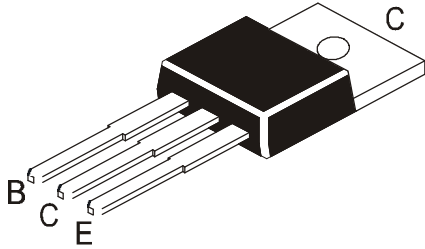


NPN PLASTIC POWER TRANSISTORS

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 ($T_a=25^\circ\text{C}$)

DESCRIPTION	SYMBOL	TIP47	TIP48	TIP49	TIP50	UNIT
Collector Emitter Voltage	V_{CEO}	250	300	350	400	V
Collector Base Voltage	V_{CBO}	350	400	450	500	V
Emitter Base Voltage	V_{EBO}	5.0				V
Collector Current Continuous	I_C	1.0				A
Collector Current Peak	I_{CM}	2.0				A
Base Current	I_B	0.6				A
Power Dissipation upto $T_c=25^\circ\text{C}$	P_D	40				W
Power Dissipation upto $T_a=25^\circ\text{C}$ Derate above 25°C	P_D	2.0 16				W mW/°C
Operating and Storage Junction Temperature	T_j, T_{stg}	- 65 to +150				°C

THERMAL RESISTANCE

Junction to Case	$R_{th(j-c)}$	3.125	°C/W
Junction to Ambient in free air	$R_{th(j-a)}$	62.5	°C/W

ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless specified otherwise)

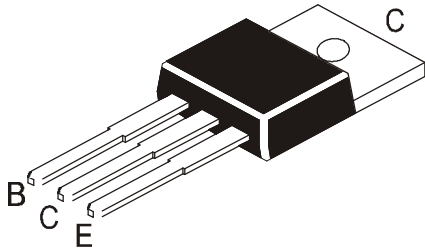
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter (sus) Voltage	$*V_{CEO(sus)}$	$I_C=30\text{mA}, I_B=0$ TIP47 TIP48 TIP49 TIP50	250 300 350 400			V V V V
Collector Cut off Current	I_{CEO}	$V_{CE}=150\text{V}, I_B=0$ $V_{CE}=200\text{V}, I_B=0$ $V_{CE}=250\text{V}, I_B=0$ $V_{CE}=300\text{V}, I_B=0$ TIP47 TIP48 TIP49 TIP50			1.0 1.0 1.0 1.0	mA mA mA mA
Collector Cut off Current	I_{CES}	$V_{CE} = V_{CB(max)}, V_{BE}=0$			1.0	mA
Emitter Cut off Current	I_{EBO}	$V_{BE}=5\text{V}, I_C=0$			1.0	mA
DC Current Gain	$*h_{FE}$	$I_C=0.3\text{A}, V_{CE}=10\text{V}$ $I_C=1\text{A}, V_{CE}=10\text{V}$	30 10		150	
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=1\text{A}, I_B=0.2\text{A}$			1.0	V
Base Emitter on Voltage	$*V_{BE(on)}$	$I_C=1\text{A}, V_{CE}=10\text{V}$			1.5	V

*Pulse Test : Pulse width $\leq 300\text{ms}$, Duty Cycle $\leq 2\%$

NPN PLASTIC POWER TRANSISTOR

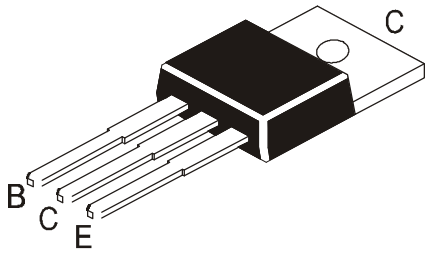
TIP47, TIP48
TIP49, TIP50

TO-220
Plastic Package



DYNAMIC CHARACTERISTICS

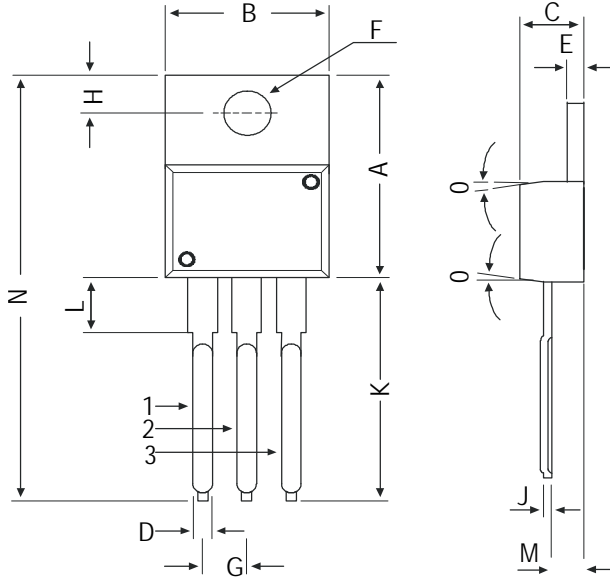
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	h_{fe}	$I_C=0.2A, V_{CE}=10V, f=1KHz$	25			
Transition Frequency	f_T	$I_C=0.2A, V_{CE}=10V, f=2MHz$	10			MHz



**TIP47, TIP48
TIP49, TIP50**

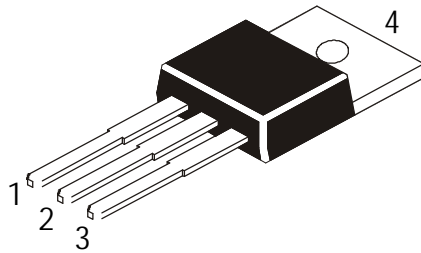
**TO-220
Plastic Package**

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	

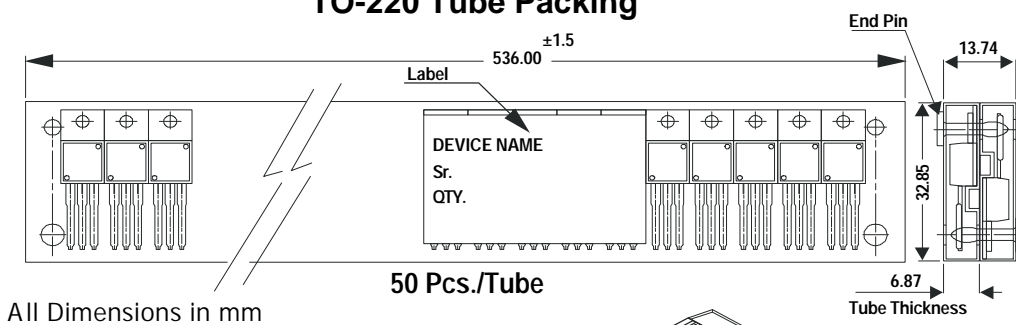
All dimensions in mm.



Pin Configuration

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

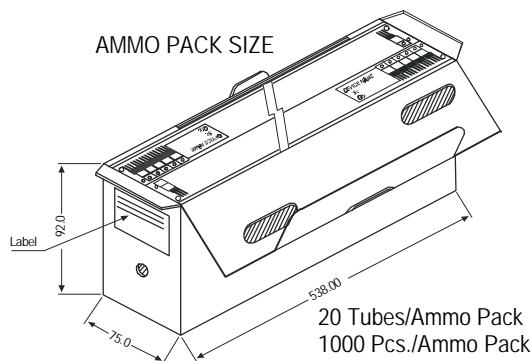
TO-220 Tube Packing



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

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 are 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 + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com