

# isc Silicon NPN Power Transistor

# MJ15011

## DESCRIPTION

- Excellent Safe Operating Area
- DC Current Gain-  
:  $h_{FE} = 20(\text{Min.}) @ I_C = 2A$
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = 2.5V(\text{Max}) @ I_C = 4A$
- Complement to the PNP MJ15012
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

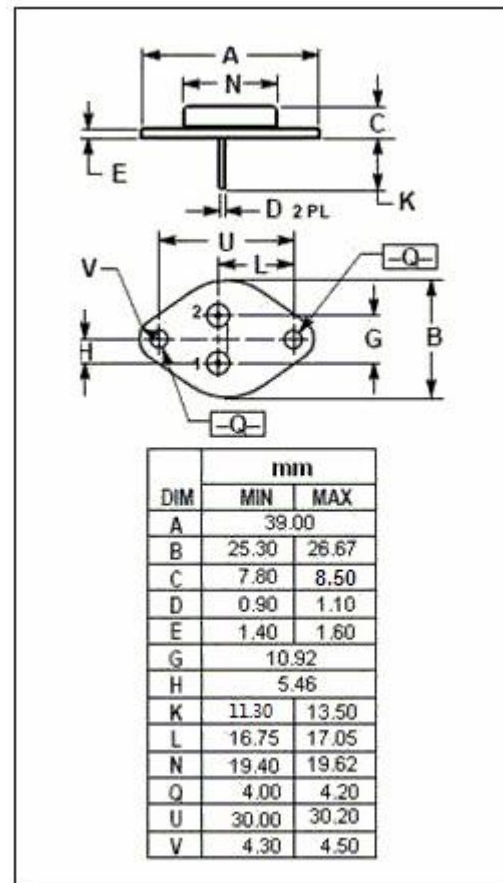
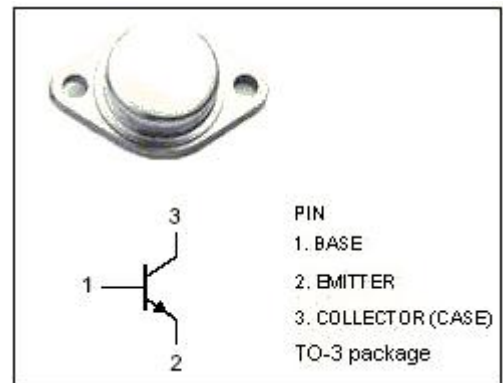
- Designed for high power audio, disk head positioners, and other linear applications. These devices can also be used in power switching circuits such as relay or solenoid drivers, DC-DC converters or inverters.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CEO(\text{SUS})}$	Collector-Emitter Voltage	250	V
$V_{CEX}$	Collector-Emitter Voltage	250	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	15	A
$I_B$	Base Current-Continuous	2	A
$I_{BM}$	Base Current-Peak	5	A
$I_E$	Emitter Current-Continuous	-12	A
$I_{EM}$	Emitter Current-Peak	-20	A
$P_D$	Total Power Dissipation@ $T_C=25^\circ\text{C}$	200	W
$T_j$	Junction Temperature	200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-65~200	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.875	$^\circ\text{C/W}$



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**MJ15011**
**ELECTRICAL CHARACTERISTICS**
**T<sub>j</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	250		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.2A		0.8	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 0.4A		2.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 4A ; V <sub>CE</sub> = 2V		2.0	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 200V; I <sub>B</sub> = 0		1.0	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 250V; I <sub>E</sub> = 0		0.5	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0		0.5	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 2A ; V <sub>CE</sub> = 2V	20	100	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 4A ; V <sub>CE</sub> = 2V	5		
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 10V; f <sub>test</sub> = 1.0MHZ	500		pF

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