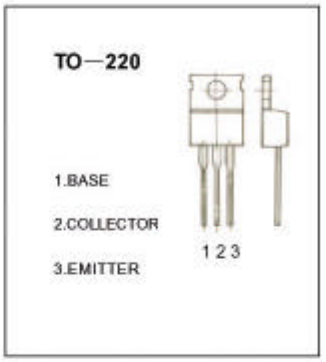
TO-220 Plastic-Encapsulate Transistors

TIP31/31A/31B/31C TRANSISTOR（NPN）



FEATURES

Power dissipation

P_{CM} : 2 W（Tamb=25℃）

Collector current

I_{CM} : 3 A

Collector-base voltage

$V_{(BR)CBO}$: TIP31 : 40 V
TIP31A : 60 V
TIP31B : 80 V
TIP31C : 100 V

Operating and storage junction temperature range

T_J, T_{stg}: -55℃ to +150℃

ELECTRICAL CHARACTERISTICS（Tamb=25℃ unless otherwise specified）

Parameter		Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	31 31A 31B 31C	$V(BR)_{CBO}$	I_C= 100 μA, I_E=0	40 60 80 100		V
Collector-emitter breakdown voltage	31 31A 31B 31C	$V(BR)_{CEO}$	I_C= 30 mA, I_B=0	40 60 80 100		V
Emitter-base breakdown voltage		$V(BR)_{EBO}$	I_E= 100 μA, I_C=0	5		V
Collector cut-off current	31 31A 31B 31C	I_{CBO}	V_{CB}= 40 V, I_E=0 V_{CB}= 60 V, I_E=0 V_{CB}= 80 V, I_E=0 V_{CB}= 100 V, I_E=0		0.2	mA
Collector cut-off curremt	31/31A 31B/31C	I_{CEO}	V_{CE}= 30V , I_B= 0 V_{CE}= 60V , I_B= 0		0.3 0.3	mA
Emitter cut-off current		I_{EBO}	V_{EB}=5 V, I_C=0		1	mA
DC current gain		$h_{FE(1)}$	V_{CE}= 4V, I_C= 3A	10	50	
		$h_{FE(2)}$	V_{CE}= 4 V, I_C= 1A	25		
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=3A, I_B=375mA		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=500mA	3		MHz