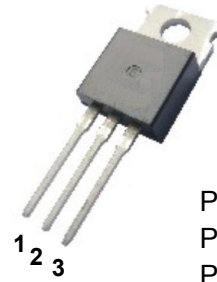


## DESCRIPTION

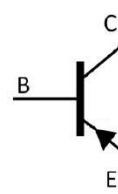
- With TO-220 package
- Complement to type TIP31/31A/31B/31C

## APPLICATIONS

- Medium power linear and switching applications



PIN1 : Base  
PIN 2 : Collector  
PIN 3 : Emitter



## Absolute maximum ratings(Ta=25 °C)

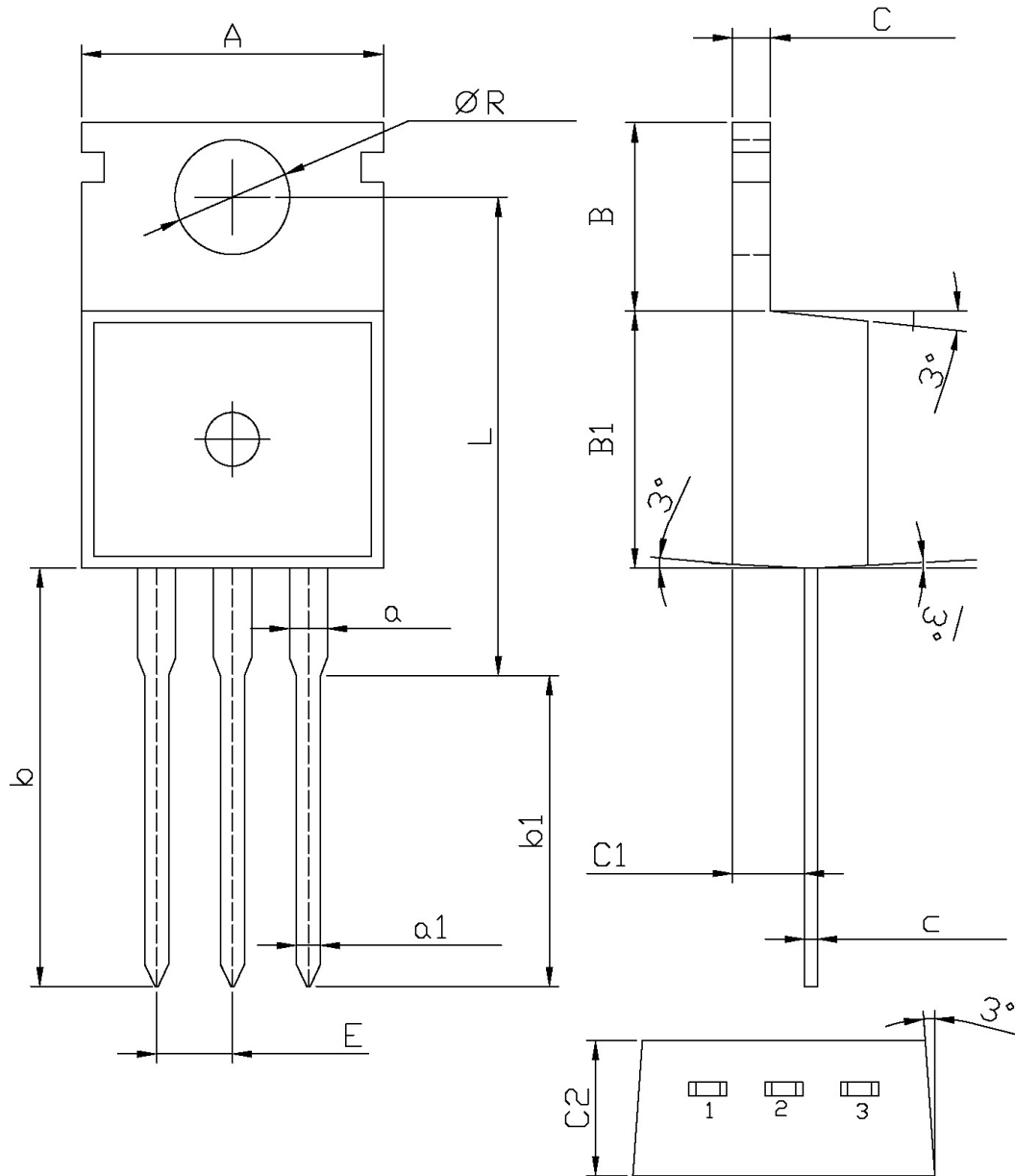
SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	TIP32	-40	V
		TIP32A	-60	
		TIP32B	-80	
		TIP32C	-100	
V <sub>CEO</sub>	Collector-emitter voltage	TIP32	-40	V
		TIP32A	-60	
		TIP32B	-80	
		TIP32C	-100	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-5	V
I <sub>C</sub>	Collector current (DC)		-3	A
I <sub>CM</sub>	Collector current-Pulse		-5	A
I <sub>B</sub>	Base current		-1	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25	40	W
		T <sub>a</sub> =25	2	
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-65~150	

## CHARACTERISTICS

T<sub>j</sub>=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	TIP32	-40			V	
		TIP32A	-60				
		TIP32B	-80				
		TIP32C	-100				
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-3A ; I <sub>B</sub> =-0.375A			-1.2	V	
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =-3A ; V <sub>CE</sub> =-4V			-1.8	V	
I <sub>CES</sub>	Collector cut-off current	TIP32	V <sub>CE</sub> =-40V ; V <sub>EB</sub> =0			-0.2	mA
		TIP32A	V <sub>CE</sub> =-60V ; V <sub>EB</sub> =0				
		TIP32B	V <sub>CE</sub> =-80V ; V <sub>EB</sub> =0				
		TIP32C	V <sub>CE</sub> =-100V ; V <sub>EB</sub> =0				
I <sub>CEO</sub>	Collector cut-off current	TIP32/32A	V <sub>CE</sub> =-30V ; I <sub>B</sub> =0			-0.3	mA
		TIP32B/32C	V <sub>CE</sub> =-60V ; I <sub>B</sub> =0				
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V ; I <sub>C</sub> =0			-1.0	mA	
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-1A ; V <sub>CE</sub> =-4V	25				
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-3A ; V <sub>CE</sub> =-4V	10		50		
f <sub>T</sub>	Transiton frequency	I <sub>C</sub> =-0.5A ; V <sub>CE</sub> =-10V	3			MHz	

## PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
L	15.7	16.1	B1	9.0	9.4
b	12.6	13.6	C1	2.2	2.6
b1	9.6	10.6	a1	0.7	0.9
a	1.22	1.32	c	0.4	0.6
E	2.34	2.74	C2	4.3	4.7

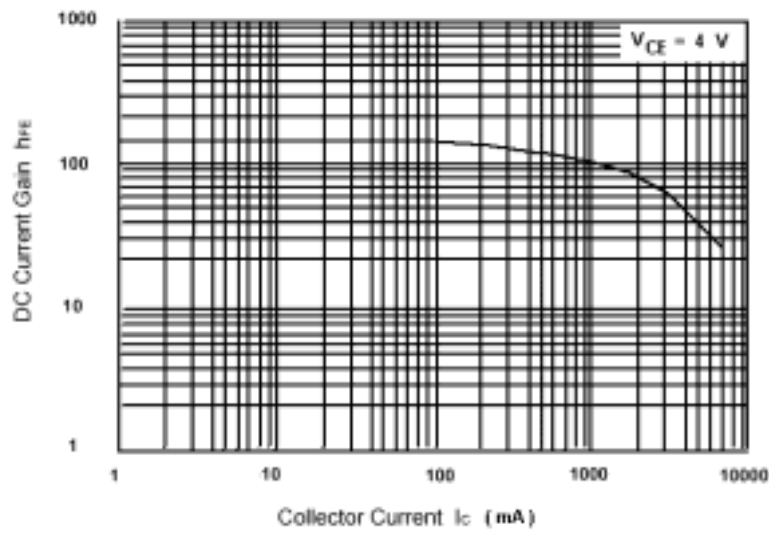


Fig.3 DC current Gain

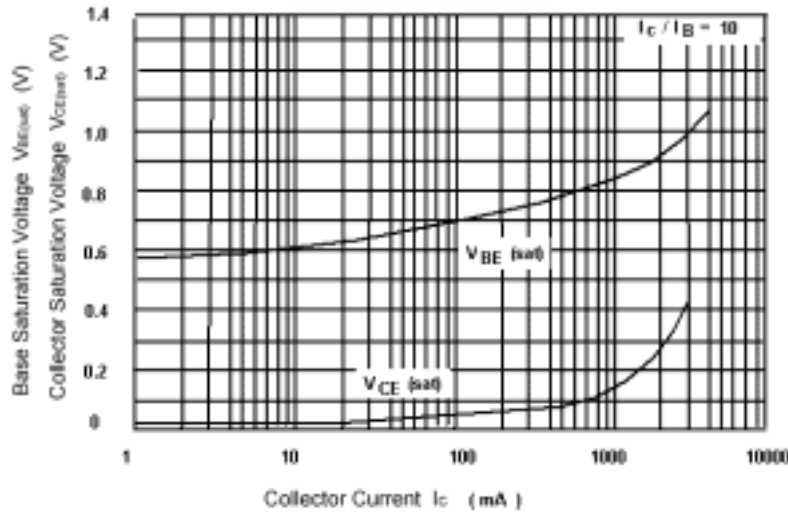


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

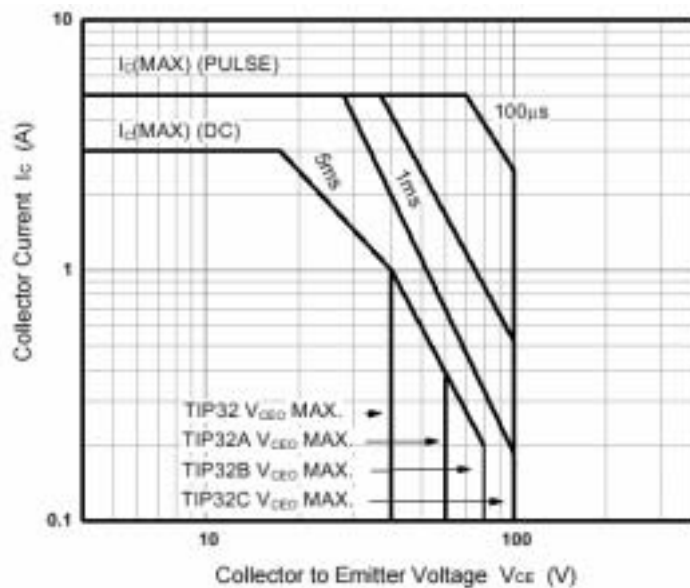


Fig.5 Safe Operating Area

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