

TIP31C

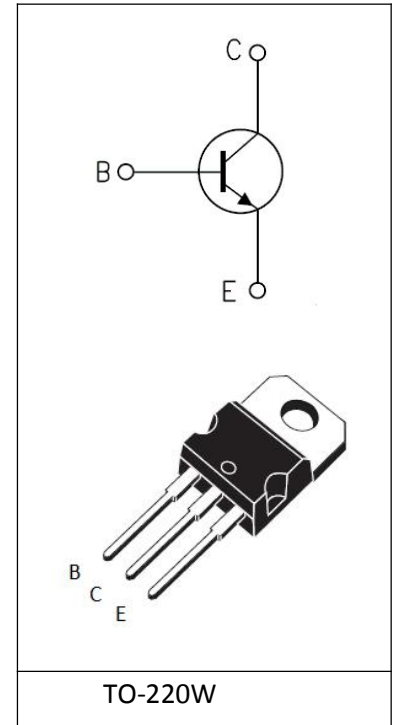
TIP31C, the base island technology NPN power transistor, make this device suitable for audio, power linear and switching applications. The complementary PNP type is TIP32C

Features

- Complementary PNP-NPN devices
- h_{FE} grouping
- h_{FE} improved linearity
- RoHS product

Applications

- General purpose circuits
- Audio amplifier
- Power linear and switching



Absolute Maximum Ratings ($T_a=25^{\circ}C$ unless otherwise noted):

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current(DC)	I_C	3	A
Collector Peak Current($t_p < 5ms$)	I_{CM}	5	A
Base Current(DC)	I_B	1	A
Base Peak Current($t_p < 5ms$)	I_{BM}	2	A
Collector Power Dissipation	P_C	40	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-65~150	$^{\circ}C$

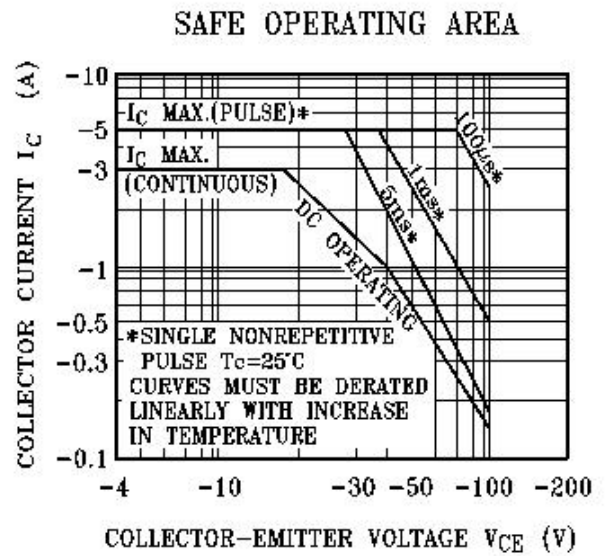
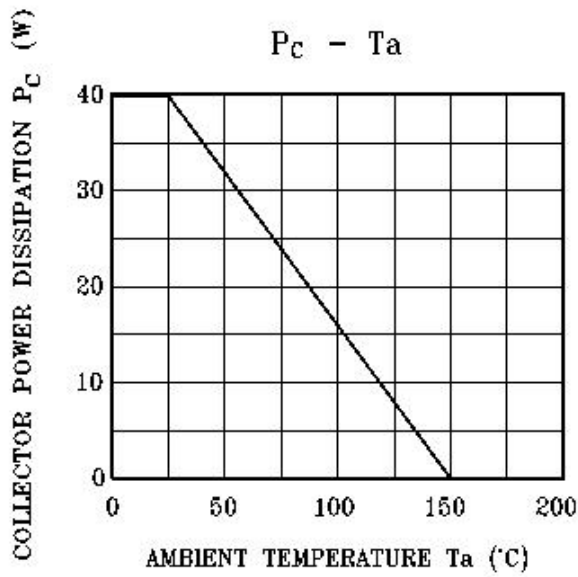
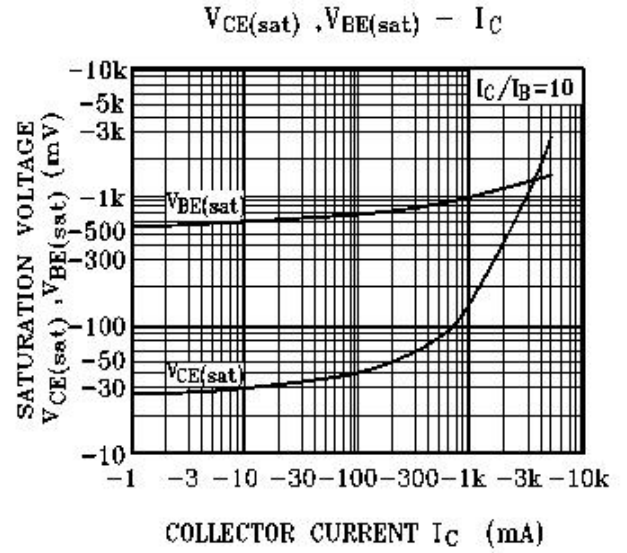
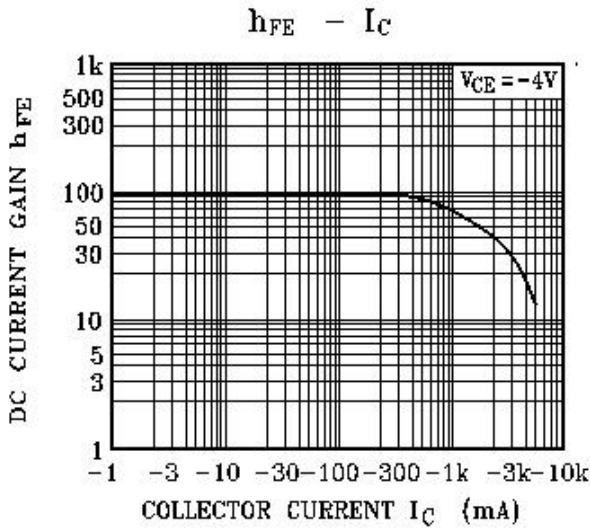
Electrical Characteristics ($T_a=25^{\circ}C$ unless otherwise noted):

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Cut-off Current	I_{CBO}	$V_{CB}=100V, I_E=0$			0.2	mA
Collector-Emitter Cut-off Current	I_{CEO}	$V_{CE}=100V, I_B=0$			0.2	mA
Emitter-Base Cut-off Current	I_{EBO}	$V_{EB}=5V, I_C=0$			1	mA
Collector-Base Breakdown Voltage	V_{CBO}	$I_C=0.1mA$	100			V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=1mA$	100			V
Emitter-Base Breakdown Voltage	V_{EBO}	$I_E=100uA$	5			V
DC Current Gain	h_{FE1}	$V_{CE}=5V, I_C=1A$	25			
	h_{FE2}	$V_{CE}=5V, I_C=3A$	10		50	
Collector-Emitter Saturation Voltage	V_{CEsat}	$I_C=6A, I_B=0.6A$			1.2	V
Transition Frequency	f_T	$V_{CE}=10V, I_{CE}=0.5A$	3			Mhz

Thermal Characteristics

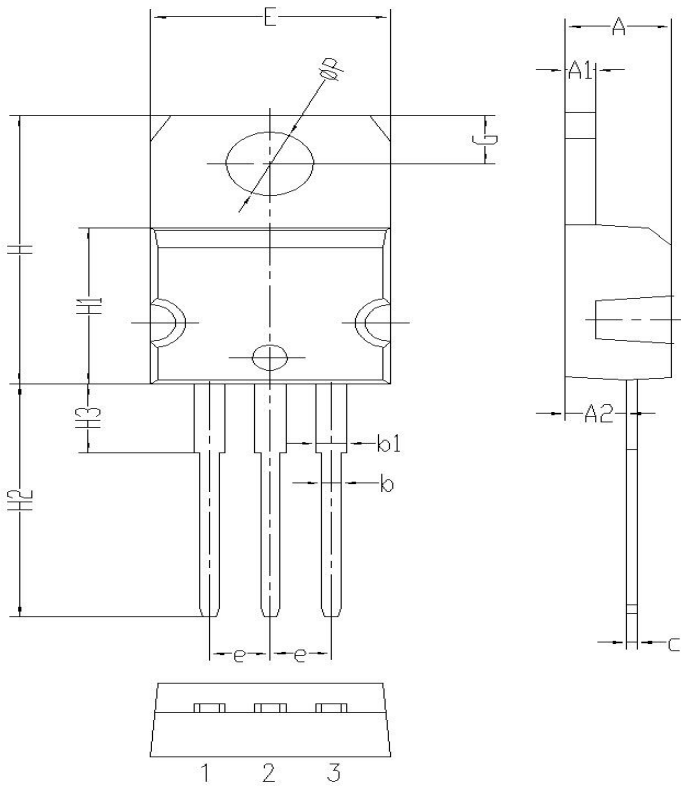
Symbol	Parameter	Typ.	Units
$R_{\theta JC}$	Junction-to-Case	3.0	°C/W

Typical Characteristics



Package Information

TO-220W PACKAGE



Symbol	单位 mm		
	Min	Nom	Max
A	4.05	4.25	4.45
A1	1.2	1.3	1.4
A2	2.35	2.45	2.55
b	0.60	0.8	1.00
b1	1.12	1.32	1.52
c	0.25	0.45	0.65
e	2.34	2.54	2.74
E	9.8	10.0	10.2
H	15.1	15.3	15.5
H1	8.60	8.8	9.00
H2	13.0	13.5	14.0
H3	3.80	4.0	4.20
G	2.60	2.8	3.00
ΦP	3.60	3.8	4.00