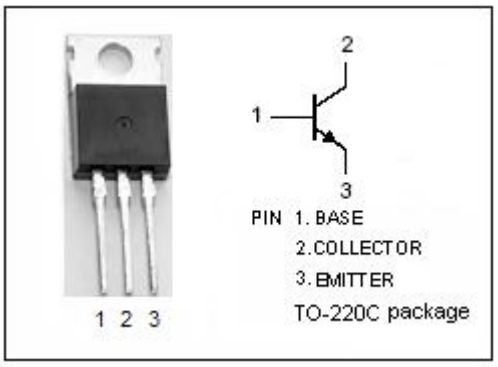
SPTECH Silicon NPN Power Transistor

DESCRIPTION

- DC Current Gain -h_{FE} = 25(Min)@ I_C= 1.0A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 40V(Min)- TIP31; 60V(Min)- TIP31A
  80V(Min)- TIP31B; 100V(Min)- TIP31C
- Complement to Type TIP32/32A/32B/32C

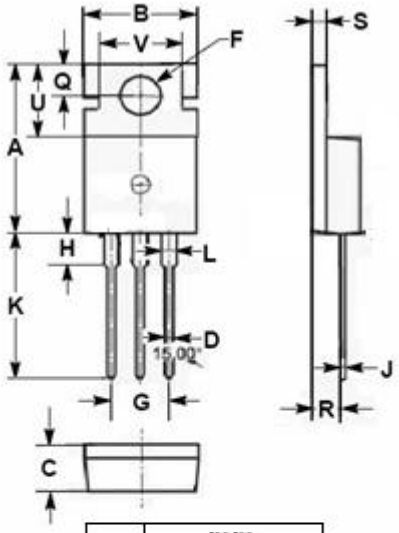


APPLICATIONS

- Designed for use in general purpose amplifier and switching applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	TIP31	40	V
		TIP31A	60	
		TIP31B	80	
		TIP31C	100	
V_{CEO}	Collector-Emitter Voltage	TIP31	40	V
		TIP31A	60	
		TIP31B	80	
		TIP31C	100	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		3	A
I_{CM}	Collector Current-Pulse		5	A
I_B	Base Current		1	A
P_C	Collector Power Dissipation T_C=25℃		40	W
	Collector Power Dissipation T_a=25℃		2	
T_j	Junction Temperature		150	℃
T_{stg}	Storage Ttemperature Range		-65~150	℃



DIM	mm MIN	MAX
A	15.50	15.90
B	9.90	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	13.00	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

SPTECH Silicon NPN Power Transistor

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	TIP31	I_C= 30mA; I_B= 0	40		V
		TIP31A		60		
		TIP31B		80		
		TIP31C		100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C= 3A; I_B= 0.375A		1.2	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 3A ; V_{CE}= 4V		1.8	V
I_{CES}	Collector Cutoff Current	TIP31	V_{CE}= 40V; V_{EB}= 0		0.2	mA
		TIP31A	V_{CE}= 60V; V_{EB}= 0			
		TIP31B	V_{CE}= 80V; V_{EB}= 0			
		TIP31C	V_{CE}= 100V; V_{EB}= 0			
I_{CEO}	Collector Cutoff Current	TIP31/31A	V_{CE}= 30V; I_B= 0		0.3	mA
		TIP31B/31C	V_{CE}= 60V; I_B= 0			
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C= 0		1.0	mA
h_{FE-1}	DC Current Gain		I_C= 1A ; V_{CE}= 4V	25		
h_{FE-2}	DC Current Gain		I_C= 3A ; V_{CE}= 4V	10	50	
f_T	Current-Gain—Bandwidth Product		I_C= 0.5A ; V_{CE}= 10V	3		MHz