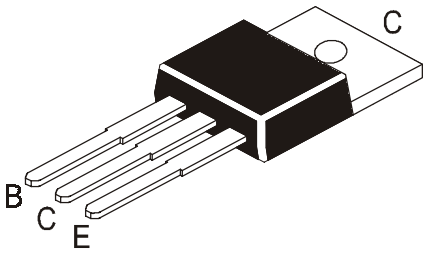
NPN/PNP PLASTIC POWER TRANSISTORS

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



TO-220
Plastic Package

Power Darlington for Linear Switchilng Application

ABSOLUTE MAXIMUM RATINGS

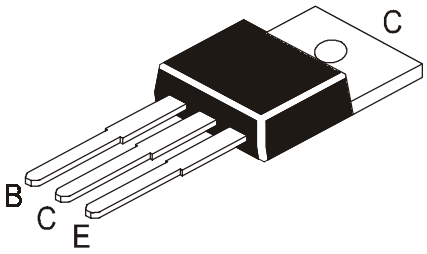
DESCRIPTION	SYMBOL	BDX33 BDX34	BDX33A BDX34A	BDX33B BDX34B	BDX33C BDX34C	BDX33D BDX34D	UNIT
Collector -Emitter Voltage	V_{CEO}	45	60	80	100	120	V
Collector -Base Voltage	V_{CBO}	45	60	80	100	120	V
Emitter -Base Voltage	V_{EBO}			5.0			V
Collector Current -							
Continuous	I_C			10			A
Peak	I_{CM}	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

ELECTRICAL CHARACTERISTICS (Tc=25ºC 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
		Tc=100ºC 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},	<1	<1	<1	<1	<1	mA
		Tc=100ºC I_E=0,V_{CB}=Rated V_{CBO},	<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=25ºC 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=O	<10	<10	<10	<10	<10	mA
Collector Emitter	$V_{CE(Sat)}$*	I_C=4A, I_B=8mA	<2.5	<2.5				V
Saturation Voltage		I_C=3A, I_B=6mA			<2.5	<2.5	<2.5	V
Base Emitter on Voltage	$V_{BE(on)}$*	I_C=4A, V_{CE}=3V,	<2.5V	<2.5				V
		I_C=3A, V_{CE}=3V			<2.5	<2.5	<2.5	V
DC Current Gain	h_{FE}*	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			>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

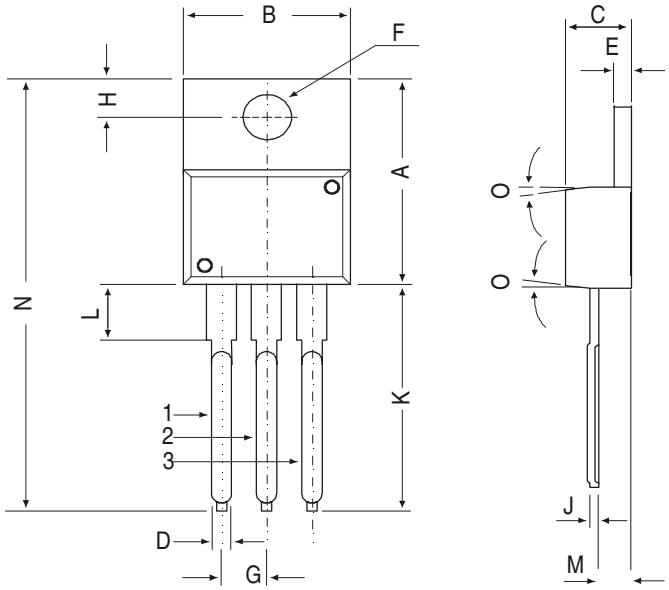
ELECTRICAL CHARACTERISTICS (Tc=25ºC Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE min	VALUE max	UNIT
DYNAMIC CHARACTERISTICS					
Small- Signal Current Gain	$\lvert h_{fe} \rvert$	I_c=1A,V_{CE}=5V, f=1MHz	1000		
Output Capacitance	C_{ob}	V_{CB}=10V,I_E=0, f=1MHz			
		BDX33 series		200	pF
		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**

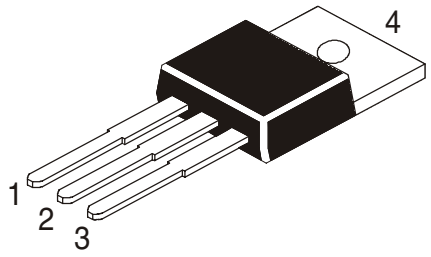
TO-220
Plastic Package

TO-220 Plastic Package



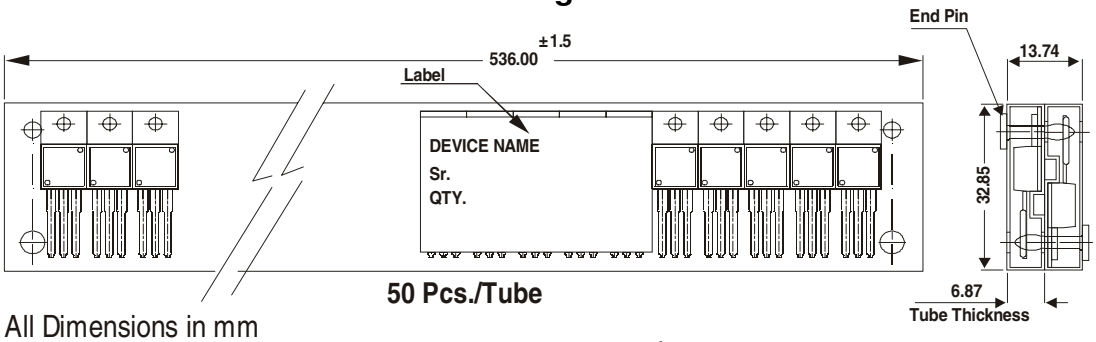
DIM	MIN	MAX
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D	—	0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J	—	0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N	—	31.24
O	7 DEG	

All diminsions in mm.



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

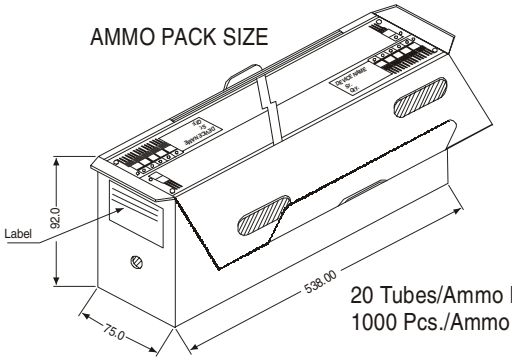
TO-220 Tube Packing



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 / FP	200 pcs/polybag 50 pcs/tube	396 gm/200 pcs 120 gm/50 pcs	3" x 7.5" x 7.5" 3.5" x 3.7" x 21.5"	1.0K 1.0K	17" x 15" x 13.5" 19" x 19" x 19"	16.0K 10.0K	36 kgs 29 kgs

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