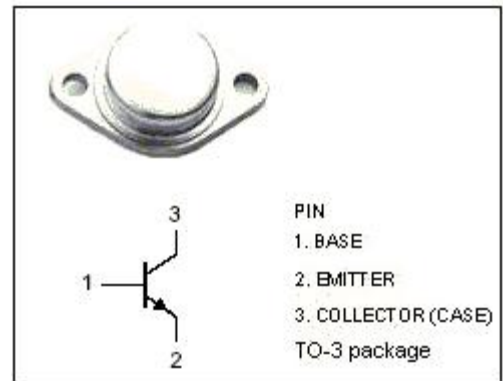


**isc Silicon NPN Power Transistor**
**MJ15015**
**DESCRIPTION**

- Excellent Safe Operating Area
- DC Current Gain-  
:  $h_{FE} = 20-70 @ I_C = 4A, V_{CE} = 4V$
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)} = 1.1 V(\text{Max}) @ I_C = 4A$
- Complement to the PNP MJ15016
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

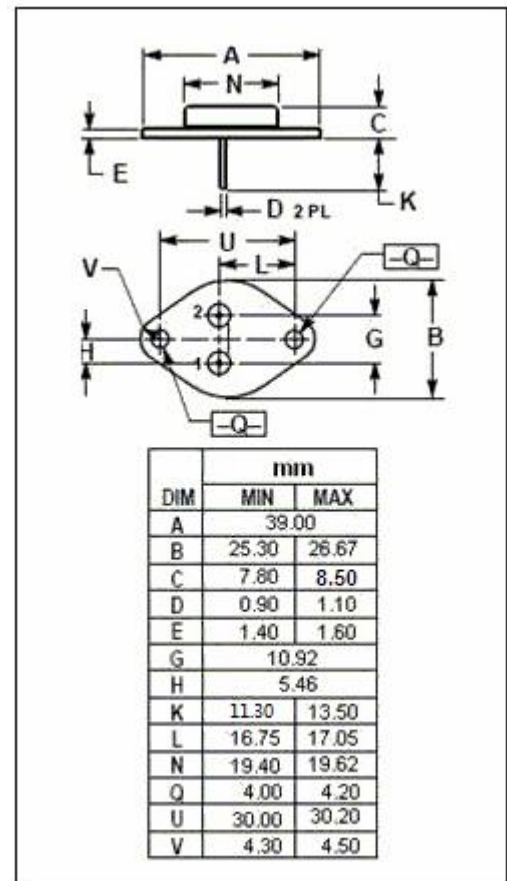
- Designed for high power audio, stepping motor and other linear applications, and can also be used in power switching circuits such as relay or solenoid drivers, DC-DC converters, inverters and etc.


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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	200	V
$V_{CEV}$	Collector-Emitter Voltage Base Reversed Biased	200	V
$V_{CEO}$	Collector-Emitter Voltage	120	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	15	A
$I_B$	Base Current	7	A
$P_D$	Total Power Dissipation@ $T_c=25^\circ\text{C}$	180	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	0.98	$^\circ\text{C/W}$



## isc Silicon NPN Power Transistor

MJ15015

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>CE(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA ; I <sub>B</sub> = 0	120		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 0.4A		1.1	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10A; I <sub>B</sub> = 3.3A		3.0	V
V <sub>CE(sat)-3</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 15A; I <sub>B</sub> = 7.0A		5.0	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 4A ; V <sub>CE</sub> = 4V		1.8	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 60V; V <sub>BE(off)</sub> = 0		0.1	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 200; I <sub>E</sub> = 0 V <sub>CB</sub> = 200; I <sub>E</sub> = 0V; T <sub>C</sub> =150°C		1 5	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 7V; I <sub>C</sub> = 0		0.2	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 4A ; V <sub>CE</sub> = 2V	10	70	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 4A ; V <sub>CE</sub> = 4V	20	70	
h <sub>FE-3</sub>	DC Current Gain	I <sub>C</sub> = 10A ; V <sub>CE</sub> = 4V	5		
I <sub>s/b</sub>	Second Breakdown Collector Current with Base Forward Biased	V <sub>CE</sub> = 60V, t= 0.5 s, Nonrepetitive	3		A
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 10V; f <sub>test</sub> = 1.0MHz	60	600	pF
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 1A ; V <sub>CE</sub> = 4V; f <sub>test</sub> = 1.0MHz	0.8		MHz

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