

**isc Silicon NPN Power Transistor**
**2SD1094**
**DESCRIPTION**

- High Voltage Capability
- High Current Capability
- Fast Switching Speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

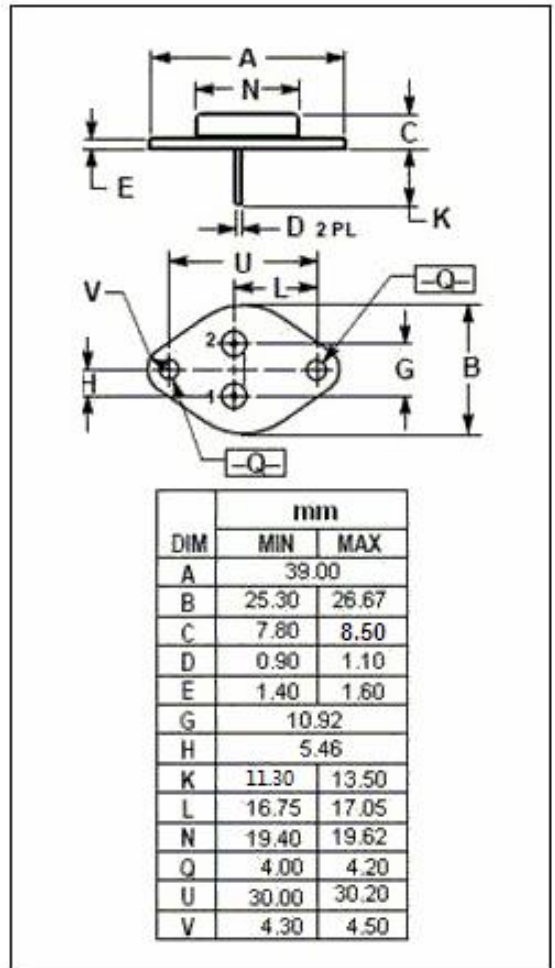
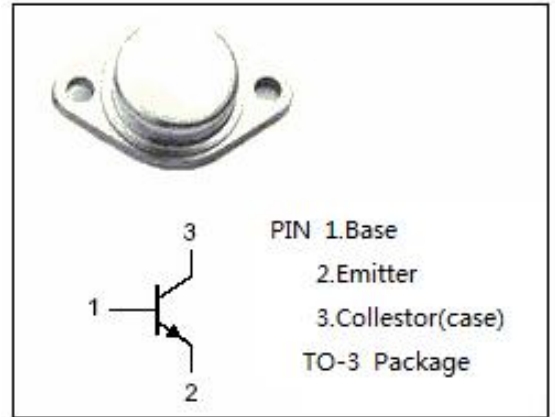
- Designed for switching and general purpose power amplifiers applications .

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	1000	V
V <sub>CEO</sub>	Collector-Emitter Voltage	700	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current-Continuous	10	A
I <sub>CM</sub>	Collector Current-Peak	20	A
I <sub>B</sub>	Base Current-Continuous	4	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	50	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-65~150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	1.0	°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> = 30mA; I <sub>B</sub> = 0	700		V
V <sub>CBO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>E</sub> = 1mA; I <sub>B</sub> = 0	1000		V
☆V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 6A; I <sub>B</sub> = 1.5A		1.5	V
☆V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10A ; I <sub>B</sub> = 4A		3.0	V
☆V <sub>BE(sat)-1</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 6A; I <sub>B</sub> = 1.5A		1.5	V
☆V <sub>BE(sat)-2</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 10A ; I <sub>B</sub> = 4A		2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 1000V; I <sub>E</sub> = 0 V <sub>CB</sub> = 1000V; I <sub>E</sub> = 0; T <sub>C</sub> =125°C		0.5 3	mA
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 700V; I <sub>B</sub> = 0		0.1	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 6V; I <sub>C</sub> = 0		0.1	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 2.5A ; V <sub>CE</sub> = 5V	8		

☆ Pulsed: Pulse duration = 300 ms, duty cycle = 1.5 %

Switching times; Resistive Load

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 6A ; I <sub>B1</sub> =-I <sub>B2</sub> = 1.5A; V <sub>CC</sub> = 250V;		3.0	μ s
t <sub>s</sub>	Storage Time			5.0	μ s
t <sub>f</sub>	Fall Time			1.0	μ s

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