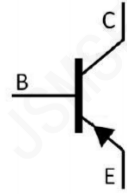
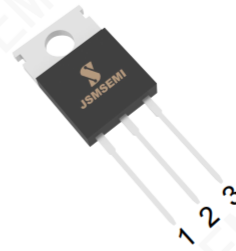


DESCRIPTION

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



APPLICATIONS

- Medium power linear and switching applications

PIN 1 : Base
 PIN 2 : Collector
 PIN 3 : Emitter

ABSOLUTE MAXIMUM RATINGS(Ta=25 °C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	TIP32	-40	V
		TIP32A	-60	
		TIP32B	-80	
		TIP32C	-100	
V _{CEO}	Collector-emitter voltage	TIP32	-40	V
		TIP32A	-60	
		TIP32B	-80	
		TIP32C	-100	
V _{EBO}	Emitter-base voltage	Open collector	-5	V
I _C	Collector current (DC)		-3	A
I _{CM}	Collector current-Pulse		-5	A
I _B	Base current		-1	A
P _C	Collector power dissipation	T _c =25°C	40	W
		T _a =25°C	2	
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-65~150	°C

CHARACTERISTICS (T_j=25°C unless otherwise specified)

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

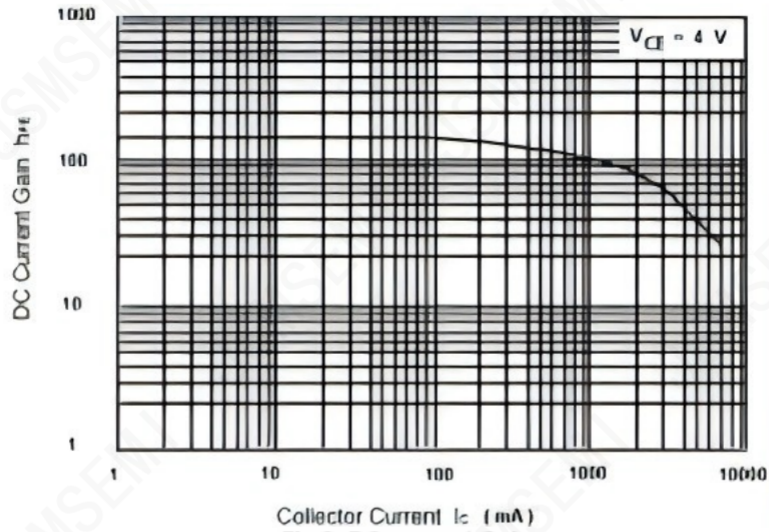


Fig.3 DC current Gain

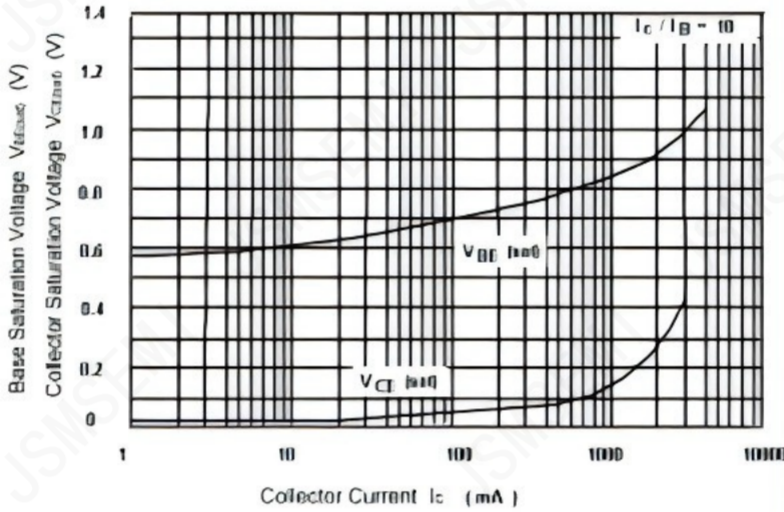


Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

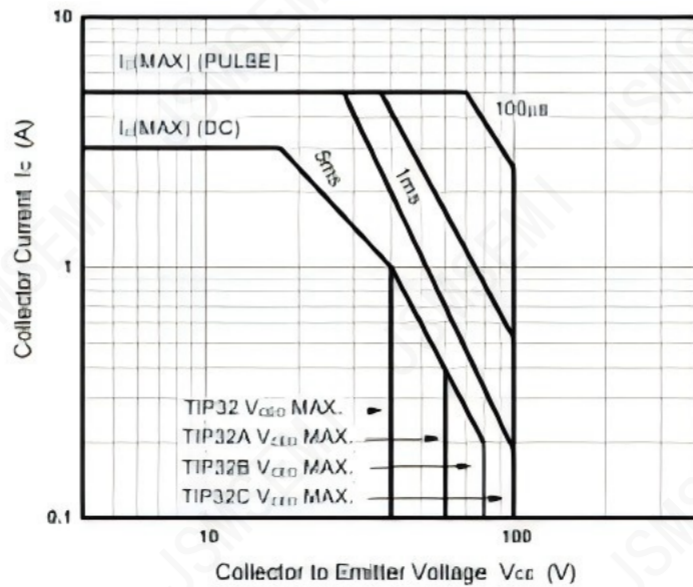
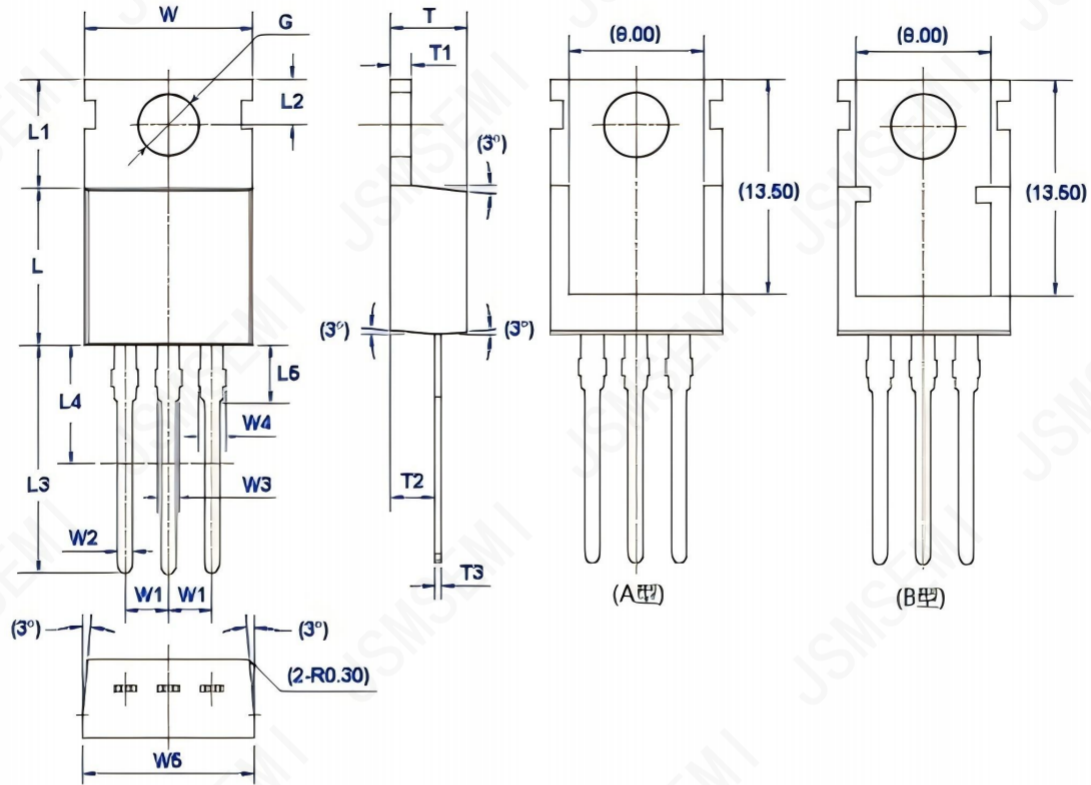


Fig.5 Safe Operating Area

PACKAGE OUTLINE



Unit: mm

Symbol	Size		Symbol	Size		Symbol	Size		Symbol	Size	
	Min	Max		Min	Max		Min	Max		Min	Max
W	9.66	10.28	W5	9.80	10.20	L4**	6.20	6.60	T3	0.45	0.60
W1	2.54 (TYP)		L	9.00	9.40	L5	2.79	3.30	G(Φ)	3.50	3.70
W2	0.70	0.95	L1	6.40	6.80	T	4.30	4.70			
W3	1.17	1.37	L2	2.70	2.90	T1	1.15	1.40			
W4*	1.32	1.72	L3	12.70	14.27	T2	2.20	2.60			