

isc Silicon NPN Power Transistors

TIP31A

DESCRIPTION

- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.2V(\text{Max.})@I_C = 3A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V(\text{Min})$
- Complement to Type TIP32A
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

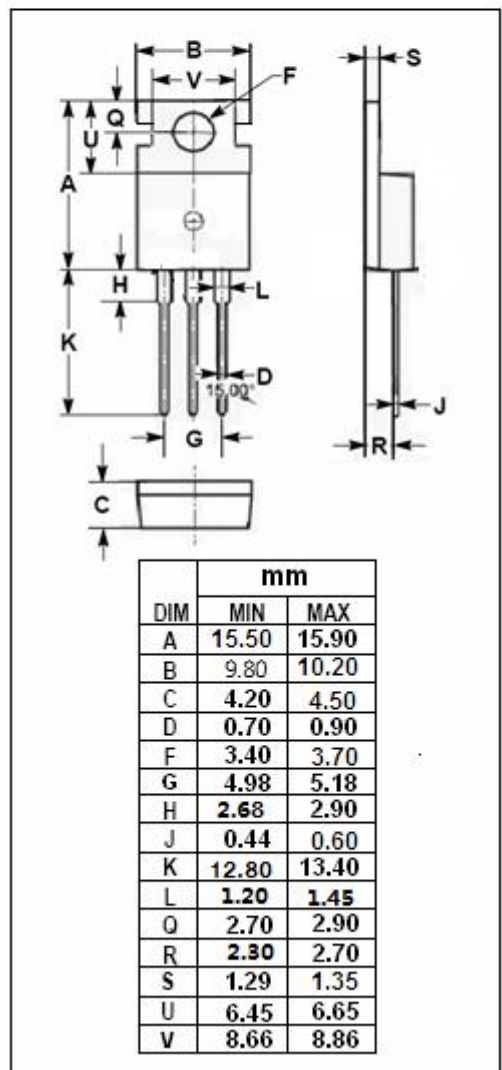
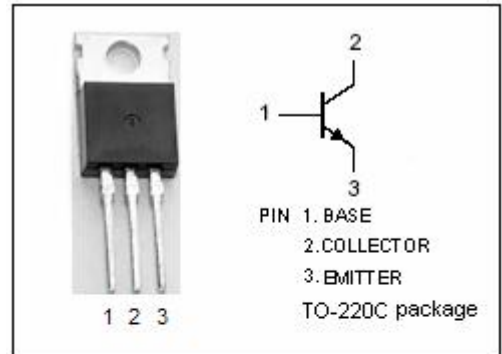
- Designed for use in general purpose amplifier and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
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
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	3.125	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 30mA; I _B = 0	60		V
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	V _{CE} = 60V; V _{EB} = 0		0.2	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = 30V; I _B = 0		0.3	mA
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

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