



Micro Commercial Components

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TIP31/A/B/C

Features

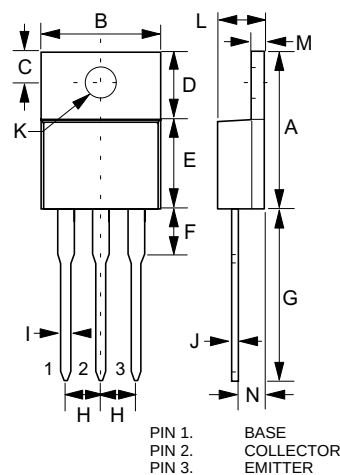
- TO-220 package
- The complementary PNP types are the TIP32 respectively
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Marking : Part Number

Silicon NPN Power Transistors

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

Symbol	Parameter	Value	Unit
V_{CBO} TIP31 TIP31A TIP31B TIP31C	Collector-base voltage (Open emitter)	40 60 80 100	V
V_{CEO} TIP31 TIP31A TIP31B TIP31C	Collector-emitter voltage (Open base)	40 60 80 100	V
V_{EBO}	Emitter-base Voltage (Open collector)	5	V
I_C	Collector Current	3	A
I_{CM}	Collector Current Pulse	5	A
I_B	Base Current	1	A
P_C	Total Device Dissipation($T_a=25^\circ\text{C}$)	2	W
	Total Device Dissipation($T_c=25^\circ\text{C}$)	40	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-65 to +150	$^\circ\text{C}$

TO-220AB



Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
$V_{CE(SUS)}$ TIP31 TIP31A TIP31B TIP31C	Collector-emitter sustaining voltage ($I_C=30\text{mA}$; $I_B=0$)	40 60 80 100		V
$V_{CE(sat)}$	Collector-emitter Saturation Voltage ($I_C=3A$; $I_B=0.375A$)		1.2	V
V_{BE}	Base-emitter Voltage ($I_C=3A$; $V_{CE}=4V$)		1.8	V
I_{CES} TIP31 TIP31A TIP31B TIP31C	Collector cut-off current ($V_{CE}=40V$; $V_{EB}=0$) ($V_{CE}=60V$; $V_{EB}=0$) ($V_{CE}=80V$; $V_{EB}=0$) ($V_{CE}=100V$; $V_{EB}=0$)	0.2		mA
I_{CEO} TIP31/31A TIP31B/31C	Collector cut-off current ($V_{CE}=30V$; $V_{EB}=0$) ($V_{CE}=60V$; $V_{EB}=0$)	0.3		mA
I_{EBO}	Emitter cut-off current ($V_{EB}=5V$; $I_C=0$)		1.0	mA
H_{fe}	DC current gain ($I_C=1A$; $V_{CE}=4V$) ($I_C=3A$; $V_{CE}=4V$)	25 10	50	
f_T	Transition frequency ($I_C=0.5A$; $V_{CE}=10V$)	3		MHZ

DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.560	.625	14.22	15.88	
B	.380	.420	9.65	10.67	
C	.100	.135	2.54	3.43	
D	.230	.270	5.84	6.86	
E	.335	.368	8.50	9.35	
F	-----	.250	-----	6.35	
G	.500	.580	12.70	14.73	
H	.090	.110	2.29	2.79	
I	.020	.045	0.51	1.14	
J	.012	.025	0.30	0.64	
K	.139	.161	3.53	4.09	Ø
L	.140	.190	3.56	4.83	
M	.045	.055	1.14	1.40	
N	.080	.115	2.03	2.92	

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