



Micro Commercial Components

Micro Commercial Components  
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## TIP31/A/B/C

### Features

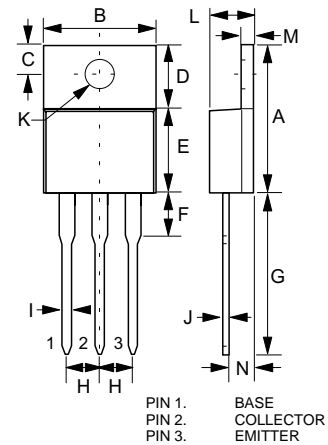
- TO-220 package
- The complementary PNP types are the TIP32 respectively
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Marking : Part Number

### 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
$V_{CE0}$ 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 @ $25^\circ\text{C}$ Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
$V_{CE0(SUS)}$ 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
$H_{ie}$	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

DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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	∅
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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