

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

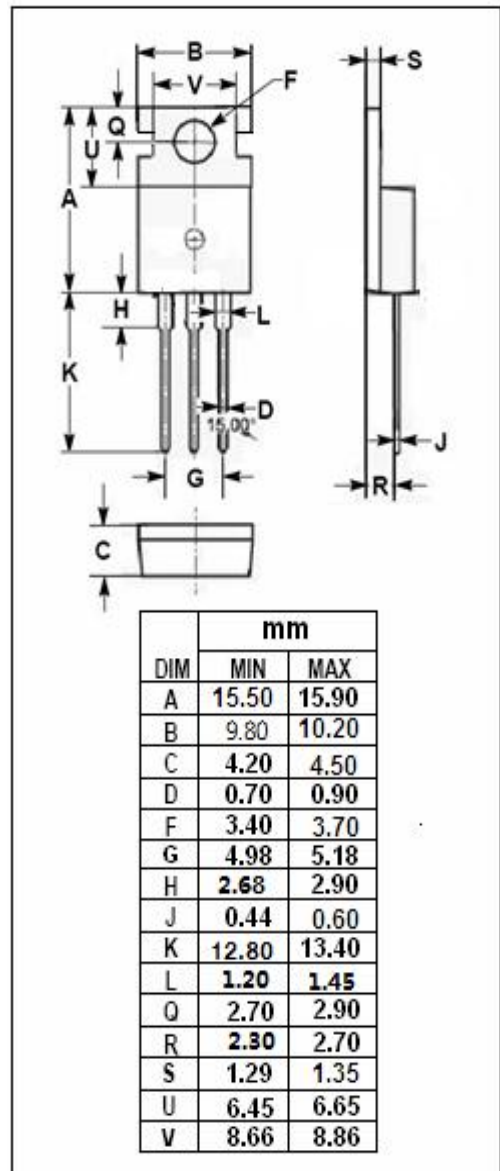
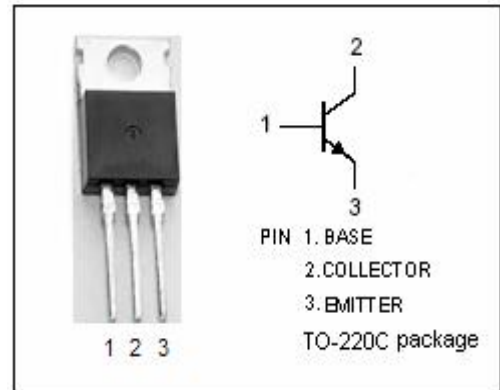
- Designed for use in high-voltage, high-speed, power switching in inductive circuit, they are particularly suited for 115 and 220V switchmode applications such as switching regulator's, inverters.

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_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	400			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 0.3A			0.7	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 0.3A			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 500V; I _E = 0			100	μ A
I _{CEO}	Collector Cutoff Current	V _{CE} = 320V; I _B = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			1.0	mA
h _{FE-1}	DC Current Gain	I _C = 3A; V _{CE} = 2V	15			
h _{FE-2}	DC Current Gain	I _C = 6A; V _{CE} = 2V	8			
f _T	Current-Gain—Bandwidth Product	I _C = 0.6A; V _{CE} = 10V; f= 1MHz	10			MHz
Switching times						
t _{on}	Turn-on Time	I _C = 3A, I _{B1} = -I _{B2} = 0.6A R _L = 10 Ω; V _{CC} = 30V			1.0	μ s
t _{stg}	Storage Time				3.0	μ s
t _f	Fall Time				0.7	μ s

Pulse Test:Pulse Width=300us,Duty Cycle<2.0%

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