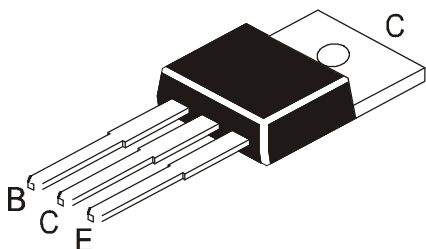


NPN PLASTIC POWER TRANSISTORS

**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/ $^\circ\text{C}$
Operating and Storage Junction Temperature	T_j, T_{stg}	- 65 to +150				$^\circ\text{C}$

THERMAL RESISTANCE

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

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

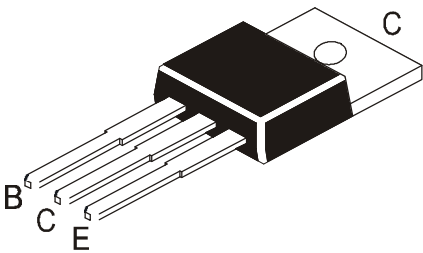
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter (sus) Voltage	$*V_{CEO(sus)}$	$I_C=30\text{mA}, I_B=0$ TIP47 TIP48 TIP49 TIP50	250 300 350 400			V V V V
Collector Cut off Current	I_{CEO}	$V_{CE}=150\text{V}, I_B=0$ $V_{CE}=200\text{V}, I_B=0$ $V_{CE}=250\text{V}, I_B=0$ $V_{CE}=300\text{V}, I_B=0$ 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

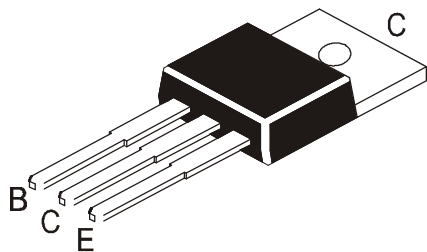
TIP47, TIP48
TIP49, TIP50

TO-220
Plastic Package



DYNAMIC CHARACTERISTICS

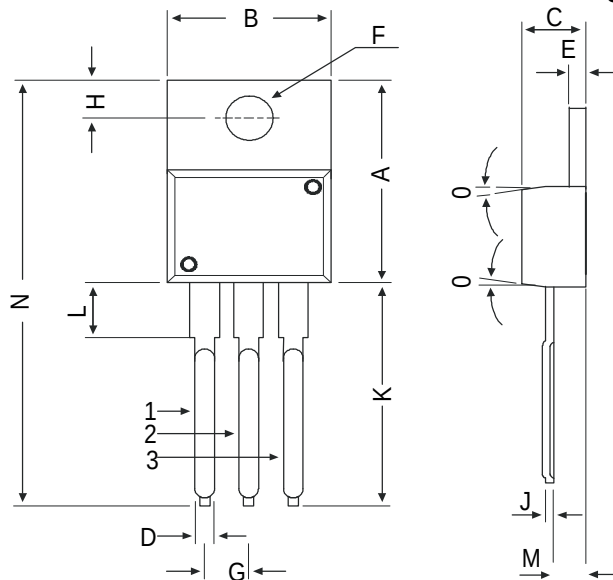
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	h_{fe}	$I_C=0.2A, V_{CE}=10V, f=1KHz$	25			
Transition Frequency	f_T	$I_C=0.2A, V_{CE}=10V, f=2MHz$	10			MHz



**TIP47, TIP48
TIP49, TIP50**

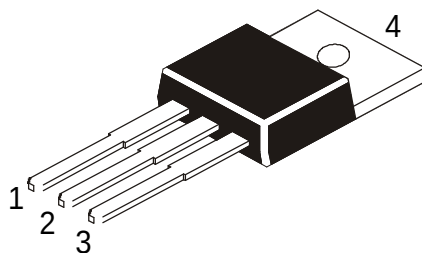
**TO-220
Plastic Package**

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	

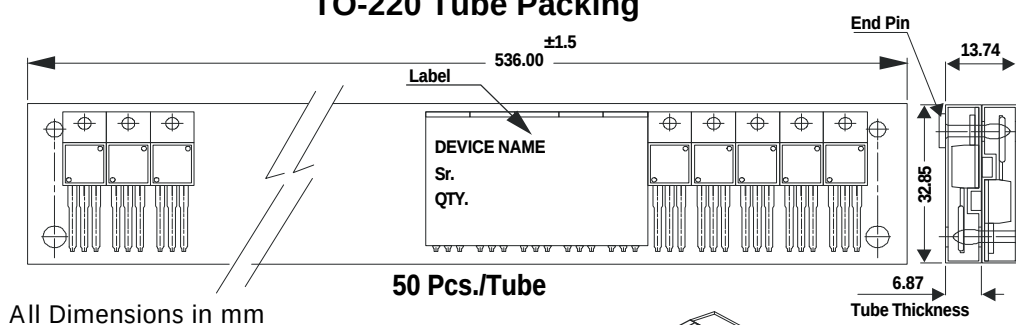
All diminsions in mm.



Pin Configuration

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

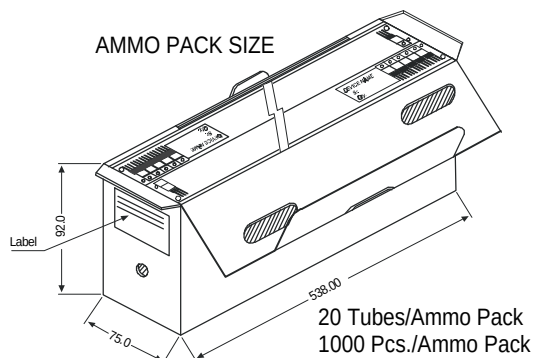
TO-220 Tube Packing



50 Pcs./Tube

All Dimensions in mm

AMMO PACK SIZE



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