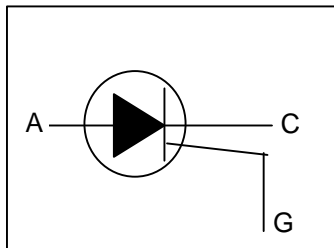
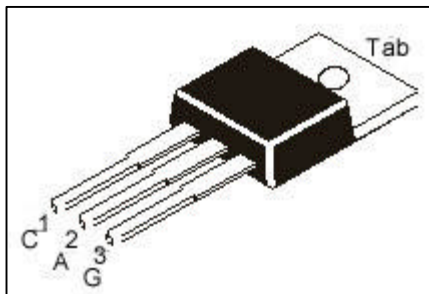


THYRISTORS

BT151

TO-220 Plastic Package



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

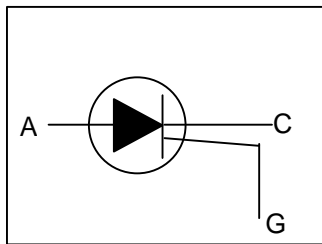
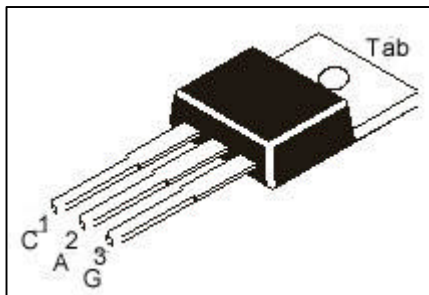
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITION	VALUE		UNIT
		BT151-	500	650	
Repetitive Peak Off State Voltage	V_{DRM}, V_{RRM}		*500	*650	V
Average On State Current	$I_{T(AV)}$	half sine wave, $T_{mb} \leq 109^{\circ}\text{C}$	7.5		A
RMS On State Current	$I_{T(RMS)}$	all conduction angles	12		A
Non Repetitive Peak On State Current	I_{TSM}	half sine wave, $T_J=25^{\circ}\text{C}$ prior to surge $t=10\text{ms}$	100		A
		$t=8.3\text{ms}$	110		A
I^2t for Fusing	I^2t	$t=10\text{ms}$	50		A^2s
Repetitive Rate of Rise of On State Current After Triggering	dI_T/dt	$I_{TM}=20\text{A}, I_G=50\text{mA},$ $dI_G/dt=50\text{mA}/\mu\text{s}$	50		$\text{A}/\mu\text{s}$
Peak Gate Current	I_{GM}		2.0		A
Peak Gate Voltage	V_{GM}		5.0		V
Peak Reverse Gate Voltage	V_{RGM}		5.0		V
Peak Gate Power	P_{GM}		5.0		W
Average Gate Power	$P_{G(AV)}$	Over any 20ms period	0.5		W
Storage Temperature	T_{stg}		- 40 to +150		$^{\circ}\text{C}$
Operating Junction Temperature	T_J		125		$^{\circ}\text{C}$

THERMAL RESISTANCE

Junction to Mounting Base	$R_{th(j-mb)}$		1.3 max	K/W
Junction to Ambient	$R_{th(j-a)}$	in free air	60 typ	K/W

*Although not recommended, off state voltage upto 800V may be applied without damage, but the thyristor may switch to the on state. The rate of rise of current should not exceed 15A/ms



ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$ unless specified otherwise)

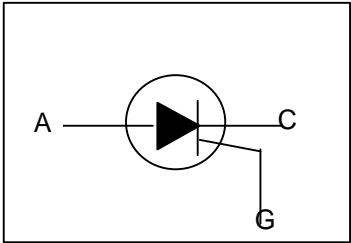
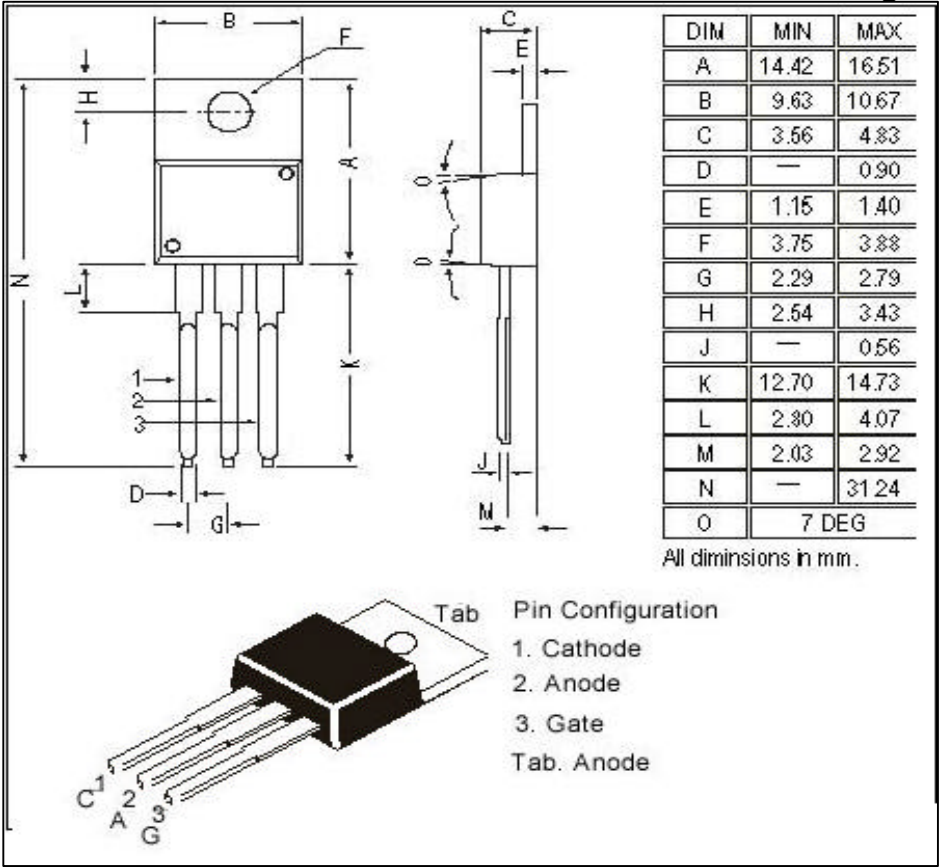
PARAMETER	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Gate Trigger Current	I_{GT}	$V_D=12\text{V}$, $I_T=0.1\text{A}$		15	mA
Latching Current	I_L	$V_D=12\text{V}$, $I_{GT}=0.1\text{A}$		40	mA
Holding Current	I_H	$V_D=12\text{V}$, $I_{GT}=0.1\text{A}$		20	mA
On State Voltage	V_T	$I_T=23\text{A}$		1.75	V
Gate Trigger Voltage	V_{GT}	$V_D=12\text{V}$, $I_T=0.1\text{A}$ $V_D=V_{DRM}(\text{max})$, $I_T=0.1\text{A}$, $T_J=125^\circ\text{C}$	0.25	1.5	V V
Off State Leakage Current	I_D , I_R	$V_D=V_{DRM}(\text{max})$, $V_R=V_{RRM}(\text{max})$ $T_J=125^\circ\text{C}$		0.5	mA

DYNAMIC CHARACTERISTICS

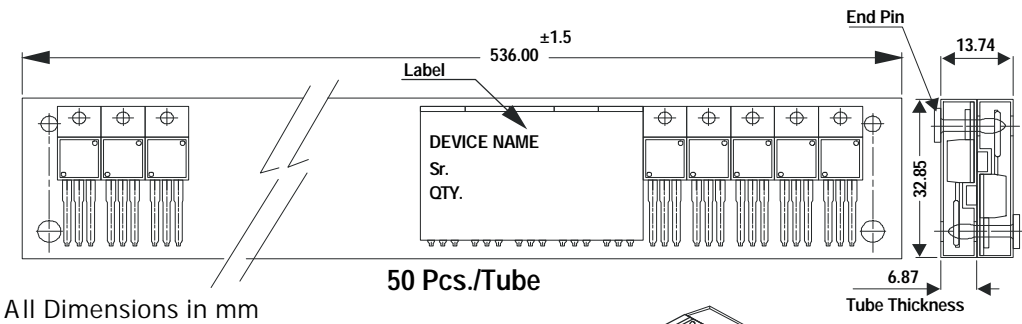
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Critical Rate of Rise of Off State Voltage	dV_D/dt	$V_{DM}=67\%$ $V_{DRM}(\text{max})$, $T_J=125^\circ\text{C}$, exponential waveform gate open circuit $R_{GK}=100\Omega$	50 200			V/ μs V/ μs
Gate Controlled Turn On time	t_{gt}	$I_{TM}=40\text{A}$, $V_D=V_{DRM}(\text{max})$, $I_G=0.1\text{A}$, $dI_G/dt=5\text{A}/\mu\text{s}$		2.0		μs
Circuit Commutated Turn Off time	t_q	$V_D=67\%$ $V_{DRM}(\text{max})$, $T_J=125^\circ\text{C}$, $I_{TM}=20\text{A}$, $V_R=25\text{V}$, $dI_{TM}/dt=30\text{A}/\mu\text{s}$, $dV_D/dt=50\text{V}/\mu\text{s}$, $R_{GK}=100\Omega$		70		μs

Marking	BT151-500 CDXX BT151 - 500	BT151-650 CDXX BT151 - 650
XX=Date Code		

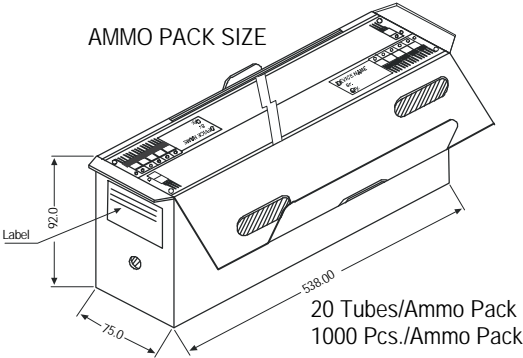
TO-220 Plastic Package



TO-220 Tube Packing



AMMO PACK SIZE



Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-220 /FP	200 pcs/polybag	396 gm/200 pcs	3" x 7.5" x 7.5"	1.0K	17" x 15" x 13.5"	16.0K	36 kgs
	50 pcs/tube	120 gm/50 pcs	3.5" x 3.7" x 21.5"	1.0K	19" x 19" x 19"	10.0K	29 kgs

Disclaimer

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