

**isc Silicon NPN Power Transistor**
**MJE13007A**
**DESCRIPTION**

- Collector–Emitter Sustaining Voltage  
:  $V_{CEO(SUS)} = 400V(\text{Min.})$
- Collector Saturation Voltage  
:  $V_{CE(sat)} = 2.0(\text{Max}) @ I_C = 5.0A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

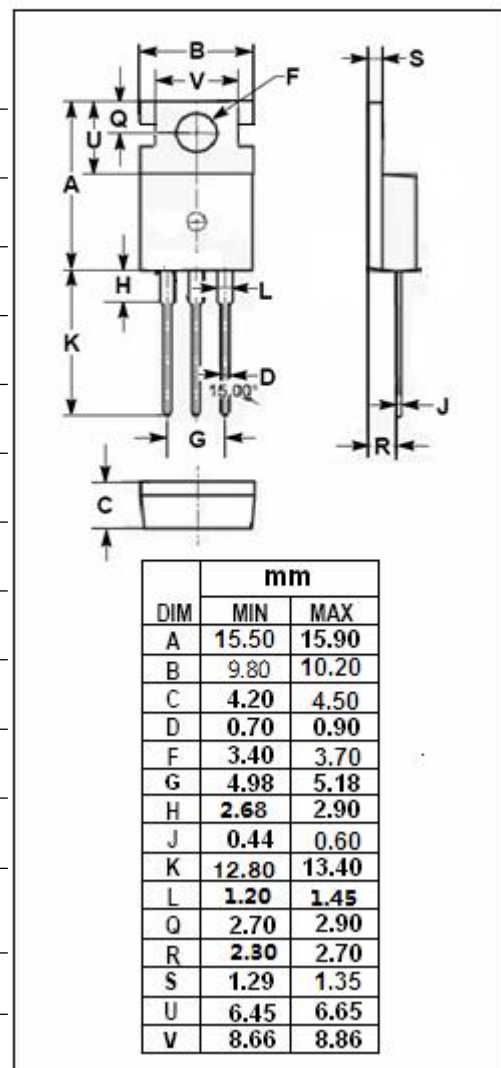
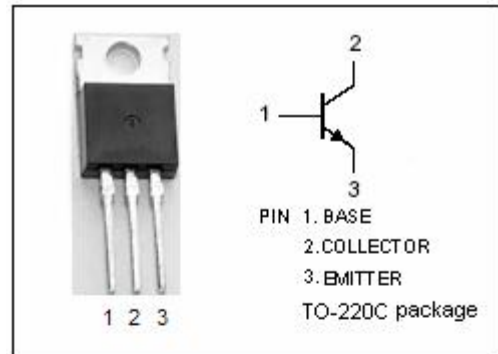
- Designed for use in high-voltage, high-speed.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CEV}$	Collector-Emitter Voltage	850	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current-Continuous	8	A
$I_{CM}$	Collector Current-peak	16	A
$I_B$	Base Current	4	A
$I_{BM}$	Base Current-Peak	8	A
$P_C$	Collector Power Dissipation $T_C=25^\circ\text{C}$	80	W
$T_i$	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	1.56	$^\circ\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 10mA; I <sub>B</sub> = 0	400		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A ;I <sub>B</sub> = 0.4A		1.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5A ;I <sub>B</sub> = 1A		2.0	V
V <sub>CE(sat)-3</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 8A ;I <sub>B</sub> = 2A		3.0	V
V <sub>BE(sat)-1</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 2A ;I <sub>B</sub> = 0.4A		1.2	V
V <sub>BE(sat)-2</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 5A ;I <sub>B</sub> = 1A		1.6	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 700V; I <sub>E</sub> =0		0.1	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 9V; I <sub>C</sub> = 0		0.1	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 2A; V <sub>CE</sub> = 5V	8	40	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 5A; V <sub>CE</sub> = 5V	5	30	

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