

# isc Silicon NPN Power Transistor

# MJ16014

## DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 450V(\text{Min})$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

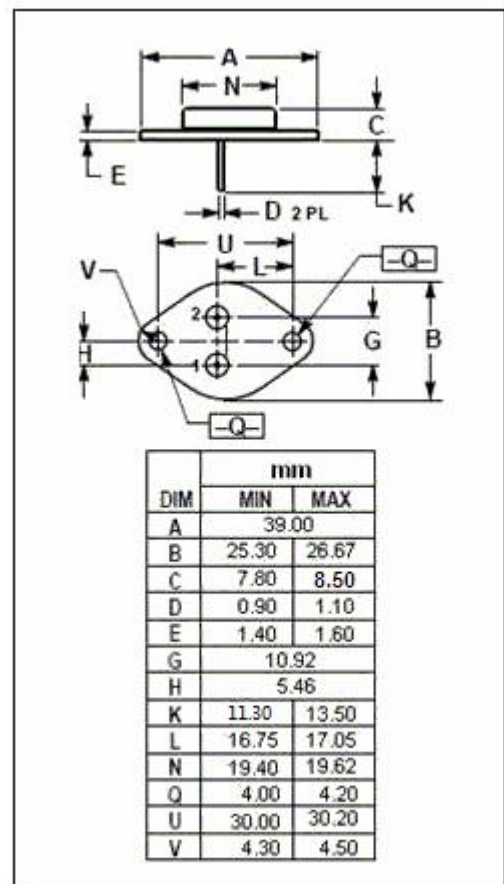
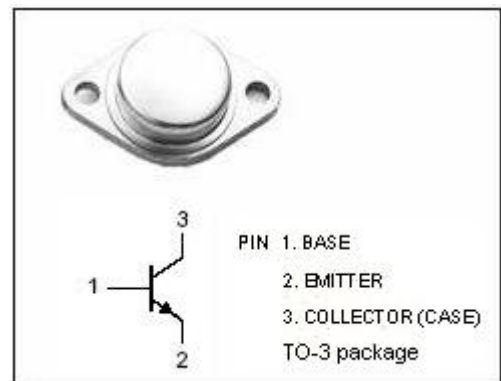
- Designed for high-voltage ,high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line operated switch-mode applications.  
Typical applications:
- Switching regulators
- Inverters
- Solenoid and relay drivers
- Motor controls
- Deflection circuits

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector- Base Voltage	850	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	450	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	20	A
$I_{CM}$	Collector Current-Peak	30	A
$I_B$	Base Current-Continuous	10	A
$I_{BM}$	Base Current-Peak	20	A
$P_C$	Collector Power Dissipation@ $T_c=25^\circ\text{C}$	250	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	0.7	$^\circ\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> =50mA ; I <sub>B</sub> =0	450			V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10A; I <sub>B</sub> = 1.3A			2.5	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 15A; I <sub>B</sub> = 2A I <sub>C</sub> = 15A; I <sub>B</sub> = 2A, T <sub>C</sub> =100°C			3.0 3.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 15A; I <sub>B</sub> = 2A I <sub>C</sub> = 15A; I <sub>B</sub> = 2A, T <sub>C</sub> =100°C			1.5 1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB0</sub> =850V; I <sub>E</sub> =0 V <sub>CB0</sub> =850V; I <sub>E</sub> =0; T <sub>C</sub> =100°C			0.25 1.5	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 6V; I <sub>C</sub> =0			1.0	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 20A ; V <sub>CE</sub> = 5V	5			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f <sub>test</sub> =1.0kHz		500		pF

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