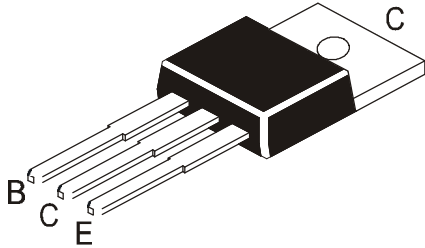


## PLASTIC POWER TRANSISTORS

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 16		W mW/°C
Operating And Storage Junction Temperature	$T_j, T_{stg}$		-65 to +150		°C

### THERMAL RESISTANCE

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

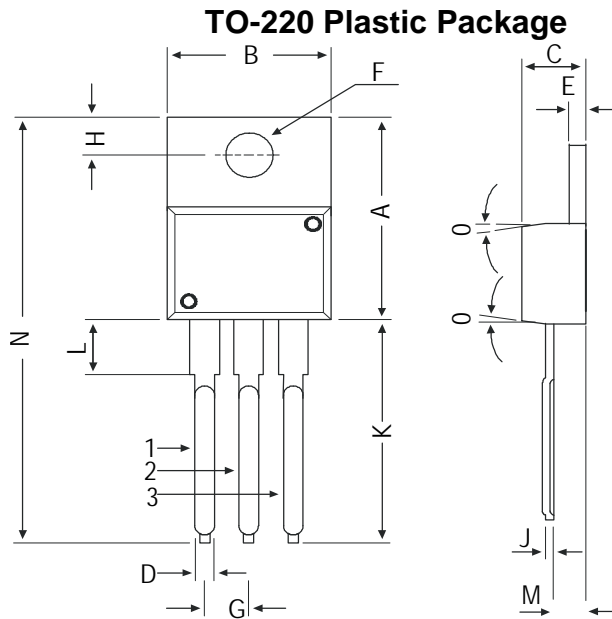
### ELECTRICAL CHARACTERISTICS ( $T_c=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	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	$I_{EBO}$	$V_{EB}=5V, I_C=0$		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	$*V_{CE(sat)}$	$I_C=2A, I_B=8\text{mA}$		2.5	V
Base Emitter On Voltage	$*V_{BE(on)}$	$I_C=2A, V_{CE}=4V$		2.8	V
DC Current Gain	$*h_{FE}$	$I_C=1A, V_{CE}=4V$	1,000		
		$I_C=2A, V_{CE}=4V$	500		

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

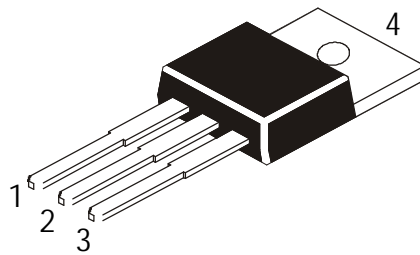
TIP110	TIP115
TIP111	TIP116
TIP112	TIP117
NPN	PNP

### 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	

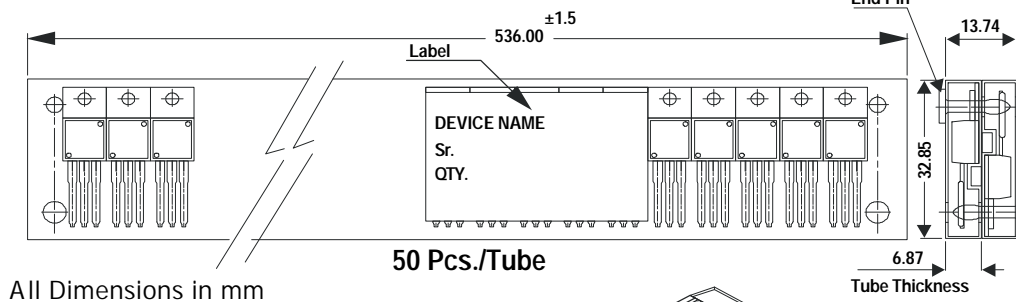
All dimensions in mm.



#### Pin Configuration

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

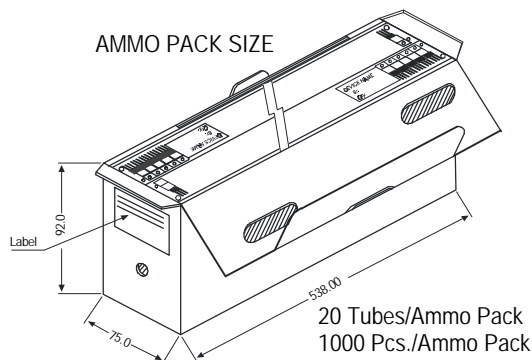
### TO-220 Tube Packing



All Dimensions in mm

50 Pcs./Tube

AMMO PACK SIZE



### 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

<b>TIP110</b>	<b>TIP115</b>
<b>TIP111</b>	<b>TIP116</b>
<b>TIP112</b>	<b>TIP117</b>
<b>NPN</b>	<b>PNP</b>

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

**Disclaimer**

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