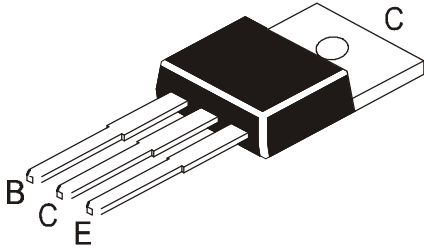


**PLASTIC POWER TRANSISTORS**

TIP110	TIP115
TIP111	TIP116
TIP112	TIP117
NPN	PNP

**TO-220  
Plastic Package**



**Intended for use in Medium Power Linear and Switching Applications**

**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ )**

DESCRIPTION	SYMBOL	TIP110/115	TIP111/116	TIP112/117	UNIT
Collector Emitter Voltage	$V_{CEO}$	60	80	100	V
Collector Base Voltage	$V_{CBO}$	60	80	100	V
Emitter Base Voltage	$V_{EBO}$	5			V
Collector Current Continuous	$I_C$	2			A
Collector Current Peak	$I_{CM}$	4			A
Base Current	$I_B$	50			mA
Power Dissipation upto $T_c=25^{\circ}\text{C}$	$P_D$	50			W
Power Dissipation upto $T_a=25^{\circ}\text{C}$ Derate above $25^{\circ}\text{C}$	$P_D$	2			W
		16			mW/ $^{\circ}\text{C}$
Operating And Storage Junction Temperature	$T_j, T_{stg}$	-65 to +150			$^{\circ}\text{C}$

**THERMAL RESISTANCE**

Junction to Case	$R_{th(j-c)}$	2.5	$^{\circ}\text{C}/\text{W}$
Junction to Ambient in free air	$R_{th(j-a)}$	62.5	$^{\circ}\text{C}/\text{W}$

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

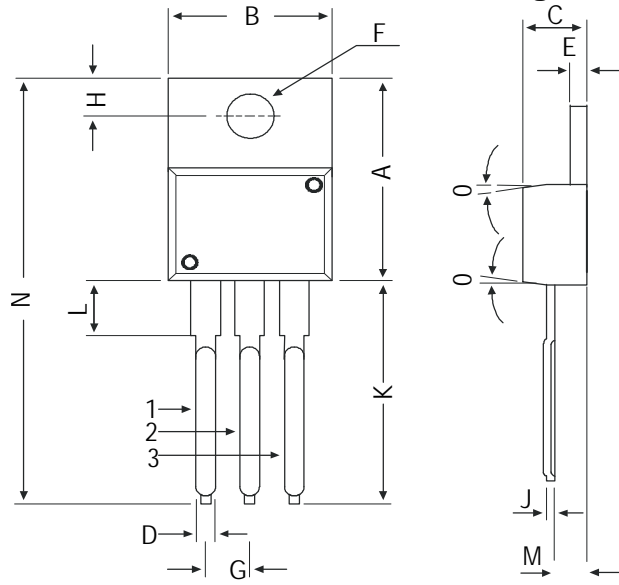
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Cut Off Current	$I_{CEO}$	$V_{CE} = \text{Half Rated } V_{CEO}$		2.0	mA
Collector Cut Off Current	$I_{CBO}$	$V_{CB} = \text{Half Rated } V_{CBO}$		1.0	mA
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$		2.0	mA
Collector Emitter (sus) Voltage	$*V_{CEO(sus)}$	$I_C=30\text{mA}, I_B=0$	<b>TIP110/115</b>	60	V
			<b>TIP111/116</b>	80	V
			<b>TIP112/117</b>	100	V
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=2\text{A}, I_B=8\text{mA}$		2.5	V
Base Emitter On Voltage	$*V_{BE(on)}$	$I_C=2\text{A}, V_{CE}=4\text{V}$		2.8	V
DC Current Gain	$*h_{FE}$	$I_C=1\text{A}, V_{CE}=4\text{V}$	1,000		
		$I_C=2\text{A}, V_{CE}=4\text{V}$	500		

\*Pulse Test : Pulse width =300ms, Duty Cycle  $\leq 2\%$

TIP110 | TIP115  
 TIP111 | TIP116  
 TIP112 | TIP117  
 NPN | PNP

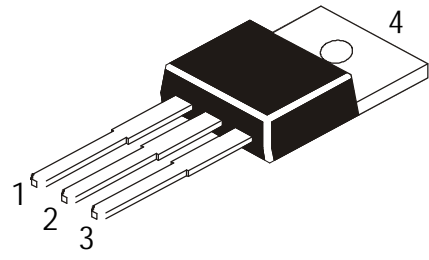
**TO-220**  
**Plastic Package**

**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	

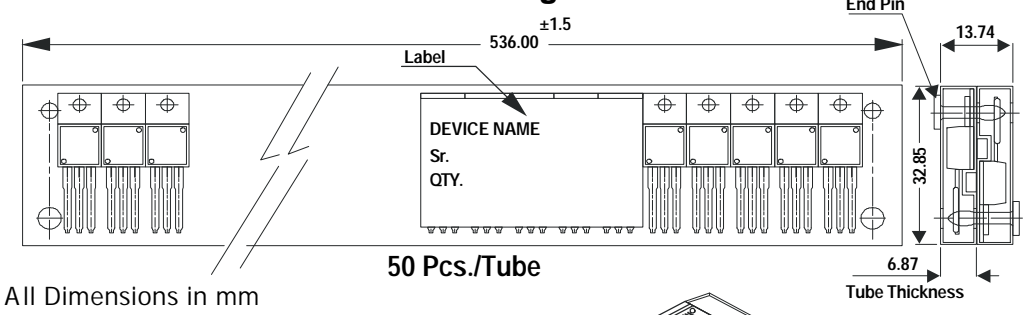
All diminsions in mm.



**Pin Configuration**

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

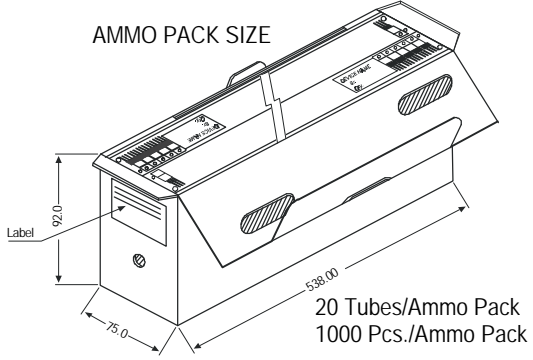
**TO-220 Tube Packing**



All Dimensions in mm

50 Pcs./Tube

**AMMO PACK SIZE**



20 Tubes/Ammo Pack  
 1000 Pcs./Ammo Pack

**Packing Detail**

PACKAGE	STANDARDPACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-220	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