

TIP31/31A/31B/31C

NPN Power Transistors

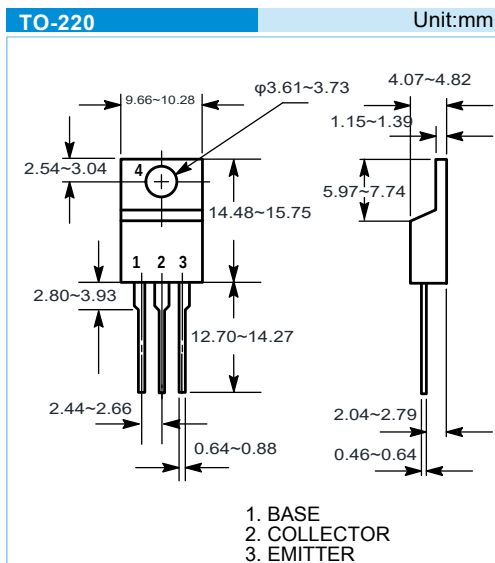
VOLTAGE	40 to 100 Volt	POWER	2 Watt
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FEATURES

- Medium Power Linear Switching Applications
- Lead free in compliance with EU RoHS

MECHANICAL DATA

- Case Material: Molded Plastic.
- UL Flammability Classification Rating 94V-0



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

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
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62.5				
T_j	Junction Temperature	150				°C
T_{stg}	Storage Temperature	-55~+150				°C

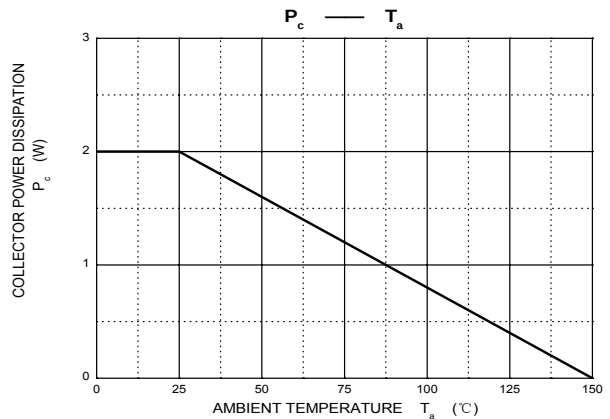
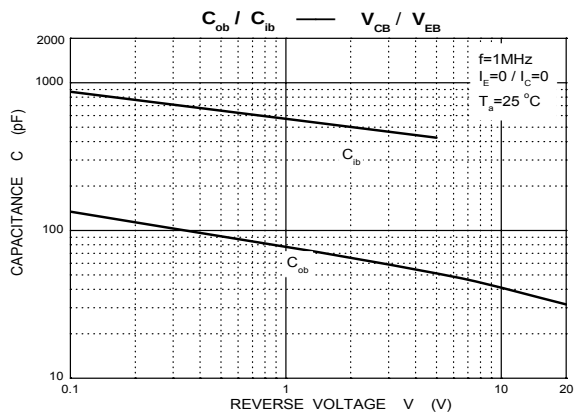
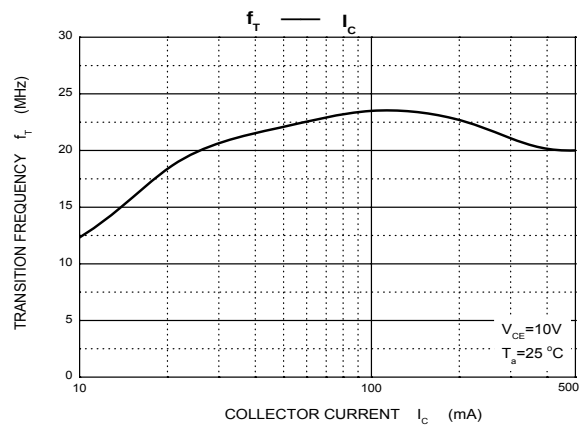
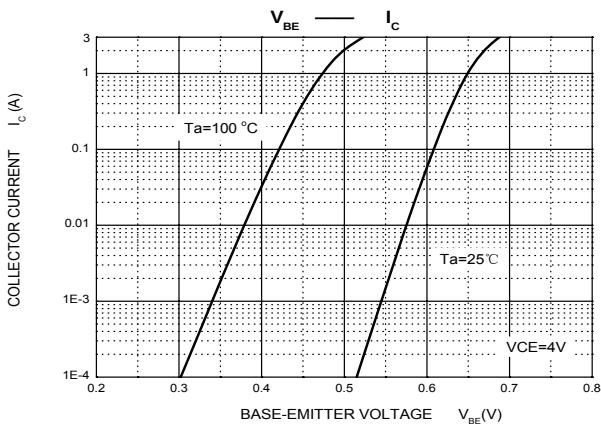
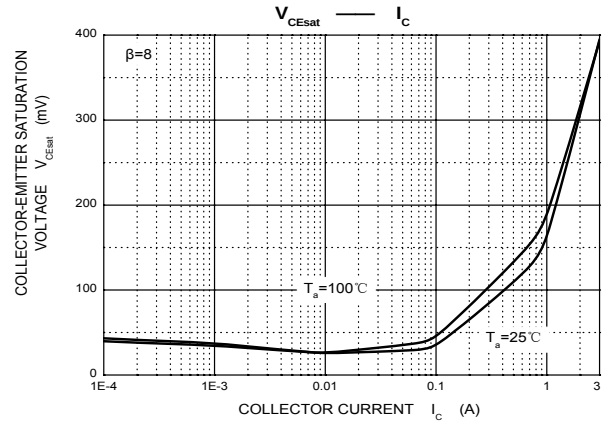
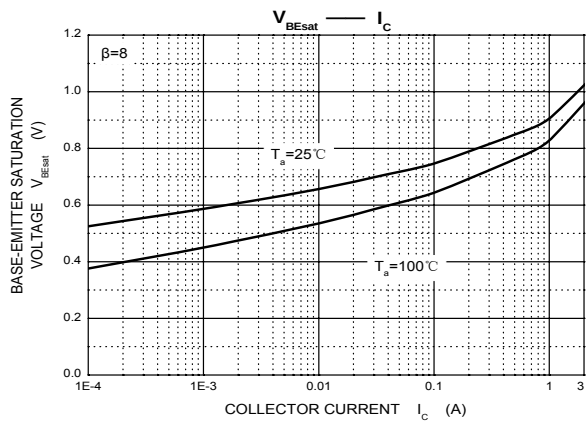
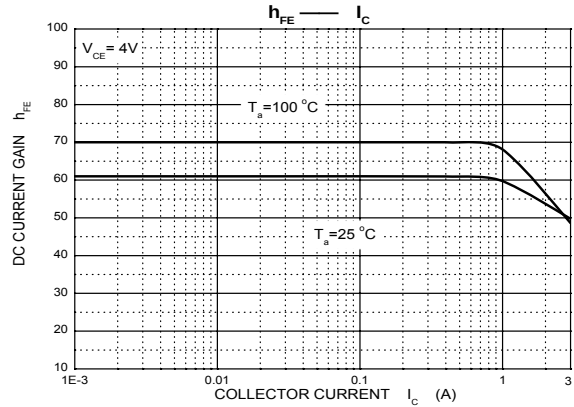
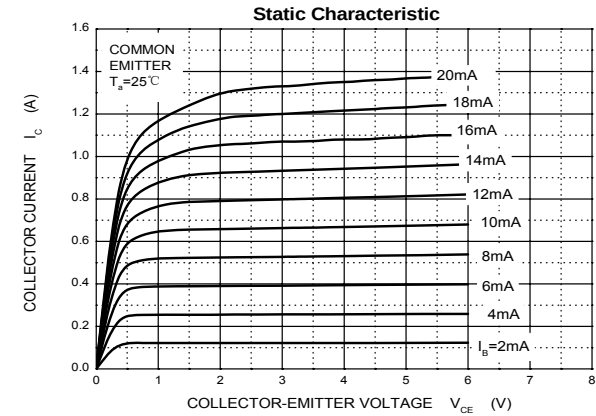
TIP31/31A/31B/31C

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

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

TIP31/31A/31B/31C

Typical Characteristics



TIP31/31A/31B/31C

ORDER INFORMATION

- Packing information

Part Number	Case	Reel Size	QUANTITY
TIP31/31A/31B/31C	TO-220	TUBE	1000/BOX