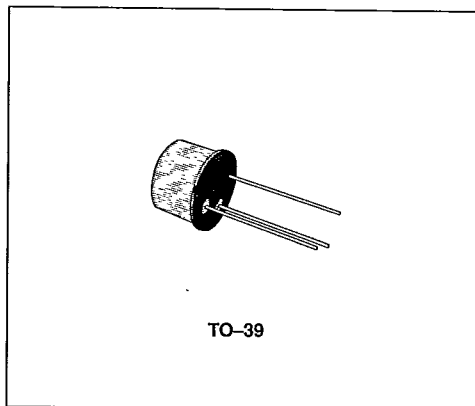
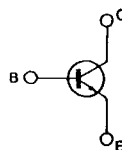


DESCRIPTION

The BU125S is a silicon epitaxial planar NPN transistor in Jedec TO-39 metal case. It is intended for general purpose, linear and switching applications.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	250	V
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5$ V)	250	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	150	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	6	V
I_C	Collector Current	3	A
I_{CM}	Collector Peak Current (repetitive)	5	A
I_B	Base Current	0.5	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C $T_{amb} \leq 50$ °C	1 10	W W
T_{stg}	Storage Temperature	- 65 to 200	°C
T_j	Junction Temperature	200	°C

THERMAL DATA

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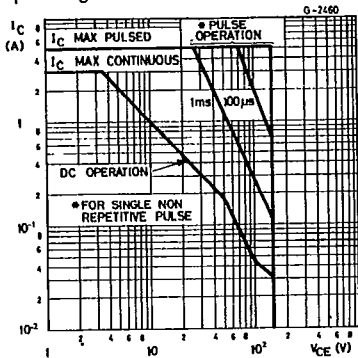
$R_{thj-case}$	Thermal Resistance Junction-case	Max	15	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	175	$^{\circ}C/W$

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

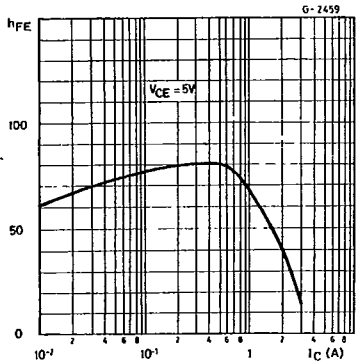
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 200\text{ V}$			10	μA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 6\text{ V}$			1	mA
V_{CBO}	Collector-base Voltage ($I_E = 0$)	$I_C = 1\text{ mA}$	250			V
$V_{CE(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 20\text{ mA}$	150			V
$V_{CE(sat)}$	Collector-emitter Saturation Voltage	$I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$			1.5	V
h_{FE}	DC Current Gain	$I_C = 5\text{ mA}$ $V_{CE} = 10\text{ V}$ $I_C = 250\text{ mA}$ $V_{CE} = 3\text{ V}$	30 30			
f_T	Transition Frequency	$I_C = 100\text{ mA}$ $V_{CE} = 10\text{ V}$	15			MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $f = 1\text{ MHz}$ $V_{CB} = 20\text{ V}$			35	pF
t_{on}	Turn-on Time	$I_C = 0.5\text{ A}$ $V_{CC} = 20\text{ V}$		0.3		μs
t_{off}	Turn-off Time	$I_{B1} = -I_{B2} = 0.05\text{ A}$		1		μs

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

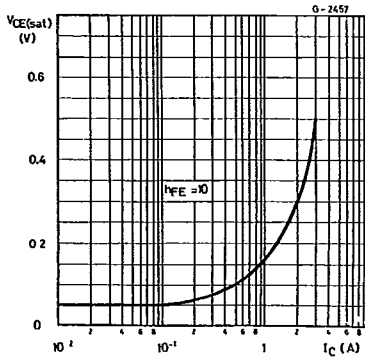
Safe Operating Areas.



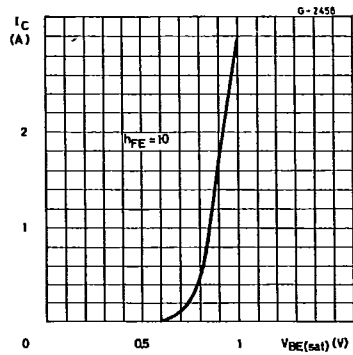
DC Current Gain.



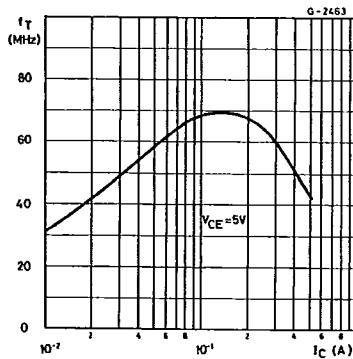
Collector-emitter Saturation Voltage.



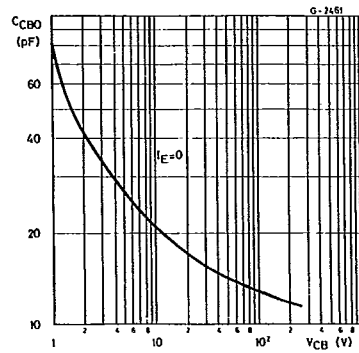
Base-emitter Saturation Voltage.



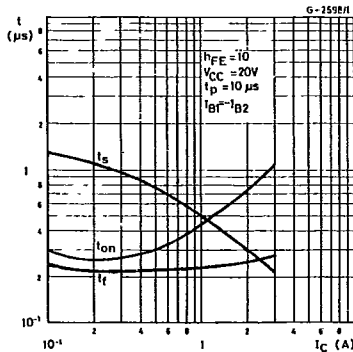
Transition Frequency.



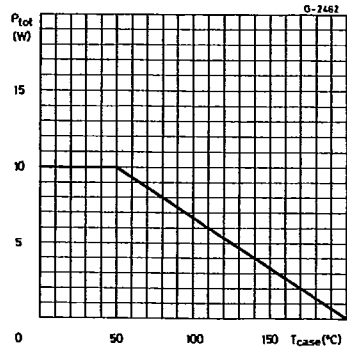
Collector-base Capacitance.



Saturated Switching Characteristics.



Power Rating Chart.



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