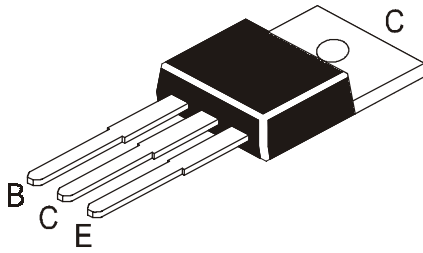


NPN/PNP PLASTIC POWER TRANSISTORS

**BDX33, 33A, 33B, 33C, 33D
BDX34, 34A, 34B, 34C, 34D**



**TO-220
Plastic Package**

Power Darlington for Linear Switching Application

ABSOLUTE MAXIMUM RATINGS

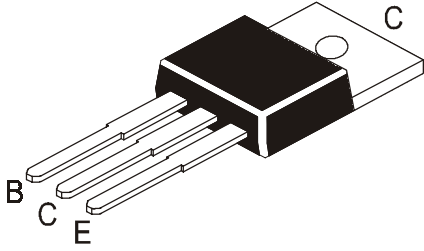
DESCRIPTION	SYMBOL	BDX33 BDX34	BDX33A BDX34A	BDX33B BDX34B	BDX33C BDX34C	BDX33D BDX34D	UNIT
Collector -Emitter Voltage	V_{CEO}	45	60	80	100	120	V
Collector -Base Voltage	V_{CBO}	45	60	80	100	120	V
Emitter -Base Voltage	V_{EBO}			5.0			V
Collector Current - Continuous	I_C			10			A
Peak	I_{CM}			15			A
Base Current	I_B			0.25			A
Device Dissipation @ $T_c=25^\circ C$	P_D			70			W
Derate Above $25^\circ C$				0.56			W/ $^\circ C$
Operating And Storage Junction	T_j, T_{stg}			-65 to +150			$^\circ C$
Temperature Range							
THERMAL RESISTANCE							
Junction to Case	$R_{th(j-c)}$			1.78			$^\circ C/W$

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ C$ Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	BDX33 BDX34	BDX33A BDX34A	BDX33B BDX34B	BDX33C BDX34C	BDX33D BDX34D	UNIT
Breakdown (sus) Voltage	$V_{CEO(sus)}^*$	$I_C=100mA, I_B=0$	>45	>60	>80	>100	>120	V
	$V_{CER(sus)}^*$	$I_C=100mA, R_{BE}=100 W$	>45	>60	>80	>100	>120	V
	$V_{CEX(sus)}^*$	$I_C=100mA, V_{BE}=1.5V$	>45	>60	>80	>100	>120	V
Collector-Cut off Current	I_{CEO}	$V_{CE}=1/2rated, V_{CEO}, I_B=0$	<0.5	<0.5	<0.5	<0.5	<0.5	mA
		$T_c=100^\circ C, V_{CE}=1/2rated, V_{CEO}, I_B=0$	<10	<10	<10	<10	<10	mA
	I_{CBO}	$I_E=0, V_{CB}=Rated, V_{CBO}, T_c=100^\circ C$	<1	<1	<1	<1	<1	mA
		$I_E=0, V_{CB}=Rated, V_{CBO}, T_c=100^\circ C$	<5	<5	<5	<5	<5	mA

NPN/PNP PLASTIC POWER TRANSISTORS

**BDX33, 33A, 33B, 33C, 33D
BDX34, 34A, 34B, 34C, 34D**



**TO-220
Plastic Package**

ELECTRICAL CHARACTERISTICS (Tc=25°C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	BDX33	BDX33A	BDX33B	BDX33C	BDX33D	UNIT
			BDX34	BDX34A	BDX34B	BDX34C	BDX34D	
Emitter-Cut off Current	I_{EBO}	$V_{EB}=5V, I_C=0$	<10	<10	<10	<10	<10	mA
Collector Emitter Saturation Voltage	$V_{CE(Sat)}^*$	$I_C=4A, I_B=8mA$	<2.5	<2.5				V
Base Emitter on Voltage	$V_{BE(on)}^*$	$I_C=3A, I_B=6mA$			<2.5	<2.5	<2.5	V
DC Current Gain	h_{FE}^*	$I_C=4A, V_{CE}=3V$	<2.5V	<2.5				V
		$I_C=3A, V_{CE}=3V$			<2.5	<2.5	<2.5	V
Diode Forward Voltage	V_F	$I_C=4A, V_{CE}=3V$	>750	>750	-	-	-	
		$I_C=3A, V_{CE}=3V$			>750	>750	>750	
SECOND BREAKDOWN					<4			V
Secondbreakdown Collector Current With Base Forward Biased (non-repetitive)	$I_{S/b}^{**}$	$V_{CE}=25V,$ BDX33 Series			>2.8			A
		$V_{CE}=20V,$ BDX34 Series			>3.5			A
		$V_{CE}=36V,$ BDX33 Series			>1.0			A
		$V_{CE}=33V,$ BDX34 Series			>1.0			A

ELECTRICAL CHARACTERISTICS (Tc=25°C Unless Otherwise Specified)

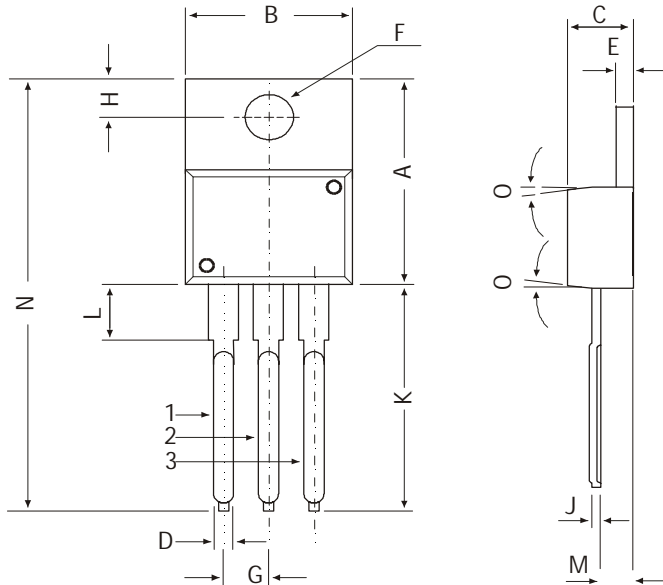
DESCRIPTION	SYMBOL	TEST CONDITION	VALUE		UNIT
			min	max	
DYNAMIC CHARACTERISTICS					
Small- Signal Current Gain	$ h_{fe} $	$I_C=1A, V_{CE}=5V,$ $f=1MHz$		1000	
Output Capacitance	C_{ob}	$V_{CB}=10V, I_E=0,$ $f=1MHz$			
			BDX33 series		200
		BDX34 series		300	
Transition Frequency	f_T	$V_{CE}=5V, I_C=1A,$ $f=1MHz$ ALL		3.0	MHZ

*Pulse Test:- Pulse Width<300µs, Duty Cycle=<2%

**Pulse Test non- repetitive : Pulse Width=0.25s

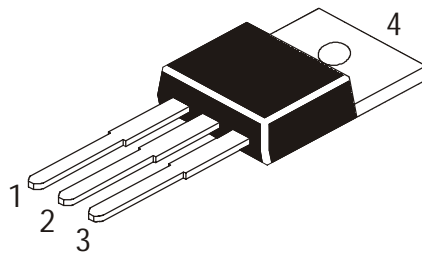
**TO-220
Plastic Package**

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	

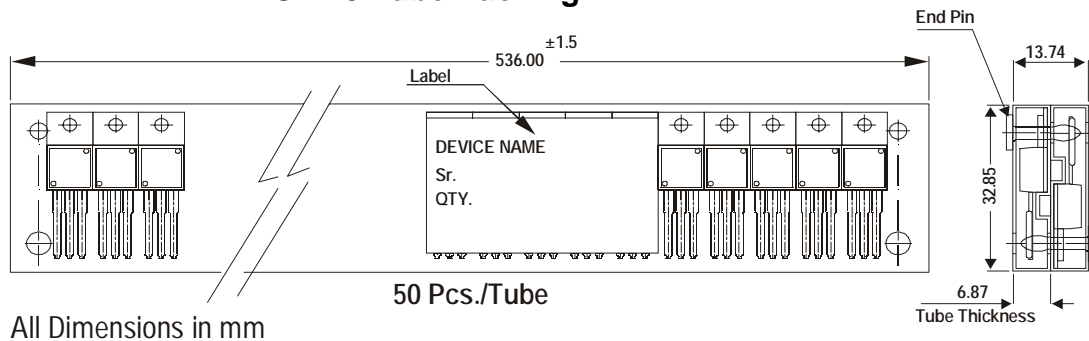
All dimensions in mm.



Pin Configuration

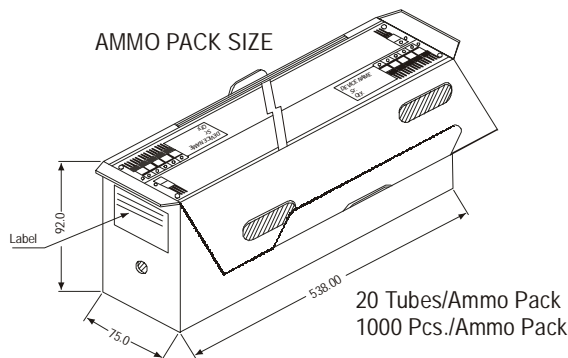
1. Base
2. Collector
3. Emitter
4. Collector

TO-220 Tube Packing



All Dimensions in mm

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

The product information and the selection guides facilitate selection of the CDIL's Discrete 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 is 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 Discrete 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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of

Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290

e-mail sales@cdil.com www.cdil.com