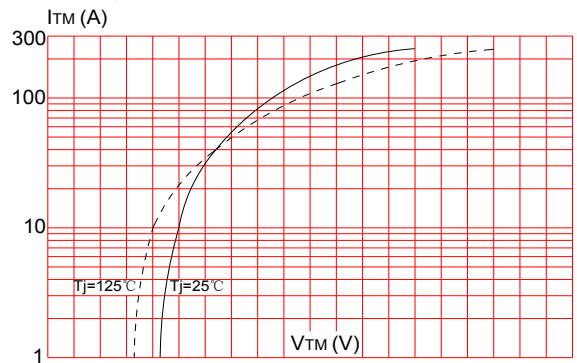
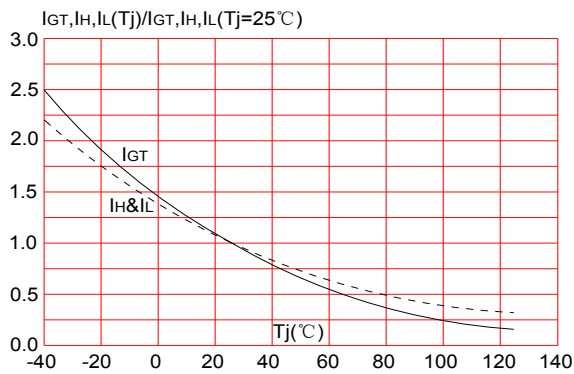
Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=40A$ $tp=380\mu s$	$T_j=25^\circ C$	1.6	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	μA
I_{RRM}		$T_j=125^\circ C$	4	mA

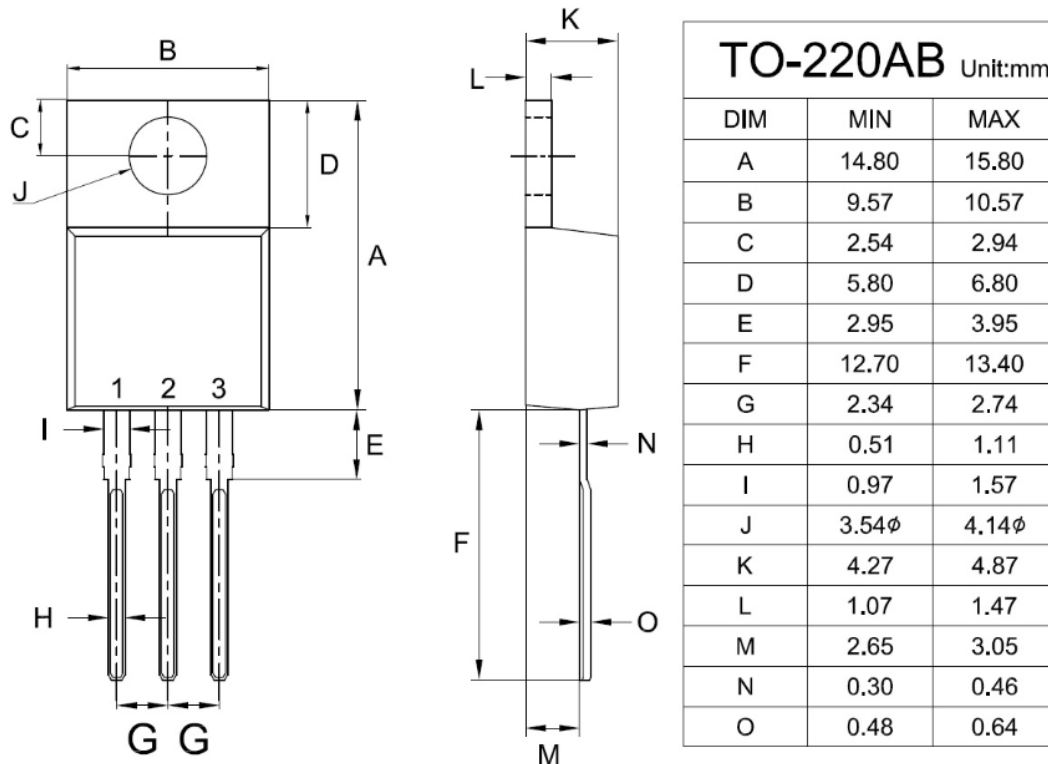
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	ITO-220(Ins)	2.2	$^\circ C/W$
		TO-220(Non-Ins)	1.05	



TYPICAL CHARACTERISTICS

FIG.1: Maximum power dissipation versus RMS on-state current**FIG.3:** Surge peak on-state current versus number of cycles**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t ($di/dt < 50A/\mu s$)**FIG.2:** RMS on-state current versus case temperature**FIG.4:** On-state characteristics (maximum values)**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

**TO-220 Mechanical Drawing****ITO-220 Mechanical Drawing**