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2SC2502

Silicon NPN Power Transistor

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CE(SUS)} = 400V(\text{Min})$
- Fast Switching Speed
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 0.7V(\text{Max.}) @ I_C = 3A$

APPLICATIONS

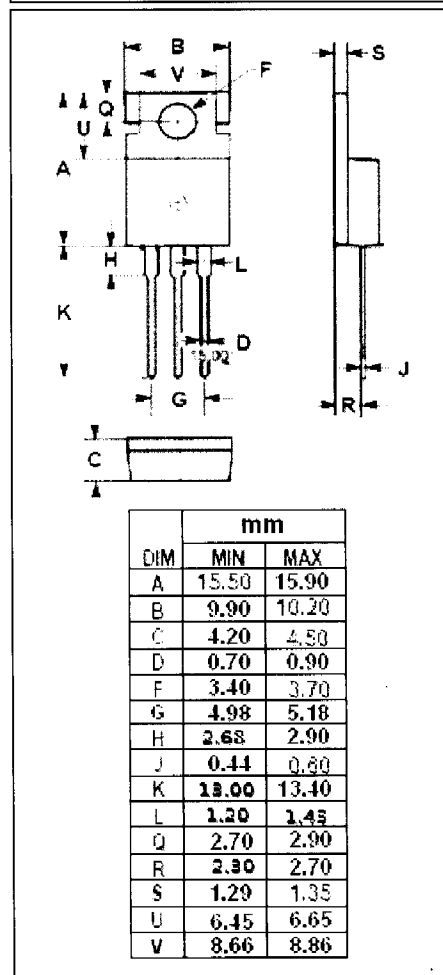
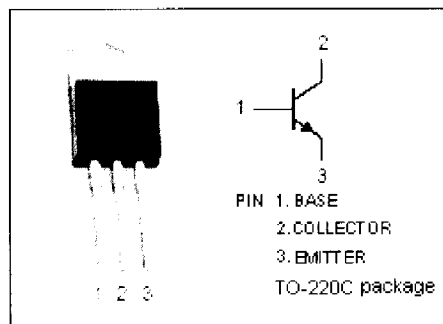
- Designed for use in high-voltage, high-speed, power switching in inductive circuit, they are particularly suited for 115 and 220V switchmode applications such as switching regulator's, inverters.

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	$^\circ\text{C}/\text{W}$



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Quality Semi-Conductors

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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}; I_B=0$	400			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$			0.7	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$			1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=500\text{V}; I_E=0$			100	μA
I_{CEO}	Collector Cutoff Current	$V_{CE}=320\text{V}; I_B=0$			100	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$			1.0	mA
h_{FE-1}	DC Current Gain	$I_C=3\text{A}; V_{CE}=2\text{V}$	15			
h_{FE-2}	DC Current Gain	$I_C=6\text{A}; V_{CE}=2\text{V}$	8			
f_T	Current-Gain—Bandwidth Product	$I_C=0.6\text{A}; V_{CE}=10\text{V}; f=1\text{MHz}$	10			MHz

Switching times

t_{on}	Turn-on Time	$I_C=3\text{A}; I_{B1}=-I_{B2}=0.6\text{A}$ $R_L=10\Omega; V_{CC}=30\text{V}$			1.0	μs
t_{stg}	Storage Time				3.0	μs
t_f	Fall Time				0.7	μs

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