

SPTECH Silicon NPN Power Transistors TIP31/31A/31B/31C

DESCRIPTION

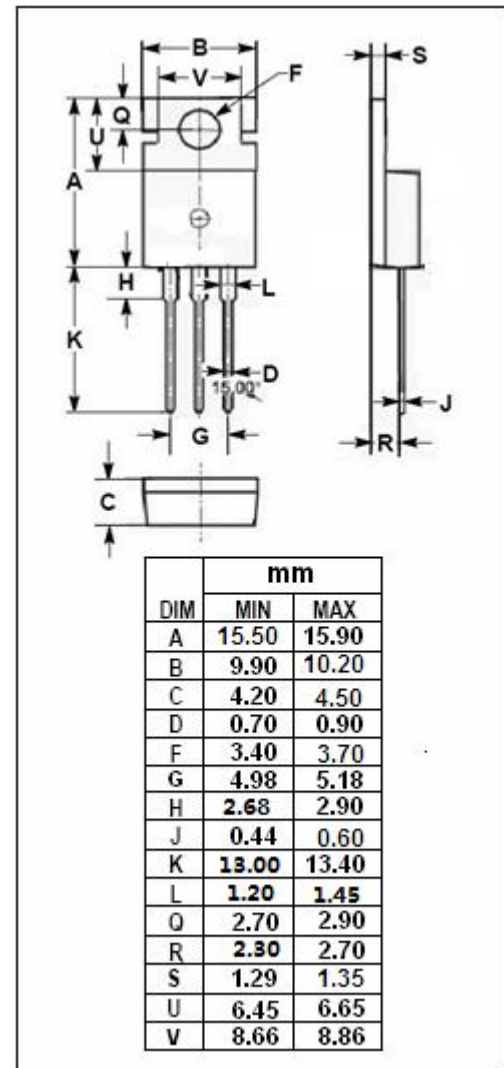
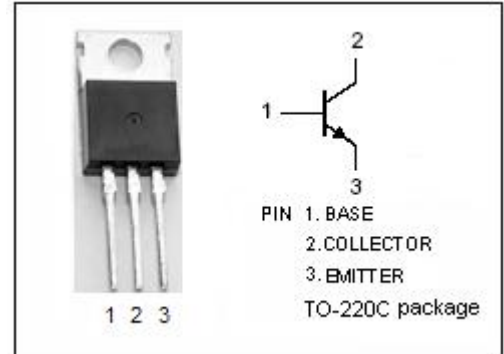
- DC Current Gain $-h_{FE} = 25(\text{Min})@ I_C = 1.0\text{A}$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 40\text{V}(\text{Min})$ - TIP31; $60\text{V}(\text{Min})$ - TIP31A
80V(Min)- TIP31B; $100\text{V}(\text{Min})$ - TIP31C
- Complement to Type TIP32/32A/32B/32C

APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	TIP31	40
		TIP31A	60
		TIP31B	80
		TIP31C	100
V_{CEO}	Collector-Emitter Voltage	TIP31	40
		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 $T_c=25^\circ\text{C}$	40	W
	Collector Power Dissipation $T_a=25^\circ\text{C}$	2	
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$ unless otherwise specified

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