SGS-THOMSON MICROELECTRONICS

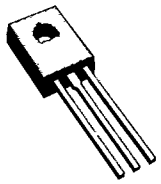
BU325

S G S-THOMSON 30E D

HIGH VOLTAGE SWITCH

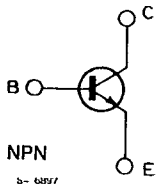
DESCRIPTION

The BU325 is a silicon planar epitaxial NPN transistor in Jedec TO-126 plastic case. It is intended for high voltage, high current linear and switching applications.



TO-126

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	200	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	200	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	3	A
I_B	Base Current	1	A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25$ °C $T_{case} \leq 25$ °C	1.25 25	W W
T_{stg}	Storage Temperature	– 65 to 150	°C
T_j	Junction Temperature	150	°C

THERMAL DATA

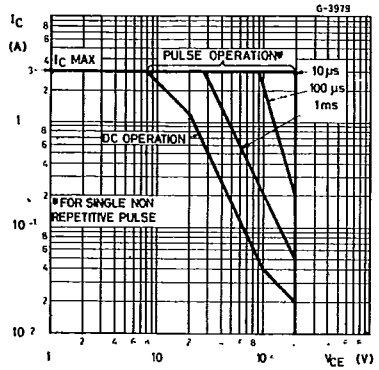
$R_{th j\text{-}case}$	Thermal Resistance Junction-case	Max	5	°C/W
$R_{th j\text{-}amb}$	Thermal Resistance Junction-amb.	Max	100	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

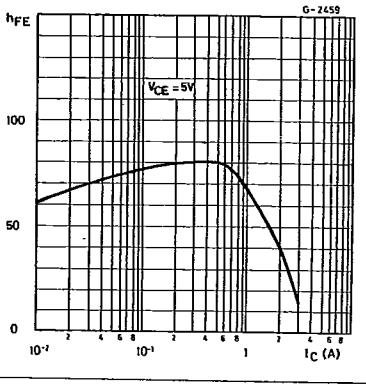
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = 200 V				100	µA
V_{CBO}	Collector-base Breakdown Voltage (I_E = 0)	I_C = 100 µA		200			V
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 10 mA		200			V
V_{EBO}*	Emitter-base Voltage (I_C = 0)	I_E = 1 mA		5			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 150 mA I_C = 500 mA	I_B = 15 mA I_B = 50 mA		0.06 0.10	1.0 1.5	V V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 150 mA I_C = 500 mA	I_B = 15 mA I_B = 50 mA		0.73 0.80	1.0 1.2	V V
h_{FE}*	DC Current Gain	I_C = 50 mA I_C = 150 mA I_C = 500 mA	V_{CE} = 5 V V_{CE} = 5 V V_{CE} = 5 V	30 30 30		200 200 200	
f_T	Transition Frequency	I_C = 500 mA	V_{CE} = 5 V		40		MHz
C_{CBO}	Collector-base Capacitance	I_E = 0 f = 1 MHz	V_{CB} = 10 V			50	pF
t_{on}	Turn-on Time	I_C = 0.5 A V_{CC} = 20 V	I_{B1} = 50 mA		0.3		µs
t_{off}	Turn-off Time	I_C = 0.5 A I_{B1} = − I_{B2} = 50 mA V_{CC} = 20 V			1		µs

* Pulsed : pulse duration = 300 µs, duty cycle = 1.5 %.

Safe Operating Area.



DC Current Gain. T-33-09



Collector–emitter Saturation Voltage.

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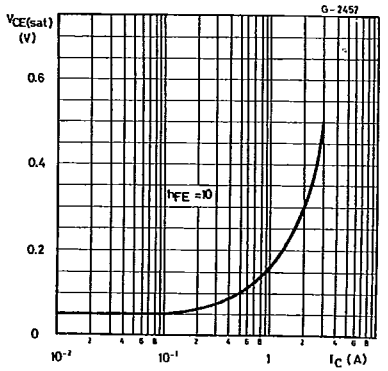
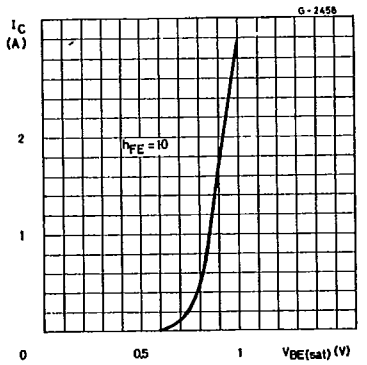
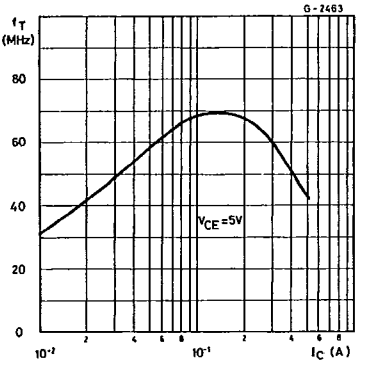


Base–emitter Saturation Voltage.

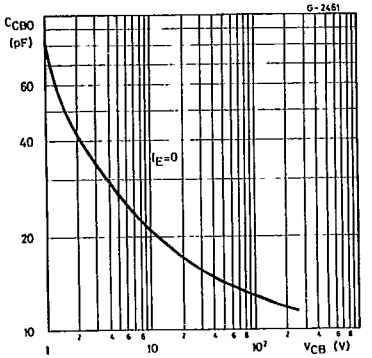


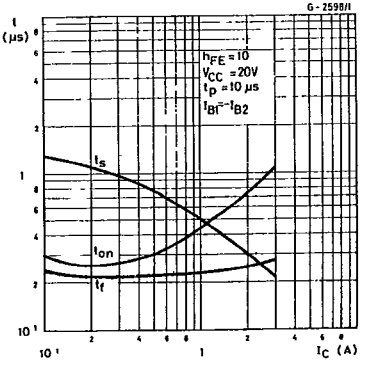
Collector–emitter Saturation Voltage.

Transition Frequency.



Saturated Switching Characteristics .





Power Rating Chart.