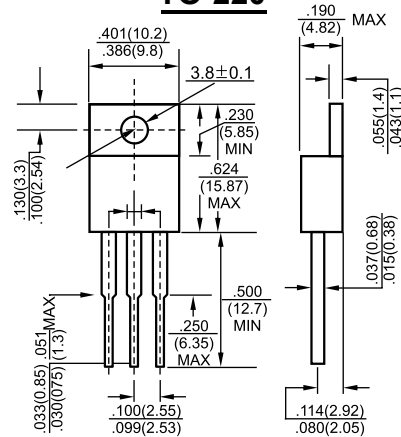


1. BASE
2. COLLECTOR
3. EMITTER

### TO-220



## Features

- ✧ Medium Power Linear Switching Applications
- ✧ Complement to TIP41/41A/41B/41C

## MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

Dimensions in inches and (millimeters)

Symbol	Parameter	TIP42	TIP42A	TIP42B	TIP42C	Units
V <sub>CB0</sub>	Collector-Base Voltage	-40	-60	-80	-100	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-40	-60	-80	-100	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5				V
I <sub>C</sub>	Collector Current -Continuous	-6				A
P <sub>C</sub>	Collector Power Dissipation	2				W
T <sub>J</sub>	Junction Temperature	150				°C
T <sub>stg</sub>	Storage Temperature Range	-55to+150				°C

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

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	TIP42 TIP42A TIP42B TIP42C	V <sub>(BR)CBO</sub> I <sub>C</sub> = -1mA, I <sub>E</sub> = 0	-40 -60 -80 -100		V
Collector-emitter breakdown voltage	TIP42 TIP42A TIP42B TIP42C	V <sub>(BR)CEO</sub> I <sub>C</sub> = -30mA, I <sub>B</sub> = 0	-40 -60 -80 -100		V
Emitter-base breakdown voltage		V <sub>(BR)EBO</sub> I <sub>E</sub> = -1mA, I <sub>C</sub> = 0	-5		V
Collector cut-off current	TIP42 TIP42A TIP42B TIP42C	I <sub>CBO</sub> V <sub>CB</sub> = -40V, I <sub>E</sub> = 0 V <sub>CB</sub> = -60V, I <sub>E</sub> = 0 V <sub>CB</sub> = -80V, I <sub>E</sub> = 0 V <sub>CB</sub> = -100V, I <sub>E</sub> = 0		-0.4	mA
Collector cut-off current	TIP42/42A TIP42B/42C	I <sub>CEO</sub> V <sub>CE</sub> = -30V, I <sub>B</sub> = 0 V <sub>CE</sub> = -60V, I <sub>B</sub> = 0		-0.7	mA
Emitter cut-off current		I <sub>EBO</sub> V <sub>EB</sub> = -5V, I <sub>C</sub> = 0		-1	mA
DC current gain		h <sub>FE(1)</sub> V <sub>CE</sub> = -4V, I <sub>C</sub> = -0.3A	30		
		h <sub>FE(2)</sub> V <sub>CE</sub> = -4 V, I <sub>C</sub> = -3A	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 voltage		V <sub>BE</sub> V <sub>CE</sub> = -4V, I <sub>C</sub> = -6A		-2	V
Transition frequency		f <sub>T</sub> V <sub>CE</sub> = -10V, I <sub>C</sub> = -0.5	3		MHz

<sup>†</sup>Pulse test

### Typical Characteristics

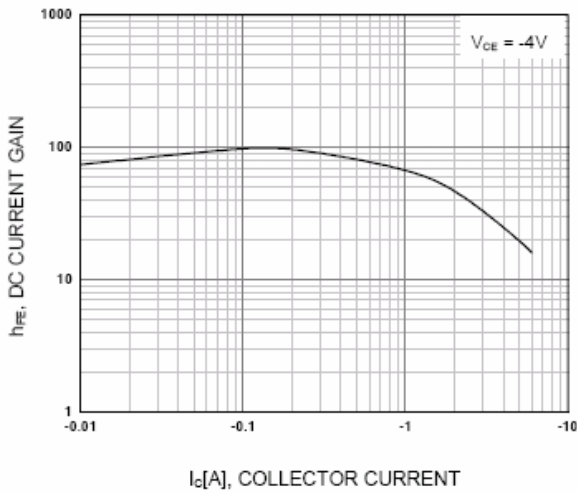


Figure 1. DC current Gain

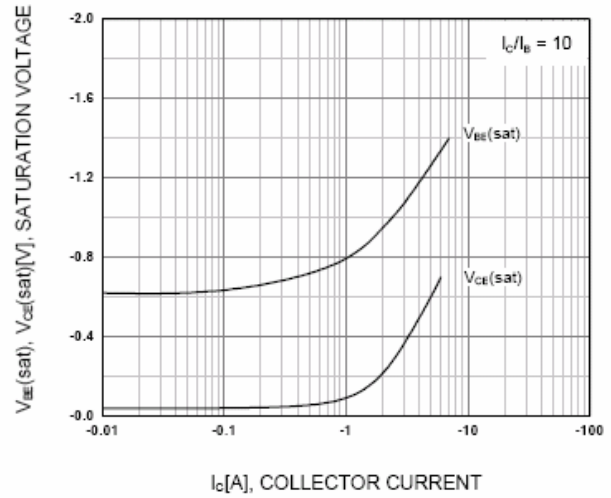


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

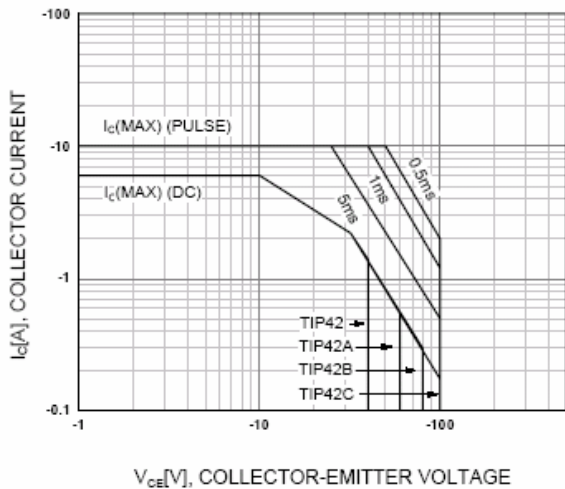


Figure 3. Safe Operating Area

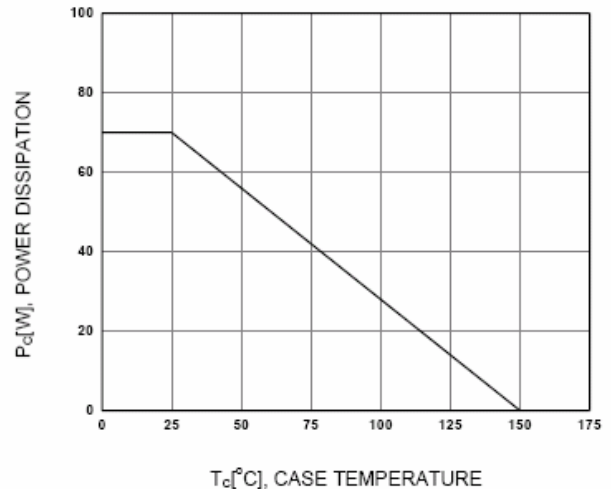


Figure 4. Power derating

Package	Packing	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton Size L×W×H(mm)	Quantity(pcs/carton)
TO-220	50pcs/Tube	560×150×50	1000	570×290×180	5000