

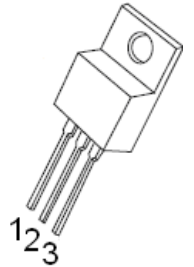


TO-220-3L Plastic-Encapsulate Transistors

TIP31/31A/31B/31C TRANSISTOR (NPN)

TO-220-3L

1. BASE
2. COLLECTOR
3. EMITTER



FEATURES

Medium Power Linear Switching Applications

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	TIP31	TIP31A	TIP31B	TIP31C	Unit
V _{CBO}	Collector-Base Voltage	40	60	80	100	V
V _{CEO}	Collector-Emitter Voltage	40	60	80	100	V
V _{EBO}	Emitter-Base Voltage	5				V
I _C	Collector Current	3				A
P _C	Collector Power Dissipation	2				W
R _{θJA}	Thermal Resistance from Junction to Ambient	62.5				
T _J	Junction Temperature	150				°C
T _{stg}	Storage Temperature	-55~+150				°C

ELECTRICAL CHARACTERISTICS (T_a=25°C unless other wise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage TIP31 TIP31A TIP31B TIP31C	V _{(BR)CBO}	I _C = 1mA, I _E =0	40 60 80 100		V
Collector-emitter breakdown voltage * TIP31 TIP31A TIP31B TIP31C	V _{CEO(sus)}	I _C = 30mA, I _B =0	40 60 80 100		V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 1mA, I _C =0	5		V
Collector cut-off current TIP31 TIP31A TIP31B TIP31C	I _{CBO}	V _{CB} =40V, I _E =0 V _{CB} =60V, I _E =0 V _{CB} =80V, I _E =0 V _{CB} =100V, I _E =0		200	μA
Collector cut-off current TIP31/31A TIP31B/31C	I _{CEO}	V _{CE} = 30V, I _B = 0 V _{CE} = 60V, I _B = 0		0.3	mA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0		1	mA
DC current gain	h _{FE(1)}	V _{CE} = 4V, I _C = 1A	25		
	h _{FE(2)}	V _{CE} =4 V, I _C = 3A	15	75	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =3A, I _B =0.375A		1.2	V
Base-emitter voltage	V _{BE(on)}	V _{CE} = 4V, I _C =3A		1.8	V
Transition frequency	f _T	V _{CE} =10V , I _C =0.5A	3		MHz

* Pulse Test: PW≤300μs, Duty Cycle≤2%.

Typical Characteristics

TIP31/31A/31B/31C

