

# isc Silicon NPN Power Transistor

# 2N6102

## DESCRIPTION

- DC Current Gain -  
:  $h_{FE} = 20-80 @ I_C = 5A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 40V(\text{Min})$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

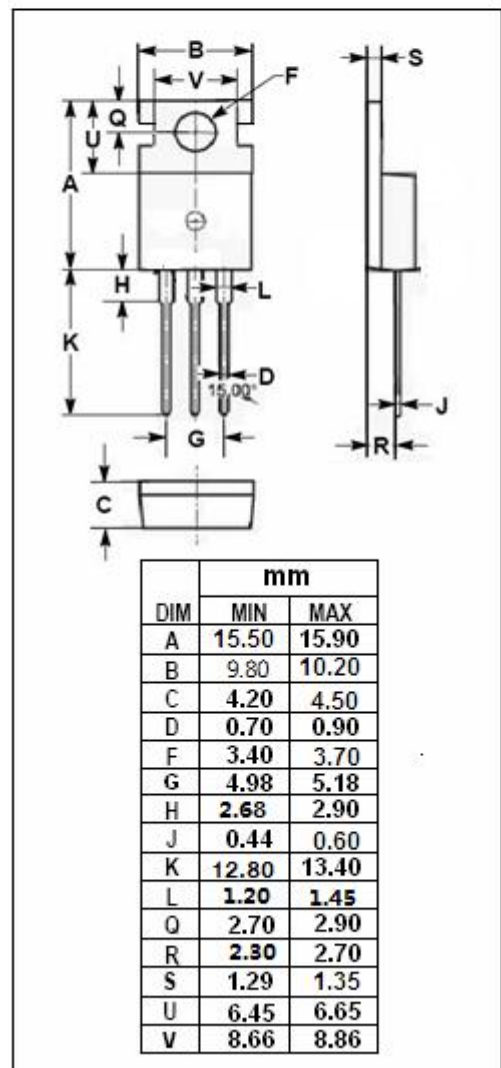
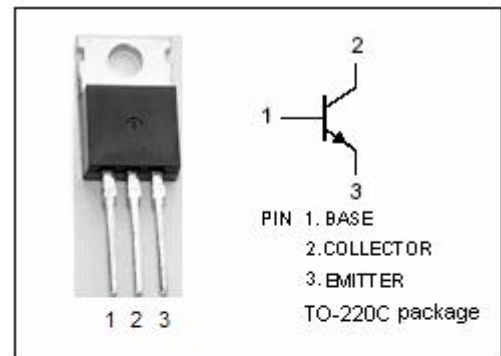
- Designed for use in general-purpose amplifier and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	45	V
$V_{CEO}$	Collector-Emitter Voltage	40	V
$V_{CER}$	Collector-Emitter Voltage $R_{BE} = 100 \Omega$	45	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	16	A
$I_B$	Base Current-Continuous	4	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	75	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	1.67	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA; I <sub>B</sub> = 0	40		V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 16A; I <sub>B</sub> = 3.2A		2.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 8A ; V <sub>CE</sub> = 4V		1.7	V
I <sub>CEX</sub>	Collector Cutoff Current	V <sub>CE</sub> = 45V; V <sub>BE</sub> = -1.5V V <sub>CE</sub> = 40V; V <sub>BE</sub> = -1.5V; T <sub>C</sub> =150°C		2.0 10	mA
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 40V; I <sub>B</sub> = 0		2.0	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0		1.0	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 8A ; V <sub>CE</sub> = 4V	15	60	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 16A ; V <sub>CE</sub> = 4V	5		

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