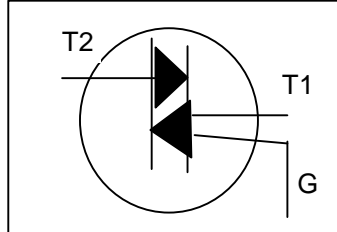
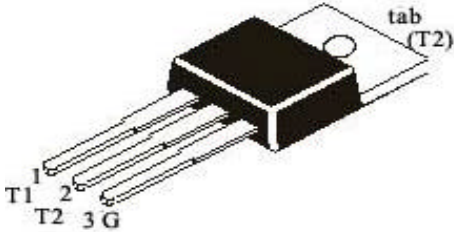


TRIAC

BTB06

**TO-220
Plastic Package**



Used as an ON/OFF Function in Application Such as Static Relays, Heating Regulation, Induction Motor Starting Circuits or for Phase Control in Light Dimmers, Motor Speed Controllers---

ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	VALUE	UNIT
V_{DRM}, V_{RRM}	Repetitive Peak Off State Voltage	600	V
$I_{T(RMS)}$	RMS on state current (full sine wave)	$T_c=110^\circ\text{C}$ 6.0	A
I_{TSM}	Non repetitive surge peak on state current (full cycle, T_j initial= 25°C)	F=50Hz $t=20\text{ms}$	60
		F=60Hz $t=16.7\text{ms}$	63
I_t^2	I_t^2 Value for fusing	$t_p=10\text{ms}$ 21	A^2s
di/dt	Critical rate of rise of on state current $I_G=2 \times I_{GT}$, $t_r \leq 100\text{ns}$	F=120Hz $T_j=125^\circ\text{C}$ 50	$\text{A}/\mu\text{s}$
I_{GM}	Peak gate current	$t_p=20\mu\text{s}$ $T_j=125^\circ\text{C}$ 4.0	A
$P_{G(AV)}$	Average gate power dissipation	$T_j=125^\circ\text{C}$ 1.0	W
T_{stg}	Storage junction temperature range	- 40 to +150	$^\circ\text{C}$
T_j	Operating junction temperature range	- 40 to +125	$^\circ\text{C}$

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

SNUBBERLESS™ and LOGIC LEVEL (3 Quadrants)

BTB06

SYMBOL	TEST CONDITION	Quadrant		TW	SW	CW	BW	UNIT
$I_{GT(1)}$	$V_D=12\text{V}, R_L=30\Omega$	I - II - III	MAX	5	10	35	50	mA
V_{GT}		I - II - III	MAX	1.3				V
V_{GD}	$V_D=V_{DRM}, R_L=3.3\text{k}\Omega, T_j=125^\circ\text{C}$	I - II - III	MIN	0.2				V
$I_H(2)$	$I_T=100\text{mA}$		MAX	10	15	35	50	mA
I_L	$I_G=1.2 I_{GT}$	I - III	MAX	10	25	50	70	mA
		II	MAX	15	30	60	80	mA
$dV/dt(2)$	$V_D=67\% V_{DRM}$ gate open $T_j=125^\circ\text{C}$		MIN	20	40	400	1000	$\text{V}/\mu\text{s}$
$(di/dt)_c(2)$	$(dV/dt)_c=0.1 \text{ V}/\mu\text{s}$ $T_j=125^\circ\text{C}$		MIN	2.7	3.5	-	-	A/ms
	$(dV/dt)_c=10 \text{ V}/\mu\text{s}$ $T_j=125^\circ\text{C}$		MIN	1.2	2.4	-	-	A/ms
	Without snubber $T_j=125^\circ\text{C}$		MIN	-	-	3.5	5.3	A/ms

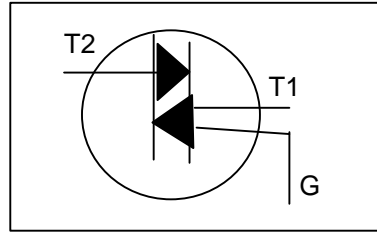
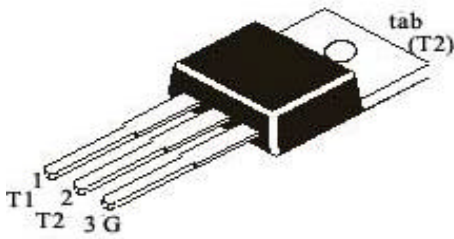
THERMAL RESISTANCE

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th(j-c)}$	Junction to case (AC)	1.8	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient	60	$^\circ\text{C}/\text{W}$

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**TO-220
Plastic Package**



ELECTRICAL CHARACTERISTICS (T_j=25°C specified otherwise)

STANDARD (4 Quadrants)

BTB06

SYMBOL	TEST CONDITION	Quadrant		C	B	UNIT
I _G (1)	V _D =12V, R _L =30Ω	I - II - III	MAX	25	50	mA
		IV		50	100	mA
V _{GT}		ALL	MAX	1.3		V
V _{GD}	V _D =V _{DRM} , R _L =3.3kΩ, T _j =125°C	ALL	MIN	0.2		V
I _H (2)	I _T =500mA		MAX	25	50	mA
I _L	I _G =1.2 I _{GT}	I - III - IV	MAX	40	50	mA
		II	MAX	80	100	mA
dV/dt (2)	V _D =67% V _{DRM} gate open T _j =125°C		MIN	200	400	V/μs
(di/dt) _C (2)	(di/dt) _C =2.7 A/ms T _j =125°C		MIN	5	10	V/μs

STATIC CHARACTERISTICS

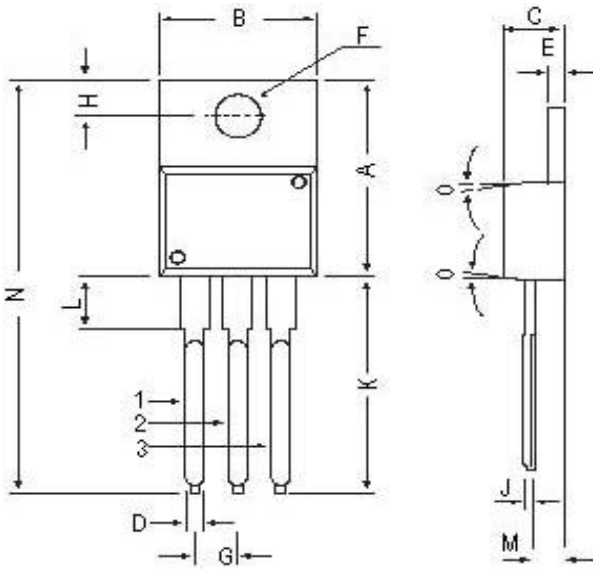
SYMBOL	TEST CONDITION			VALUE	UNIT
V _T (2)	I _{TM} =5.5A, t _p =380μs	T _J =25°C	MAX	1.55	V
V _{to} (2)	Threshold Voltage	T _J =125°C	MAX	0.85	V
R _d (2)	Dynamic Resistance	T _J =125°C	MAX	60	mΩ
I _{DRM} I _{RDM}	V _{DRM} =V _{RDM}	T _J =25°C	MAX	5	μA
		T _J =125°C	MAX	1	mA

**NOTE:- (1) Minimum I_{GT} is guaranteed at 5% of I_{GT} max
(2) For both polarities of A2 referenced to A1**

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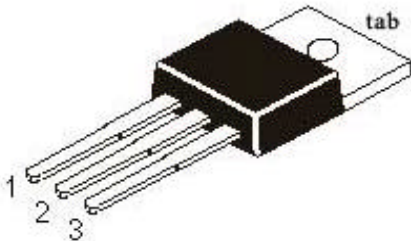
BTB06
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TO-220 Plastic Package



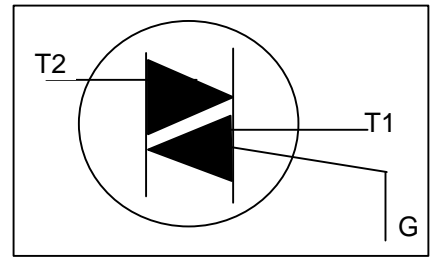
DIM	MIN	MAX
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D	—	0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J	—	0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N	—	31.24
O	7 DEG	

All dimensions in mm.

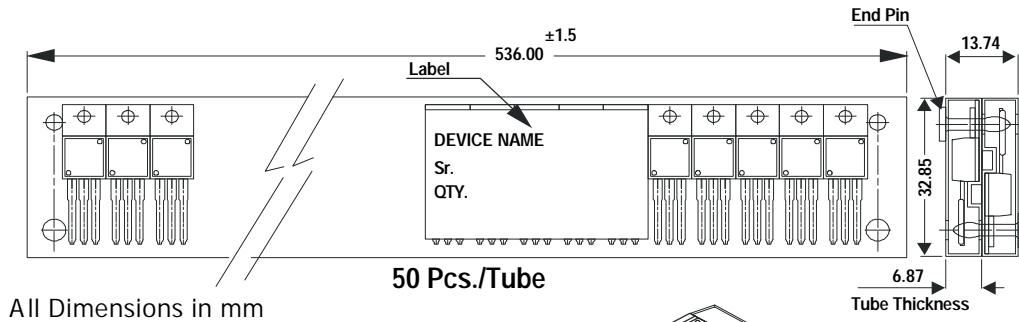


Pin Configuration

- 1. Main Terminal 1
- 2. Main Terminal 2
- 3. Gate
- tab Main Terminal 2



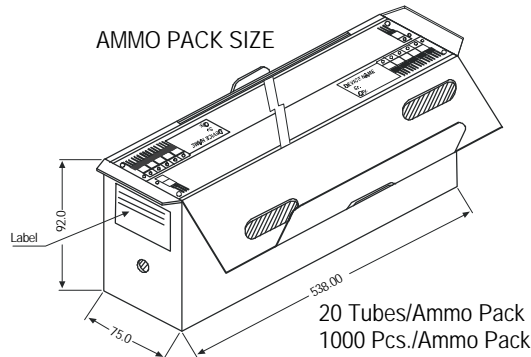
TO-220 Tube Packing



50 Pcs./Tube

All Dimensions in mm

AMMO PACK SIZE



20 Tubes/Ammo Pack
 1000 Pcs./Ammo Pack

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-220	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

BTB06Rev030806E

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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