

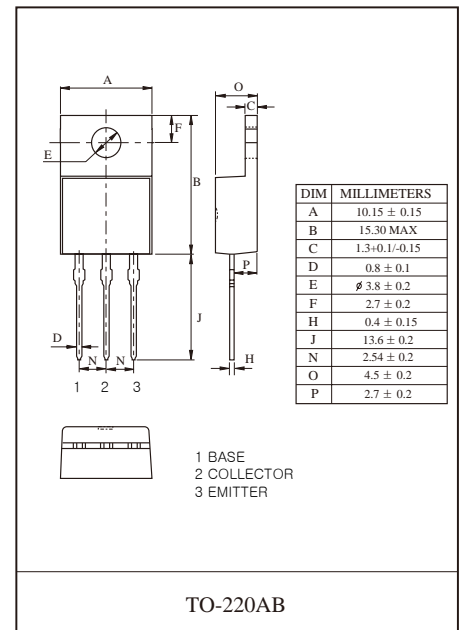
TIP31/31A/31B/31C TRANSISTOR (NPN)

FEATURES

Medium Power Linear Switching Applications

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

Symbol	Parameter	TIP31	TIP31A	TP31B	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 otherwise 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 Cycles≤2%.

Typical Characteristics

