

**isc Silicon NPN Power Transistor**
**2SC2502**
**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 400V(\text{Min})$
- Fast Switching Speed
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)} = 0.7V(\text{Max.}) @ I_C = 3A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

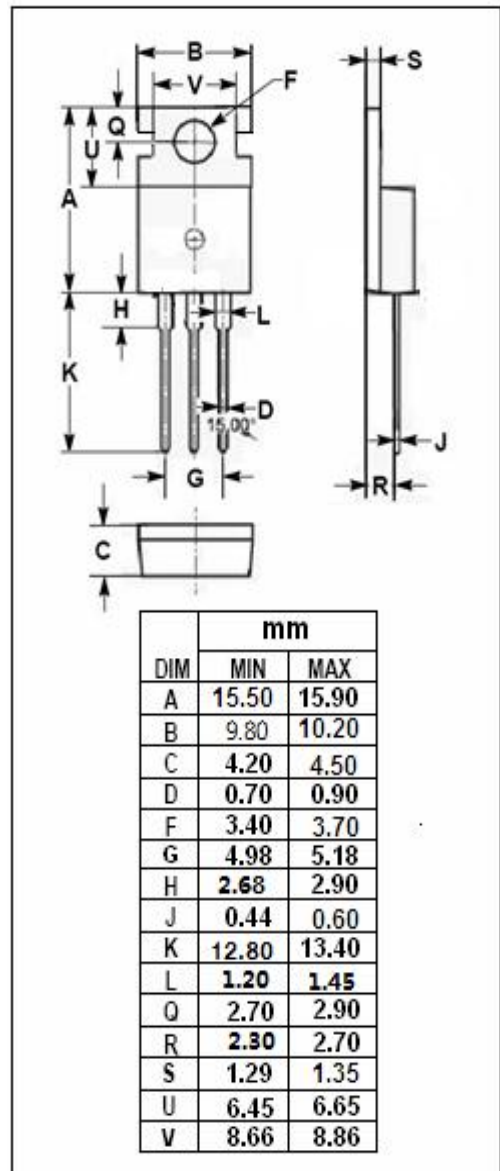
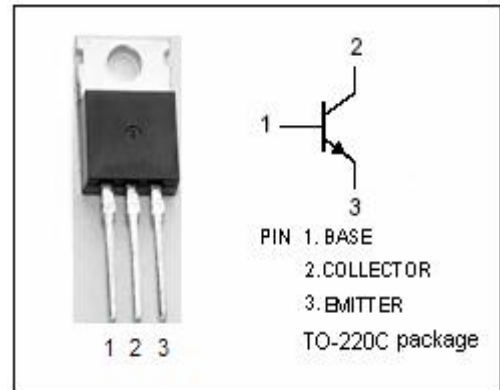
- Designed for use in high-voltage, high-speed, power switching in inductive circuit, they are particularly suited for 115 and 220V switchmode applications such as switching regulator's, inverters.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	500	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	6	A
$I_{CM}$	Collector Current-Peak	12	A
$I_B$	Base Current-Continuous	2	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	50	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.5	$^\circ\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA; I <sub>B</sub> = 0	400			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 0.3A			0.7	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 0.3A			1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 500V; I <sub>E</sub> = 0			100	μ A
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 320V; I <sub>B</sub> = 0			100	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 7V; I <sub>C</sub> = 0			1.0	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 3A; V <sub>CE</sub> = 2V	15			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 6A; V <sub>CE</sub> = 2V	8			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.6A; V <sub>CE</sub> = 10V; f= 1MHz	10			MHz

## Switching times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 3A, I <sub>B1</sub> = -I <sub>B2</sub> = 0.6A R <sub>L</sub> = 10 Ω; V <sub>CC</sub> = 30V			1.0	μ s
t <sub>stg</sub>	Storage Time				3.0	μ s
t <sub>f</sub>	Fall Time				0.7	μ s

Pulse Test:Pulse Width=300us,Duty Cycle&lt;2.0%

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