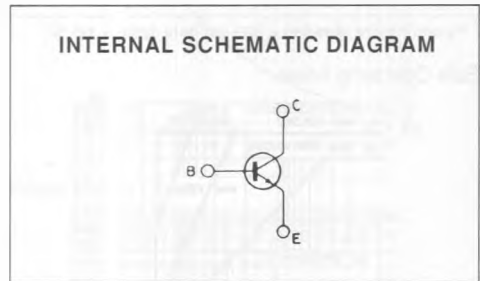
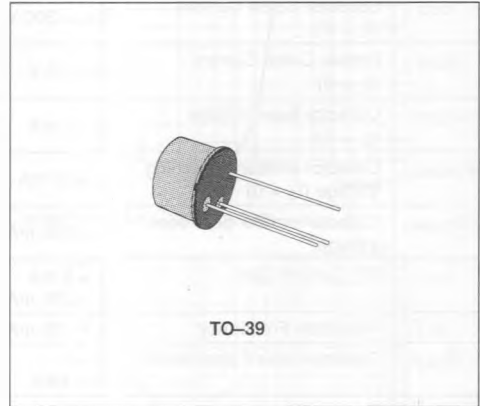


## HIGH VOLTAGE POWER AMPLIFIER

### 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.



### 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
$P_{101}$	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**

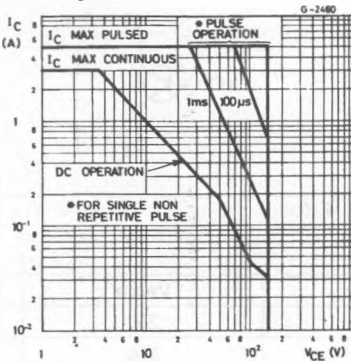
$R_{thj-case}$	Thermal Resistance Junction-case	Max	15	°C/W
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25\text{ °C}$  unless otherwise specified)

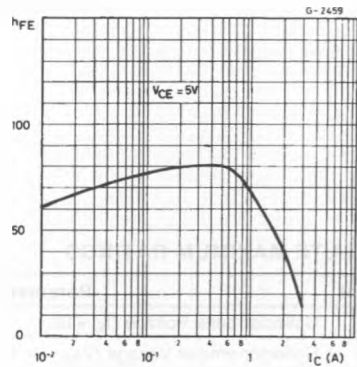
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CB} = 200\text{ V}$				10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 6\text{ V}$				1	mA
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	$I_C = 1\text{ mA}$		250			V
$V_{CE0(sus)}^*$	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	$I_C = 5\text{ mA}$ $I_C = 250\text{ mA}$	$V_{CE} = 10\text{ V}$ $V_{CE} = 3\text{ V}$	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		$\mu\text{s}$
$t_{off}$	Turn-off Time	$I_{B1} = -I_{B2} = 0.05\text{ A}$		1		$\mu\text{s}$	

\* Pulsed : pulse duration = 300  $\mu\text{s}$ , duty cycle = 1.5 %.

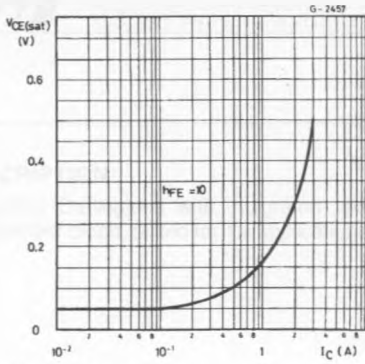
**Safe Operating Areas.**



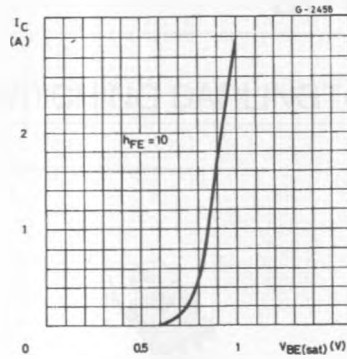
**DC Current Gain.**



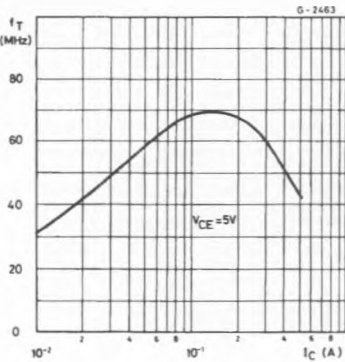
Collector-emitter Saturation Voltage.



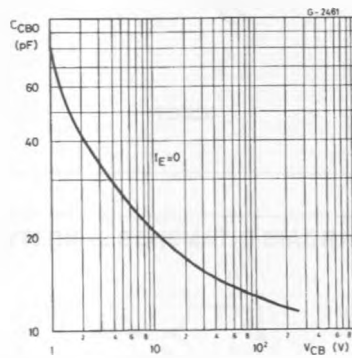
Base-emitter Saturation Voltage.



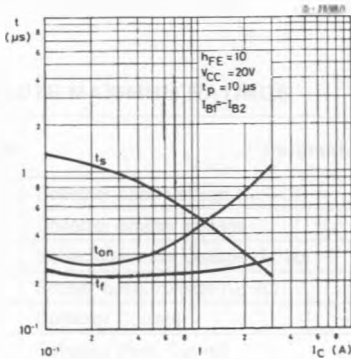
Transition Frequency.



Collector-base Capacitance.



Saturated Switching Characteristics.



Power Rating Chart.

