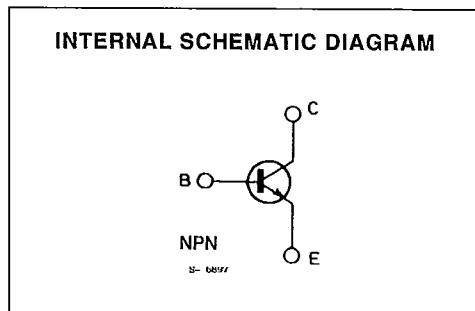
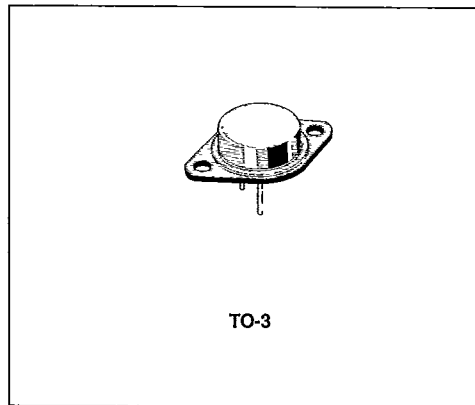


FAST SWITCHING POWER TRANSISTOR

- HIGH EFFICIENCY SWITCHING
- VERY LOW SATURATION VOLTAGE
- RECTANGULAR SAFE OPERATING AREA
- WIDE ACCIDENTAL OVERLOAD AREA



DESCRIPTION

Suitable for motor drives, SMPS converters, uninterruptable power supply operating low voltage supply.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	400	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	300	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7	V
I_E	Emitter Current	50	A
I_{EM}	Emitter Peak Current	75	A
I_B	Base Current	10	A
I_{BM}	Base Peak Current	15	A
P_{tot}	Total Dissipation at $T_C < 25^\circ C$	300	W
T_{stg}	Storage Temperature	- 65 to 200	$^\circ C$
T_j	Max. Operating Junction Temperature	200	$^\circ C$

THERMAL DATA

S G S - THOMSON

30E D

$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	0.58	°C/W
------------------	----------------------------------	-----	------	------

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
I_{CER}	Collector Cutoff Current ($R_{BE} = 10\Omega$)	$V_{CE} = V_{CEV}$ $V_{CE} = V_{CEV}$ $T_C = 100^{\circ}C$			1 5	mA mA	
I_{CEV}	Collector Cutoff Current	$V_{CE} = V_{CEV}$ $V_{BE} = -1.5V$ $V_{CE} = V_{CEV}$ $V_{BE} = -1.5V$ $T_C = 100^{\circ}C$			1 4	mA mA	
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5V$			1	mA	
$V_{CEO(sus)}^*$	Collector Emitter Sustaining Voltage	$I_C = 0.2A$ $L = 25mH$	300			V	
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	$I_E = 50mA$	7			V	
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 40A$ $I_B = 4A$ $I_C = 40A$ $I_B = 4A$ $T_j = 100^{\circ}C$			0.9 1.9	V V	
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 40A$ $I_B = 4A$ $I_C = 40A$ $I_B = 4A$ $T_j = 100^{\circ}C$			1.4 1.4	V V	
di_C/dt	Rated of Rise of On-state Collector Current	$V_{CC} = 250V$ $R_C = 0$ $t_p = 3\mu s$ See fig. 1	120			A/ μs	
t_s t_f t_c	INDUCTIVE LOAD Storage Time Fall Time Crossover Time	$V_{CC} = 250V$ $I_C = 40A$ $V_{BB} = -5V$ $R_{B2} = 0.60\Omega$ See fig. 2			$V_{clamp} = 300V$ $I_{B1} = 4A$ $L_C = 0.3mH$ $T_j = 100^{\circ}C$	 3 0.4 0.7	 μs μs μs
V_{CEW}	Maximum Collector Emitter Voltage without Snubber	$V_{CC} = 50V$ $V_{BB} = -5V$ $L_C = 42\mu H$ $T_j = 125^{\circ}C$	300			$I_{Cwoff} = 60A$ $I_{B1} = 4A$ $R_{B2} = 0.6\Omega$ See fig. 2	V

* Pulsed : Pulse duration = 300 μs , duty cycle = 2%.

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

T-33-15

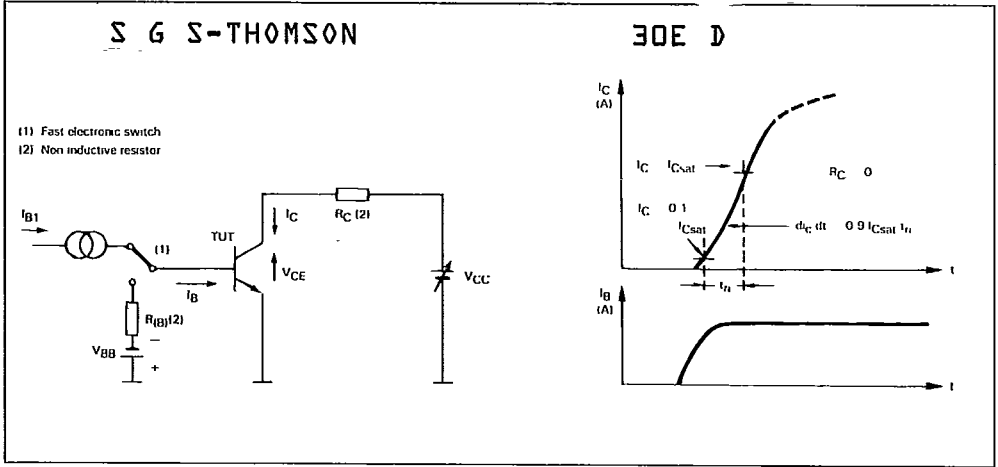
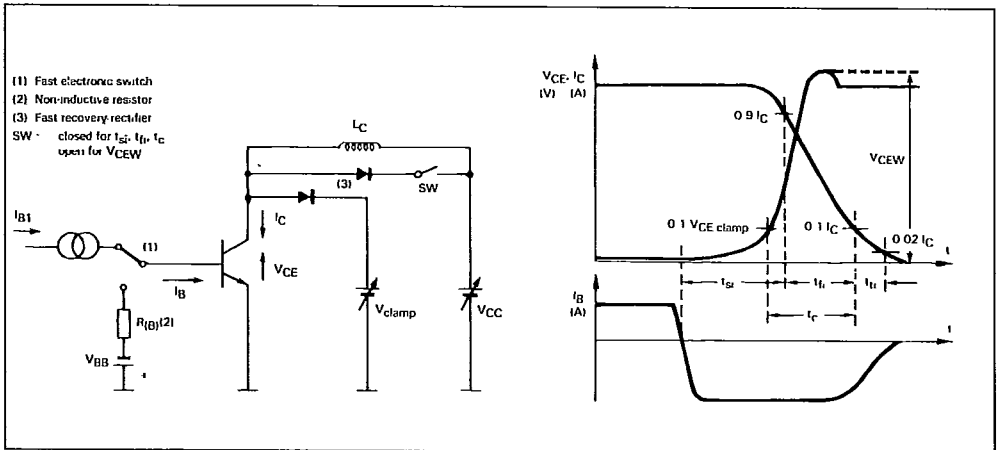


Figure 2 : Turn-off Switching Characteristics of the Transistor.



SGS-THOMSON

30E D

Forward biased Safe Operating Area (FBSOA).

Reverse biased Safe Operating Area (RBSOA).

