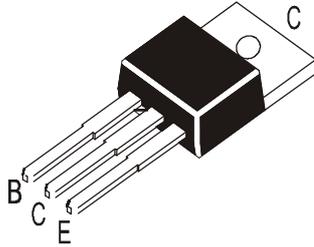


PLASTIC POWER TRANSISTORS

BD239, A, B, C NPN
BD240, A, B, C PNP



TO-220
Plastic Package

Complementary Silicon Transistors intended for a wide variety of Switching and Amplifier Applications, Series and Shunt Regulators, Driver and Output stages of Hi-Fi Amplifiers

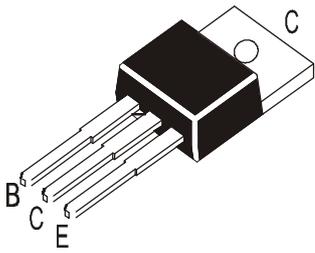
ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

DESCRIPTION	SYMBOL	BD239	BD239A	BD239B	BD239C	UNIT
		BD240	BD240A	BD240B	BD240C	
Collector Emitter Voltage	V _{CEO}	45	60	80	100	V
Collector Base Voltage	V _{CBO}	55	70	90	115	V
Emitter Base Voltage	V _{EBO}	5.0				V
Collector Current Continuous	I _C	2.0				A
Collector Current Peak	I _{CM}	4.0				A
Base Current	I _B	0.6				A
Power Dissipation upto T _c =25°C Derate above 25°C	P _D	30				W
		240				mW/°C
Power Dissipation upto T _a =25°C Derate above 25°C	P _D	2.0				W
		16				mW/°C
Unclamped Inductive Load Energy	*E	32				mJ
Operating And Storage Junction Temperature	T _j , T _{stg}	- 65 to +150				°C

THERMAL RESISTANCE

Junction to Case	R _{th(j-c)}	4.17	°C/W
Junction to Ambient in free air	R _{th(j-a)}	62.5	°C/W

* I_C=1.8A, L_C=20mH, R_E=0.1W, R_{BE}=100W



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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter (sus) Voltage	*V _{CEO(sus)}	I _C =30mA, I _B =0 BD239/240	45		V
		BD239A/240A	60		V
		BD239B/240B	80		V
		BD239C/240C	100		V
Collector Cut off Current	I _{CEO}	V _{CE} =30V, I _B =0 BD239, A / 240, A		0.3	mA
		V _{CE} =60V, I _B =0 BD239B, C/ 240B, C		0.3	mA
Collector Cut Off Current	I _{CES}	V _{CE} =V _{CEO(max)} , V _{BE} =0		0.2	mA
Emitter Cut Off Current	I _{EBO}	V _{EB} =5V, I _C =0		1.0	mA
DC Current Gain	*h _{FE}	I _C =0.2A, V _{CE} =4V	40		
		I _C =1A, V _{CE} =4V	15		
Collector Emitter Saturation Voltage	*V _{CE (sat)}	I _C =1A, I _B =0.2A		0.7	V
Base Emitter On Voltage	*V _{BE(on)}	I _C =1A, V _{CE} =4V		1.3	V

*Pulse Test : Pulse width ≤300ms, Duty Cycle ≤2%

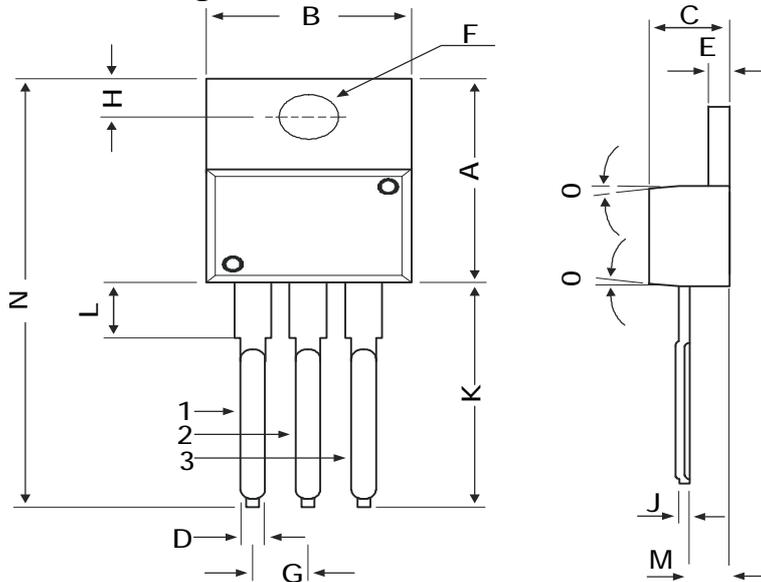
DYNAMIC CHARACTERISTIC

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Small Signal Current Gain	h _{fe}	I _C =0.2A, V _{CE} =10V, f=1KHz	20		
Transition Frequency	f _T	I _C =0.2A, V _{CE} =10V, f=1MHz	3		MHz

BD239, A, B, C NPN
BD240, A, B, C PNP

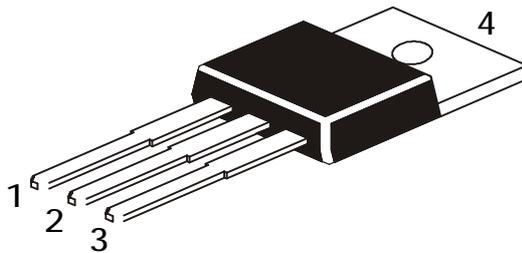
TO-220
Plastic Package

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	

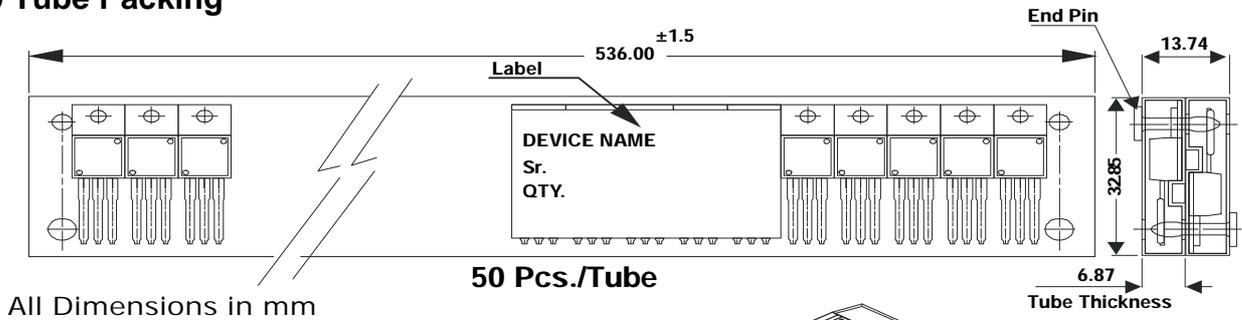
All diminsions in mm.



Pin Configuration

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

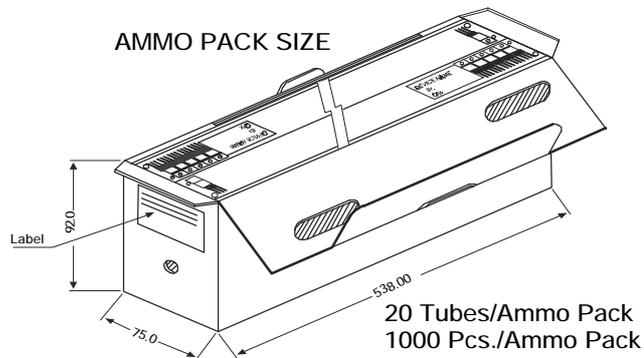
TO-220 Tube Packing



All Dimensions in mm

50 Pcs./Tube

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

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CDIL is a registered Trademark of
Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com