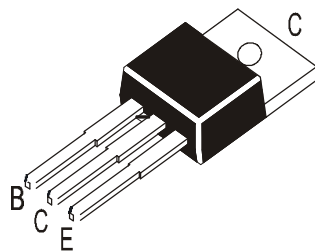


## PLASTIC POWER TRANSISTORS

TIP41, A, B, C NPN  
TIP42, A, B, C PNP



TO-220  
Plastic Package

For Lead Free Parts, Device Part # will be  
Prefixed with "T"

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

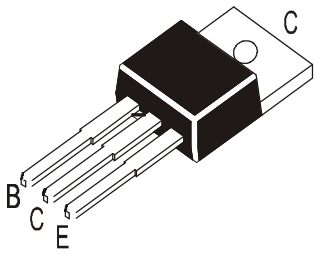
### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

DESCRIPTION	SYMBOL	TIP41	TIP41A	TIP41B	TIP41C	UNIT
		TIP42	TIP42A	TIP42B	TIP42C	
Collector Emitter 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	$I_C$	6.0				A
Collector Current Peak	$I_{CM}$	10				A
Base Current	$I_B$	2.0				A
Power Dissipation upto $T_c=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	65				W
		520				mW/°C
Power Dissipation upto $T_a=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	2.0				W
		16				mW/°C
Unclamped Inductive Load Energy	*E	62.5				mJ
Storage Temperature	$T_{stg}$	150				°C
Junction Temperature	$T_j$	- 65 to +150				°C

### THERMAL RESISTANCE

Junction to Case	$R_{th(j-c)}$	1.92	°C/W
Junction to Ambient in free air	$R_{th(j-a)}$	62.5	°C/W

\*  $I_c=2.5\text{A}$ ,  $L=20\text{mH}$ ,  $P.R.F.=10\text{Hz}$ ,  $V_{cc}=10\text{V}$ ,  $R_{BE}=100\text{W}$



**ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C unless specified otherwise )**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Voltage	*V <sub>CEO</sub>	I <sub>C</sub> =30mA, I <sub>B</sub> =0			
		<b>TIP41/42</b>	40		V
		<b>TIP41A/42A</b>	60		V
		<b>TIP41B/42B</b>	80		V
Collector Cut off Current	I <sub>CEO</sub>	V <sub>CE</sub> =30V, I <sub>B</sub> =0		0.7	mA
		<b>TIP41, A / 42, A</b>			
Collector Cut off Current	I <sub>CEO</sub>	V <sub>CE</sub> =60V, I <sub>B</sub> =0		0.7	mA
		<b>TIP41B, C / 42B, C</b>			
Collector Cut off Current	I <sub>CES</sub>	V <sub>CE</sub> =V <sub>CEO</sub> (max), V <sub>BE</sub> =0		0.4	mA
Emitter Cut off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0		1.0	mA
DC Current Gain	*h <sub>FE</sub>	I <sub>C</sub> =0.3A, V <sub>CE</sub> =4V	30		
		I <sub>C</sub> =3A, V <sub>CE</sub> =4V	15	75	
Collector Emitter Saturation Voltage	*V <sub>CE(sat)</sub>	I <sub>C</sub> =6A, I <sub>B</sub> =0.6A		1.5	V
Base Emitter on Voltage	*V <sub>BE(on)</sub>	I <sub>C</sub> =6A, V <sub>CE</sub> =4V		2.0	V

\*Pulse Test : Pulse width ≤300ms, Duty Cycle ≤2%

**DYNAMIC CHARACTERISTIC**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Small Signal Current Gain	h <sub>fe</sub>	I <sub>C</sub> =0.5A, V <sub>CE</sub> =10V, f=1KHz	20		
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> =0.5A, V <sub>CE</sub> =10V, f=1MHz	3		MHz

**SWITCHING CHARACTERISTICS**

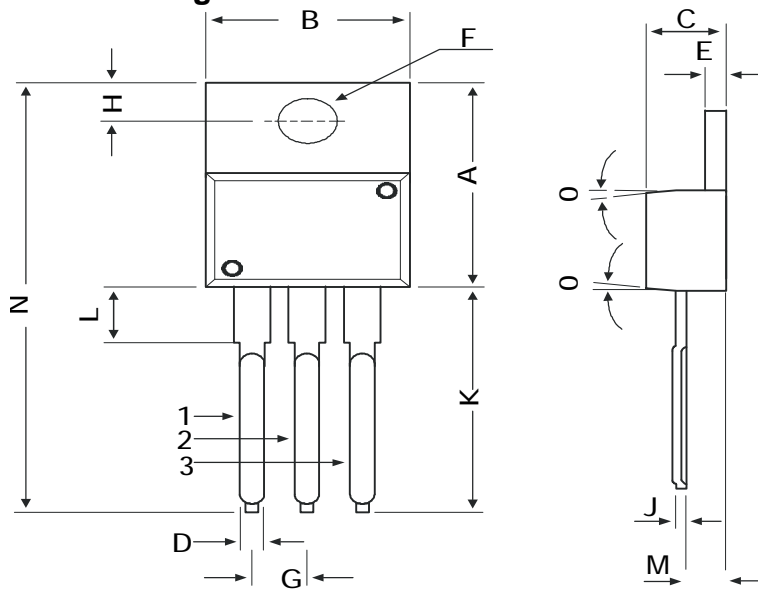
DESCRIPTION	SYMBOL	TEST CONDITION	TYP	UNIT
Turn On Time	t <sub>on</sub>	V <sub>cc</sub> =30V, I <sub>c</sub> =6A, I <sub>B1</sub> =I <sub>B2</sub> =0.6A,	0.6	μs
Turn Off Time	t <sub>off</sub>	R <sub>L</sub> =5Ω	1.4	μs

TIP41, A, B, C NPN  
TIP42, A, B, C PNP

**TO-220  
Plastic Package**

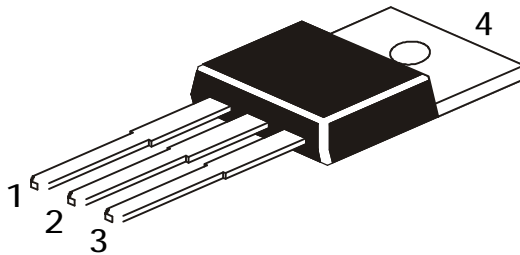
For Lead Free Parts, Device Part # will be  
Prefixed with "T"

**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	

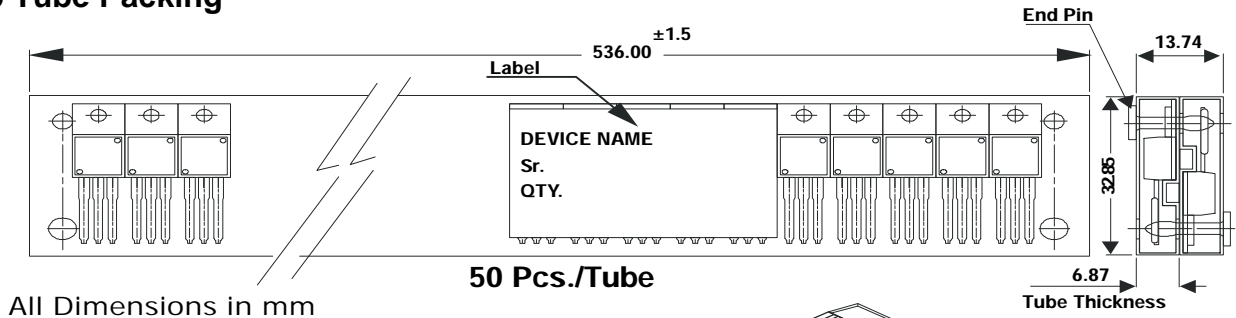
All diminsions in mm.



**Pin Configuration**

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

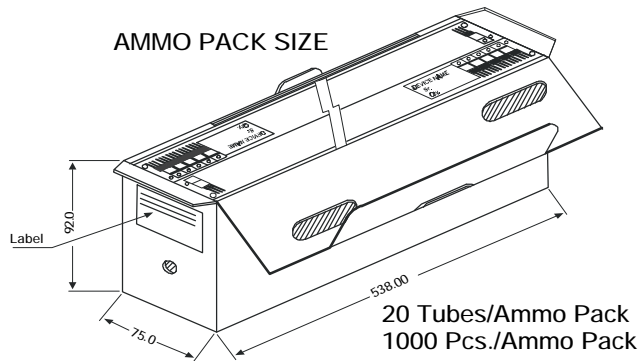
**TO-220 Tube Packing**



All Dimensions in mm

**50 Pcs./Tube**

**AMMO PACK SIZE**



20 Tubes/Ammo Pack  
1000 Pcs./Ammo Pack

**Packing Detail**

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-220 /FP	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**

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