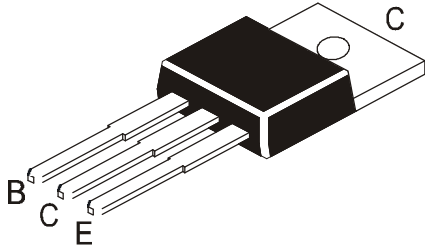


**NPN PLASTIC POWER TRANSISTORS**

**TIP47, TIP48  
TIP49, TIP50**

**TO-220  
Plastic Package**



**Line Operated Audio Output Amplifier, Switch Mode Power Supply Driver and General Purpose Switching Applications**

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

DESCRIPTION	SYMBOL	TIP47	TIP48	TIP49	TIP50	UNIT
Collector Emitter Voltage	V <sub>CEO</sub>	250	300	350	400	V
Collector Base Voltage	V <sub>CBO</sub>	350	400	450	500	V
Emitter Base Voltage	V <sub>EBO</sub>	5.0				V
Collector Current Continuous	I <sub>C</sub>	1.0				A
Collector Current Peak	I <sub>CM</sub>	2.0				A
Base Current	I <sub>B</sub>	0.6				A
Power Dissipation upto T <sub>c</sub> =25°C	P <sub>D</sub>	40				W
Power Dissipation upto T <sub>a</sub> =25°C Derate above 25°C	P <sub>D</sub>	2.0 16				W mW/°C
Operating and Storage Junction Temperature	T <sub>j</sub> , T <sub>stg</sub>	- 65 to +150				°C

**THERMAL RESISTANCE**

Junction to Case	R <sub>th(j-c)</sub>	3.125	°C/W
Junction to Ambient in free air	R <sub>th(j-a)</sub>	62.5	°C/W

**ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C unless specified otherwise)**

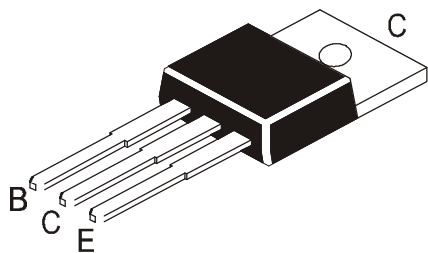
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter (sus) Voltage	*V <sub>CEO(sus)</sub>	I <sub>C</sub> =30mA, I <sub>B</sub> =0 <b>TIP47</b> <b>TIP48</b> <b>TIP49</b> <b>TIP50</b>	250 300 350 400			V V V V
Collector Cut off Current	I <sub>CEO</sub>	V <sub>CE</sub> =150V, I <sub>B</sub> =0 V <sub>CE</sub> =200V, I <sub>B</sub> =0 V <sub>CE</sub> =250V, I <sub>B</sub> =0 V <sub>CE</sub> =300V, I <sub>B</sub> =0 <b>TIP47</b> <b>TIP48</b> <b>TIP49</b> <b>TIP50</b>			1.0 1.0 1.0 1.0	mA mA mA mA
Collector Cut off Current	I <sub>CES</sub>	V <sub>CE</sub> = V <sub>CB(max)</sub> , V <sub>BE</sub> =0			1.0	mA
Emitter Cut off Current	I <sub>EBO</sub>	V <sub>BE</sub> =5V, I <sub>C</sub> =0			1.0	mA
DC Current Gain	*h <sub>FE</sub>	I <sub>C</sub> =0.3A, V <sub>CE</sub> =10V I <sub>C</sub> =1A, V <sub>CE</sub> =10V	30 10		150	
Collector Emitter Saturation Voltage	*V <sub>CE(sat)</sub>	I <sub>C</sub> =1A, I <sub>B</sub> =0.2A			1.0	V
Base Emitter on Voltage	*V <sub>BE(on)</sub>	I <sub>C</sub> =1A, V <sub>CE</sub> =10V			1.5	V

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

## NPN PLASTIC POWER TRANSISTOR

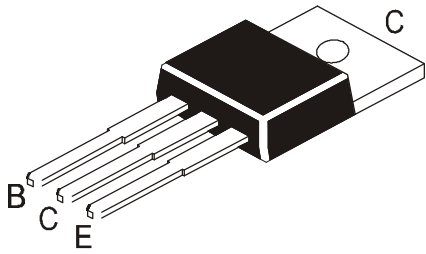
TIP47, TIP48  
TIP49, TIP50

TO-220  
Plastic Package



### DYNAMIC CHARACTERISTICS

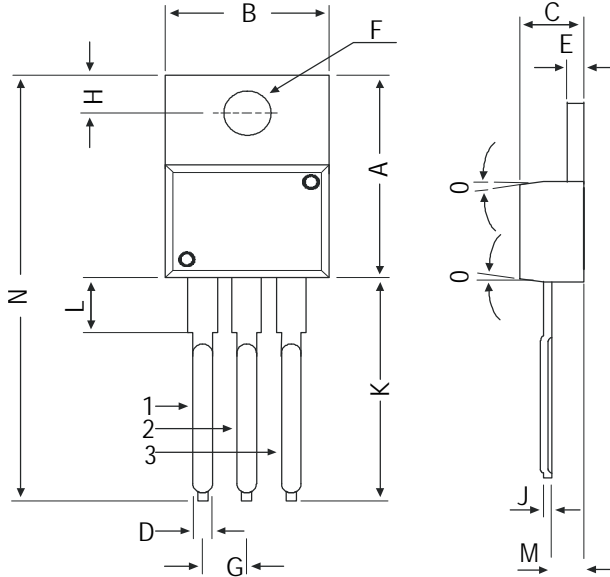
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	$h_{fe}$	$I_C=0.2A, V_{CE}=10V, f=1KHz$	25			
Transition Frequency	$f_T$	$I_C=0.2A, V_{CE}=10V, f=2MHz$	10			MHz



**TIP47, TIP48  
TIP49, TIP50**

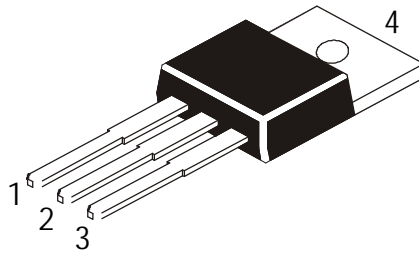
**TO-220  
Plastic Package**

**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	

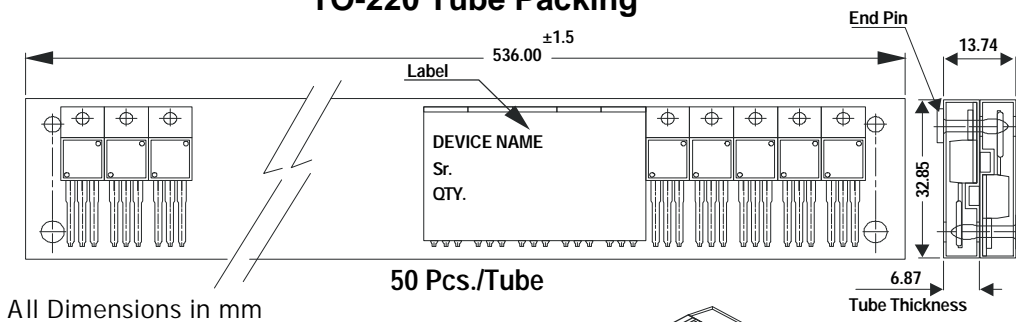
All dimensions in mm.



**Pin Configuration**

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

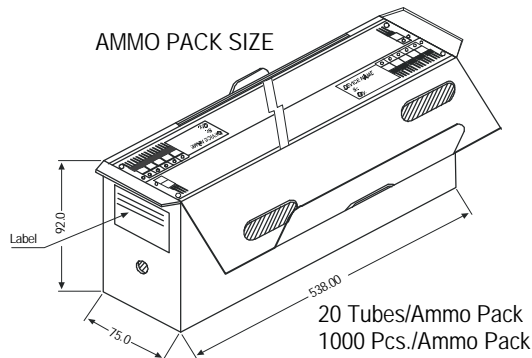
**TO-220 Tube Packing**



50 Pcs./Tube

All Dimensions in mm

**AMMO PACK SIZE**



20 Tubes/Ammo Pack  
1000 Pcs./Ammo Pack

**Packing Details**

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

### **Disclaimer**

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**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