

# isc Silicon NPN Power Transistor

# 2N6291

## DESCRIPTION

- DC Current Gain-  
:  $h_{FE} = 30-150 @ I_C = 2.5A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 50V(\text{Min})$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

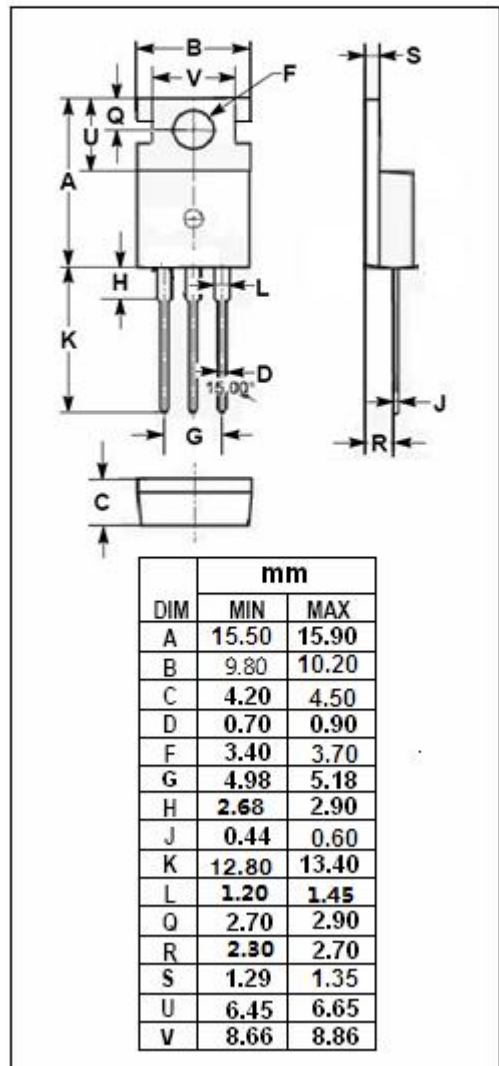
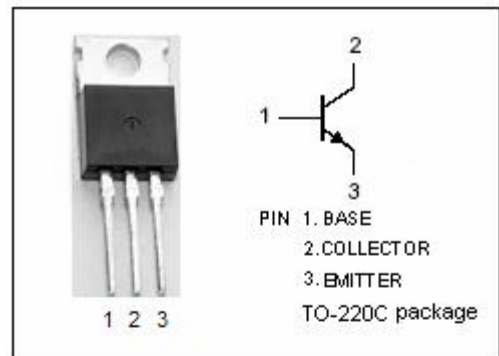
- Designed for use in general-purpose amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	7	A
$I_{CM}$	Collector Current-Peak	10	A
$I_B$	Base Current	3	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	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>CE0(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA ; I <sub>B</sub> = 0	50		V
V <sub>CE(sat) -1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2.5A; I <sub>B</sub> = 0.25A		1.0	V
V <sub>CE(sat) -2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 7A; I <sub>B</sub> = 3A		3.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 2.5A ; V <sub>CE</sub> = 4V		1.5	V
I <sub>CEX</sub>	Collector Cutoff Current	V <sub>CE</sub> = 60V; V <sub>BE(off)</sub> = 1.5V V <sub>CE</sub> = 50V; V <sub>BE(off)</sub> = 1.5V; T <sub>C</sub> = 150°C		0.1 2.0	mA
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 50V; I <sub>B</sub> = 0		1.0	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> = 2.5A ; V <sub>CE</sub> = 4V	30	150	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 7A ; V <sub>CE</sub> = 4V	2.3		
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 10V; f <sub>test</sub> = 1MHz		250	pF
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.5A ; V <sub>CE</sub> = 4V; f <sub>test</sub> = 1MHz	10		MHz

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