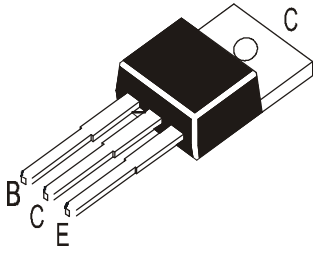


PLASTIC POWER TRANSISTORS



TIP29, A, B, C NPN
TIP30, A, B, C PNP

TO-220
Plastic Package

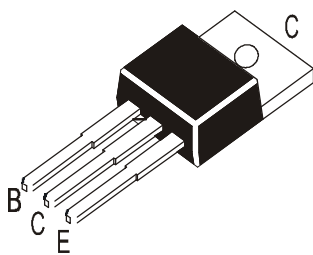
Complementary Silicon Transistors intended for a wide variety of Switching and Amplifier Applications, Series and Shunt Regulators, Driver and Output stages of Hi-Fi Amplifiers

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

DESCRIPTION	SYMBOL	TIP29	TIP29A	TIP29B	TIP29C	UNIT
		TIP30	TIP30A	TIP30B	TIP30C	
Collector Emitter (sus) Voltage	V_{CEO}	40	60	80	100	V
Collector Base Voltage	V_{CBO}	40	60	80	100	V
Emitter Base Voltage	V_{EBO}	5.0				V
Collector Current Continuous	I_C	1.0				A
Collector Current Peak	I_{CM}	3.0				A
Base Current	I_B	0.4				A
Power Dissipation upto $T_c=25^\circ\text{C}$	P_D	30				W
Power Dissipation upto $T_a=25^\circ\text{C}$ Derate above 25°C	P_D	2.0 16				W mW/°C
Storage Temperature	T_{stg}	- 65 to +150				°C
Junction Temperature	T_j	150				°C

THERMAL RESISTANCE

Junction to Case	$R_{th(j-c)}$	4.167	°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 Emitter Voltage	$*V_{CE(sus)}$	$I_C=30\text{mA}$, $I_B=0$ TIP29/30	40		V
		TIP29A/30A	60		V
		TIP29B/30B	80		V
		TIP29C/30C	100		V
Collector Cut off Current	I_{CEO}	$V_{CE}=30\text{V}$, $I_B=0$ TIP29, A / 30, A		0.3	mA
		$V_{CE}=60\text{V}$, $I_B=0$ TIP29B, C / 30B, C		0.3	mA
Collector Cut off Current	I_{CES}	$V_{CE}=V_{CEO}(\text{max})$, $V_{BE}=0$		0.2	mA
Emitter Cut off Current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$		1.0	mA
DC Current Gain	$*h_{FE}$	$I_C=0.2\text{A}$, $V_{CE}=4\text{V}$	40		
		$I_C=1\text{A}$, $V_{CE}=4\text{V}$	15	75	
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=1\text{A}$, $I_B=125\text{mA}$		0.7	V
Base Emitter on Voltage	$*V_{BE(on)}$	$I_C=1\text{A}$, $V_{CE}=4\text{V}$		1.3	V

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

DYNAMIC CHARACTERISTIC

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Small Signal Current Gain	h_{fe}	$I_C=0.2\text{A}$, $V_{CE}=10\text{V}$, $f=1\text{KHz}$	20		
Transition Frequency	f_T	$I_C=0.2\text{A}$, $V_{CE}=10\text{V}$, $f=1\text{MHz}$	3		MHz

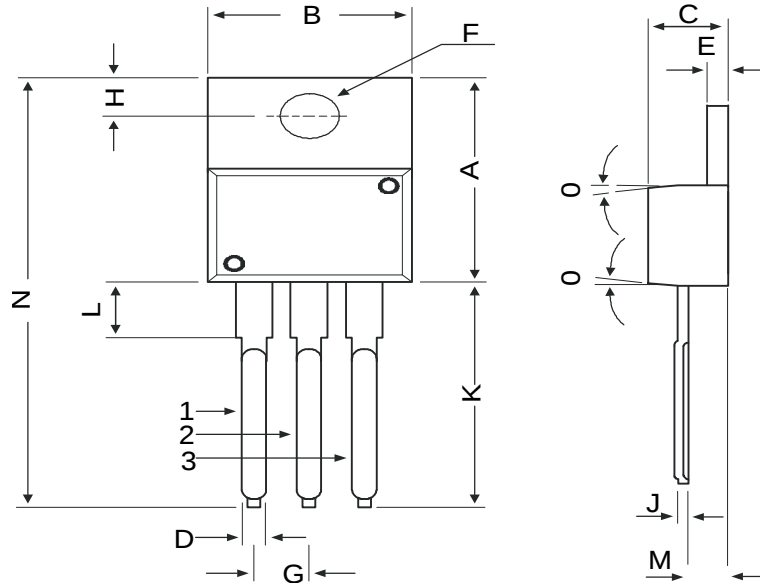
SWITCHING CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	TYP	UNIT
Turn On Time	t_{on}	$V_{CC}=30\text{V}$, $I_C=2\text{A}$, $I_{B1}=I_{B2}=0.2\text{A}$	0.43	μs
Turn Off Time	t_{off}		1.0	μs

TIP29, A, B, C NPN
TIP30, A, B, C PNP

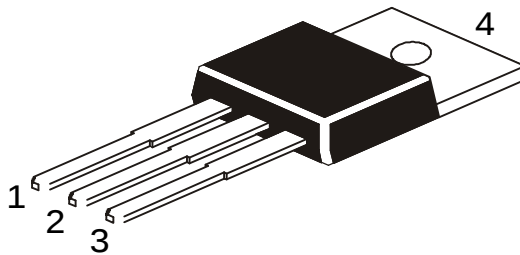
TO-220 Plastic Package

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	

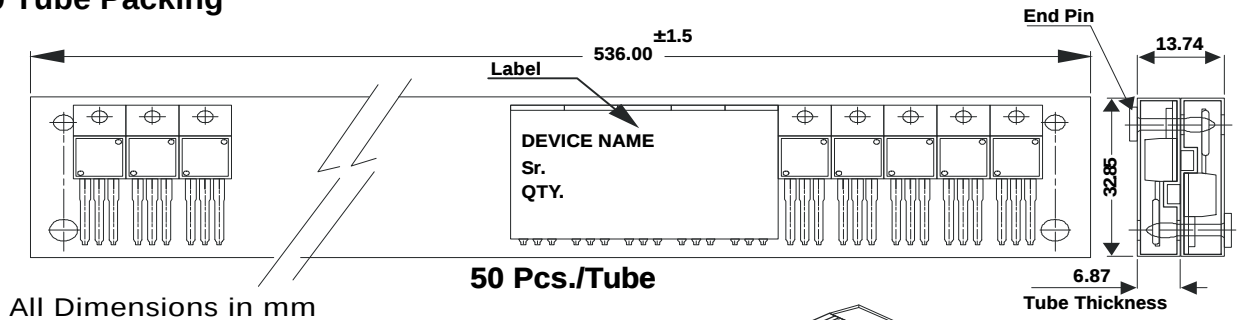
All diminsions in mm.



Pin Configuration

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

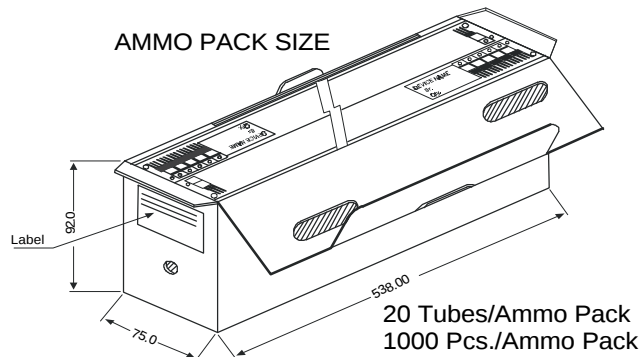
TO-220 Tube Packing



All Dimensions in mm

50 Pcs./Tube

AMMO PACK SIZE



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

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