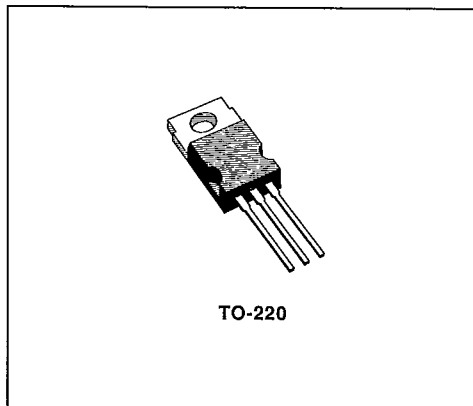
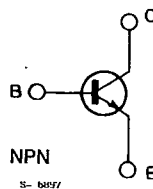


FAST SWITCHING POWER TRANSISTOR

- SUITABLE FOR SWITCHMODE POWER SUPPLY, UPS, DC AND AC MOTOR CONTROL



INTERNAL SCHEMATIC DIAGRAM



DESCRIPTION

High voltage, high speed transistor suited for use on the 220 and 380V mains.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	850	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	450	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	15	A
I_{CM}	Collector Peak Current	22	A
I_B	Base Current	5	A
I_{BM}	Base Peak Current	7.5	A
P_{tot}	Total Dissipation at $T_c < 25^\circ C$	100	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ C$
T_j	Max. Operating Junction Temperature	150	$^\circ C$

THERMAL DATA

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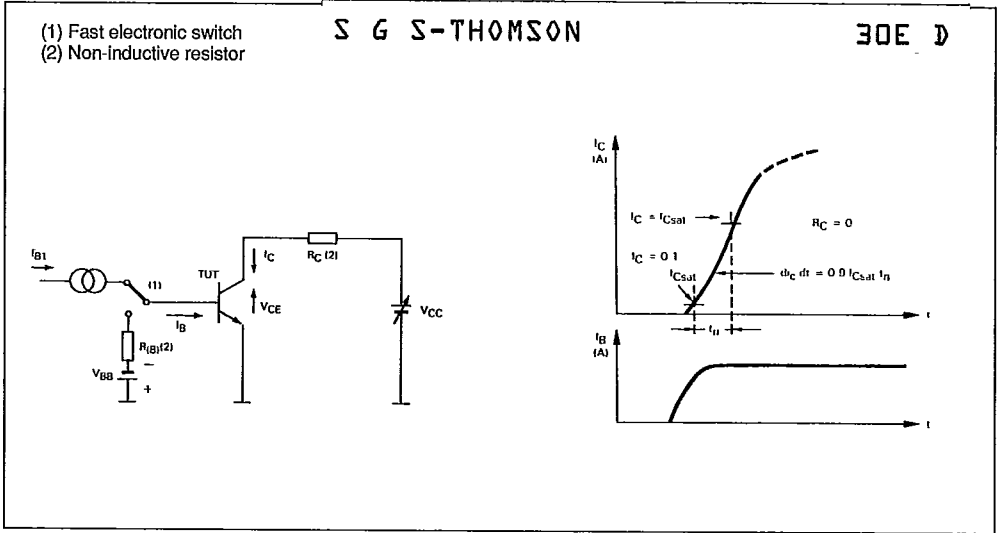
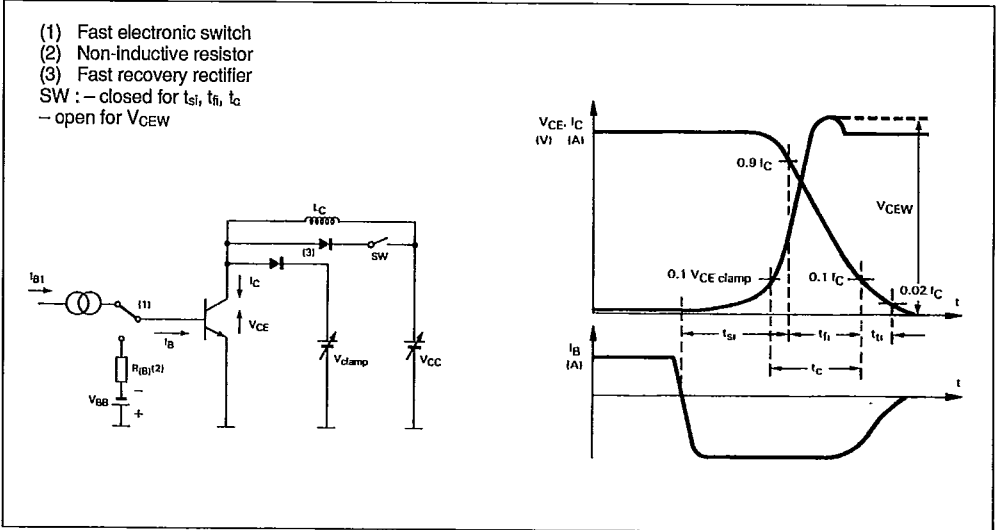
$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.25	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

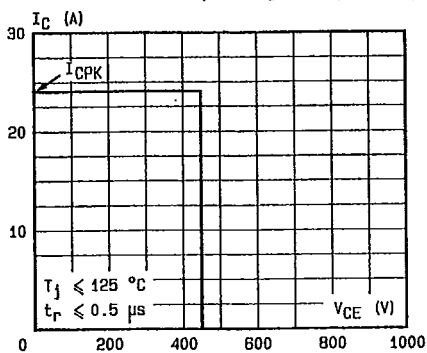
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cutoff Current ($R_{BE} = 10\Omega$)	$V_{CE} = V_{CEV}$ $V_{CE} = V_{CEV}$ $T_o = 100^{\circ}C$			0.2 1.5	mA mA
I_{CEV}	Collector Cutoff Current	$V_{CE} = V_{CEV}$ $V_{BE} = -1.5V$ $V_{CE} = V_{CEV}$ $V_{BE} = -1.5V$ $T_o = 100^{\circ}C$			0.2 1.5	mA mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5V$			1	mA
$V_{CEO(sus)}^*$	Collector Emitter Sustaining Voltage	$I_C = 0.2A$ $L = 25mH$	450			V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	$I_E = 50mA$	7			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 8A$ $I_B = 1.6A$ $I_C = 8A$ $I_B = 1.6A$ $T_j = 100^{\circ}C$			1.2 2	V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 8A$ $I_B = 1.6A$ $I_C = 8A$ $I_B = 1.6A$ $T_j = 100^{\circ}C$			1.3 1.3	V V
di_c/dt	Rate of Rise of On-state Collector Current	$V_{CC} = 300V$ $R_C = 0$ $I_{B1} = 2.4A$ $t_p = 3\mu s$ $T_j = 100^{\circ}C$ See fig. 1	45			A/ μs

INDUCTIVE LOAD

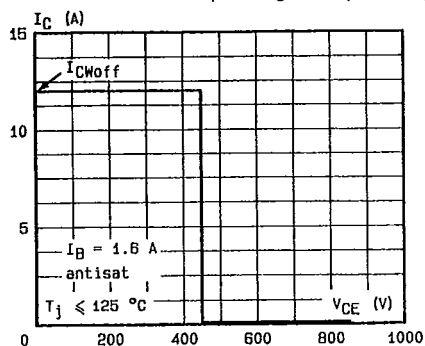
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_s	Storage Time	$V_{CC} = 400V$ $V_{olamp} = 450V$ $I_C = 8A$ $I_B = 1.6A$ $V_{BB} = -5V$ $R_{BB} = 1.6\Omega$ $L_C = 2.5mH$ $T_j = 100^{\circ}C$ see fig. 2			3	μs
t_f	Fall Time				0.4	μs
t_c	Crossover Time				0.7	μs
V_{CEW}	Maximum Collector Emitter Voltage without Snubber	$V_{CC} = 50V$ $I_{CWOFF} = 12A$ $V_{BB} = -5V$ $I_{B1} = 1.6A$ $L_C = 0.21mH$ $R_{BB} = 1.6\Omega$ $T_j = 125^{\circ}C$ See fig. 2	450			V

Figure 1 : Turn-on Switching Characteristics of the Transistor.

Figure 2 : Turn-off Switching Characteristics of the Transistor.


Forward Biased Safe Operating Area (FBSOA).



Reverse Biased Safe Operating Area (RBSOA).



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