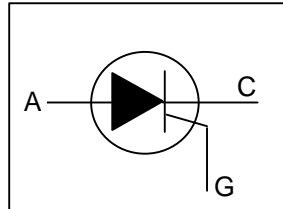
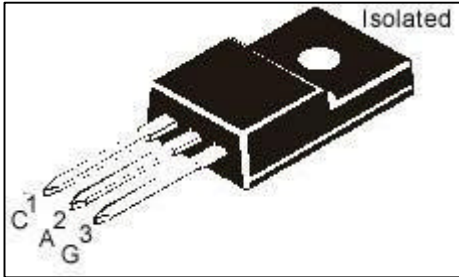


THYRISTORS

BT151X



TO-220FP Fully Isolated 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
			500	650	
		BT151X-	500	650	
Repetitive Peak Off State Voltage	V_{DRM}, V_{RRM}		*500	*650	V
Average On State Current	$I_T(AV)$	half sine wave, $T_{hs} \leq 87^\circ C$	5.7		A
RMS On State Current	$I_T(RMS)$	all conduction angles	9.0		A
Non Repetitive Peak On State Current	I_{TSM}	half sine wave, $T_j=25^\circ C$ prior to surge $t=10ms$ $t=8.3ms$	100		A
			110		A
			50		A^2s
I^2t for Fusing	I^2t	$t=10ms$	50		A^2s
Repetitive Rate Of Rise of On State Current After Triggering	di_T/dt	$I_{TM}=20A, I_G=50mA,$ $di_G/dt=50mA/\mu s$	50		$A/\mu s$
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		$^\circ C$
Operating Junction Temperature	T_j		125		$^\circ C$

ISOLATION LIMITING VALUE and CHARACTERISTIC ($T_{hs}=25^\circ C$ unless specified otherwise)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
R.M.S Isolation Voltage from all three terminals to external heatsink	V_{ISOL}	$f=50-60$ Hz; sinusoidal waveform; R.H. $\leq 65\%$; clean and dustfree			2500	V
Capacitance from T2 to external heatsink	C_{ISOL}	$f=1MHz$		10		pF

THERMAL RESISTANCE

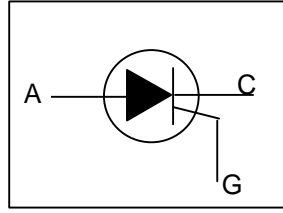
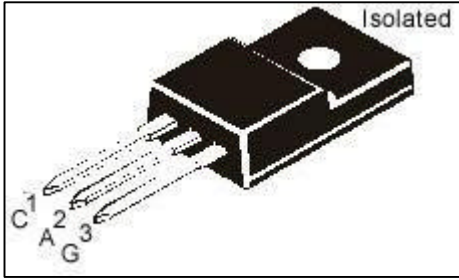
Junction to Heatsink	$R_{th(j-hs)}$	with heatsink compound	4.5 max	K/W
		without heatsink compound	6.5 max	K/W
Junction to Ambient	$R_{th(j-a)}$	in free air	55 typ	K/W

*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/ μs

THYRISTORS

BT151X

TO-220FP Fully Isolated Plastic Package



ELECTRICAL CHARACTERISTICS (T_J=25°C unless specified otherwise)

PARAMETER	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Gate Trigger Current	I _{GT}	V _D =12V, I _T =0.1A		15	mA
Latching Current	I _L	V _D =12V, I _{GT} =0.1A		40	mA
Holding Current	I _H	V _D =12V, I _{GT} =0.1A		20	mA
On State Voltage	V _T	I _T =23A		1.75	V
Gate Trigger Voltage	V _{GT}	V _D =12V, I _T =0.1A V _D =V _{DRM} (max), I _T =0.1A, T _J =125°C	0.25	1.5	V
Off State Leakage Current	I _D , I _R	V _D =V _{DRM} (max), V _R =V _{RRM} (max) T _J =125°C		0.5	mA

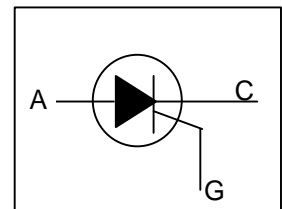
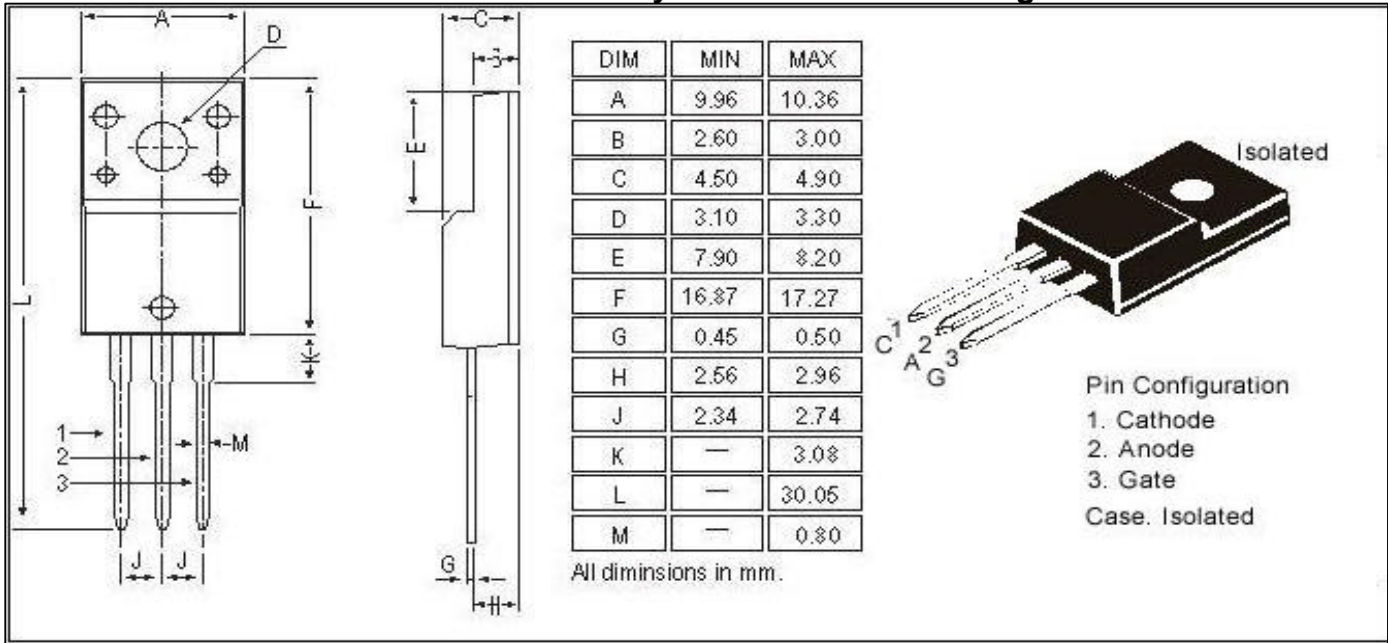
DYNAMIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Critical Rate of Rise of Off State Voltage	dV _D /dt	V _{DM} =67% V _{DRM} =max, T _J =125°C, exponential waveform gate open circuit R _{GK} =100Ω	50 200			V/μs V/μs
Gate Controlled Turn On time	t _{gt}	I _{TM} =40A, V _D =V _{DRM} (max), I _G =0.1A, dI _G /dt=5A/μs		2.0		μs
Circuit Commutated Turn Off time	t _q	V _{DM} =67% V _{DRM} =(max), T _J =125°C, I _{TM} =20A, V _R =25V, dI _{TM} /dt=30A/μs, dV _D /dt=50V/μs, R _{GK} =100Ω		70		μs

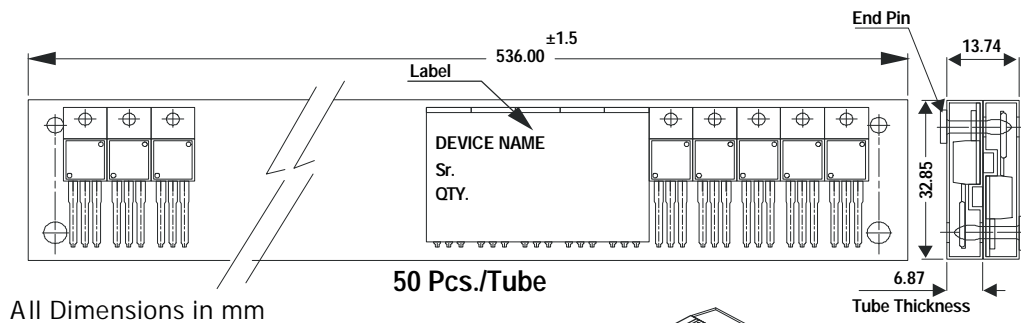
Marking	BT151X-500	BT151X-650
	CDXX	CDXX
	BT151X	BT151X
	- 500	- 650
XX=Date Code		

BT151XRev020103E

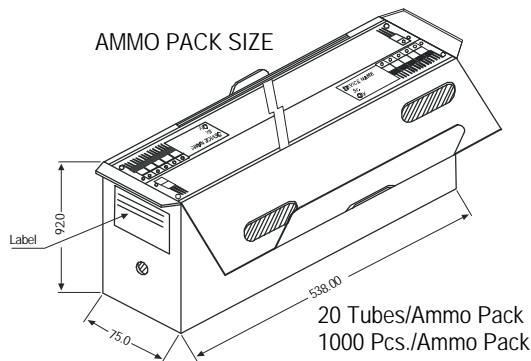
TO-220FP Fully Isolated Plastic Package



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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