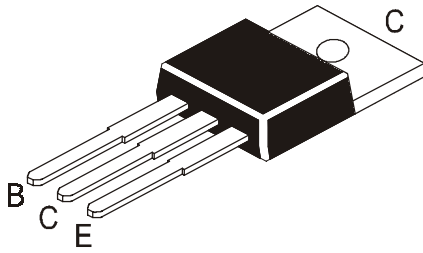




NPN/PNP PLASTIC POWER TRANSISTORS



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

**TO-220
Plastic Package**

Power Darlington for Linear Switching Application

ABSOLUTE MAXIMUM RATINGS

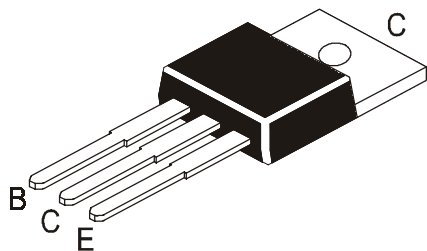
DESCRIPTION	SYMBOL	BDX33 BDX34	BDX33A BDX34A	BDX33B BDX34B	BDX33C BDX34C	BDX33D BDX34D	UNIT
Collector -Emitter Voltage	V_{CEO}	45	60	80	100	120	V
Collector -Base Voltage	V_{CBO}	45	60	80	100	120	V
Emitter -Base Voltage	V_{EBO}			5.0			V
Collector Current - Continuous	I_C			10			A
Peak	I_{CM}			15			A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

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

DESCRIPTION	SYMBOL	TEST CONDITION	BDX33 BDX34	BDX33A BDX34A	BDX33B BDX34B	BDX33C BDX34C	BDX33D BDX34D	UNIT
Breakdown (sus) Voltage	$V_{CEO(sus)}^*$	$I_C=100\text{mA}, I_B=0$	>45	>60	>80	>100	>120	V
	$V_{CER(sus)}^*$	$I_C=100\text{mA}, R_{BE}=100\text{ W}$	>45	>60	>80	>100	>120	V
	$V_{CEX(sus)}^*$	$I_C=100\text{mA}, V_{BE}=1.5\text{V}$	>45	>60	>80	>100	>120	V
Collector-Cut off Current	I_{CEO}	$V_{CE}=1/2\text{rated}$ $V_{CEO}, I_B=0$	<0.5	<0.5	<0.5	<0.5	<0.5	mA
		$T_c=100^\circ\text{C}$ $V_{CE}=1/2\text{rated}$ $V_{CEO}, I_B=0$	<10	<10	<10	<10	<10	mA
	I_{CBO}	$I_E=0, V_{CB}=\text{Rated}$ $V_{CBO}, T_c=100^\circ\text{C}$	<1	<1	<1	<1	<1	mA
		$I_E=0, V_{CB}=\text{Rated}$ $V_{CBO}, T_c=100^\circ\text{C}$	<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 BDX34	BDX33A BDX34A	BDX33B BDX34B	BDX33C BDX34C	BDX33D BDX34D	UNIT
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
		$I_C=4A, V_{CE}=3V$	>750	>750	-	-	-	
		$I_C=3A, V_{CE}=3V$			>750	>750	>750	
Diode Forward Voltage	V_F	$I_C=8A$ ALL			<4			V
SECOND BREAKDOWN								
Secondbreakdown Collector Current With Base Forward Biased (non-repetitive)	$I_{S/b}^{**}$	$V_{CE}=25V,$ BDX33 Series $V_{CE}=20V,$ BDX34 Series $V_{CE}=36V,$ BDX33 Series $V_{CE}=33V,$ BDX34 Series			>2.8 >3.5 >1.0 >1.0			A

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

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE min max	UNIT
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 BDX34 series	200 300	pF
Transition Frequency	f_T	$V_{CE}=5V, I_C=1A,$ $f=1MHz$ ALL	3.0	MHZ

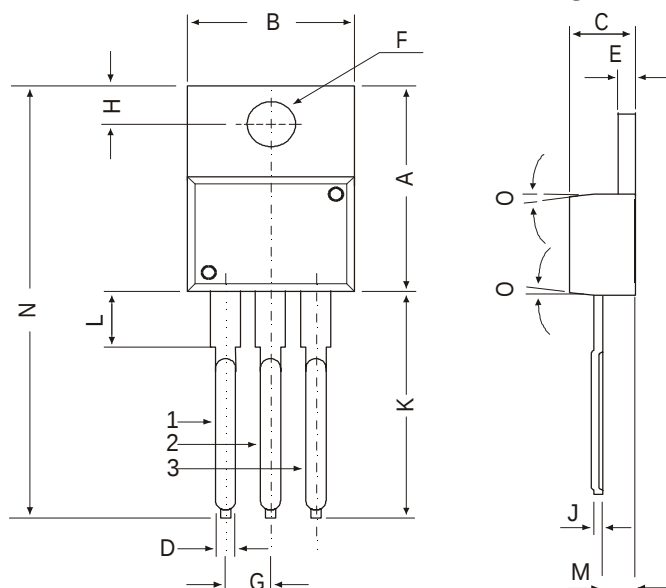
*Pulse Test:- Pulse Width<300μs, Duty Cycle=<2%

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

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

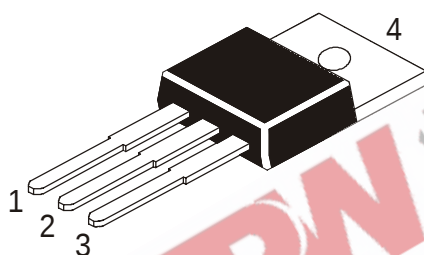
**TO-220
Plastic Package**

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	

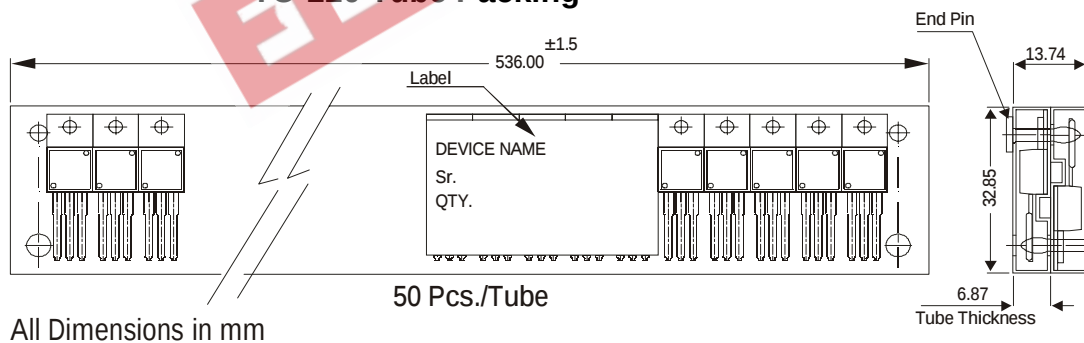
All dimensions in mm.



Pin Configuration

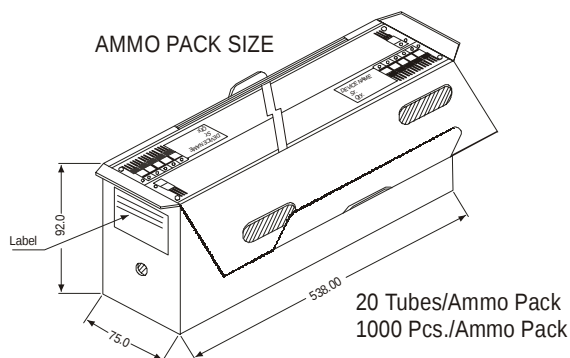
1. Base
2. Collector
3. Emitter
4. Collector

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