

# Silicon NPN Transistor

## **BUW26**

High Voltage Power Switch

450V / 10A

# DATASHEET

OEM –SGS Ates

Source: SGS Ates Databook 1977

**BUW 26****MULTIEPITAXIAL BIPLANAR NPN****HIGH VOLTAGE POWER SWITCH**

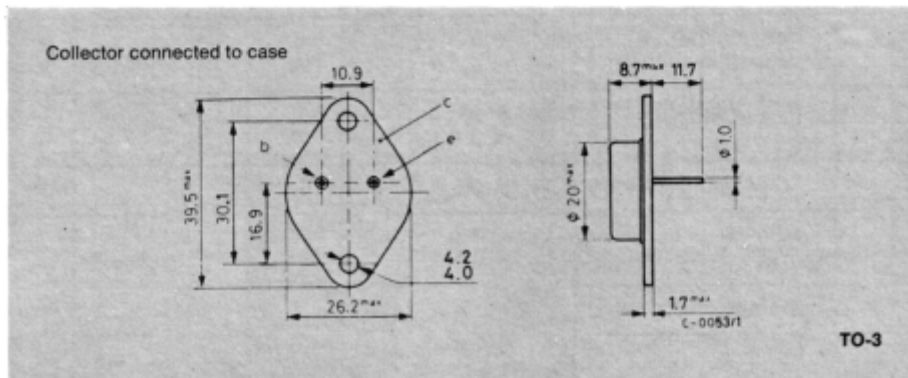
The BUW 26 is a silicon multiepitaxial biplanar<sup>®</sup> NPN transistor in Jedec TO-3 metal case. It is particularly intended for high voltage, fast switching and industrial applications.

**ABSOLUTE MAXIMUM RATINGS**

$V_{CES}$	Collector-emitter voltage ( $V_{BE} = 0$ )	800	V
$V_{CEO}$	Collector-emitter voltage ( $I_B = 0$ )	450	V
$V_{EBO}$	Emitter-base voltage ( $I_C = 0$ )	8	V
$I_C$	Collector current	10	A
$I_B$	Base current	4	A
$P_{tot}$	Total power dissipation at $T_{case} \leq 25^\circ\text{C}$	125	W
$T_{stg}$	Storage temperature	-65 to 200	$^\circ\text{C}$
$T_j$	Junction temperature	200	$^\circ\text{C}$

**MECHANICAL DATA**

Dimensions in mm



# BUW 26

## THERMAL DATA

$R_{th\ j-case}$	Thermal resistance junction-case	max	1.4	°C/W
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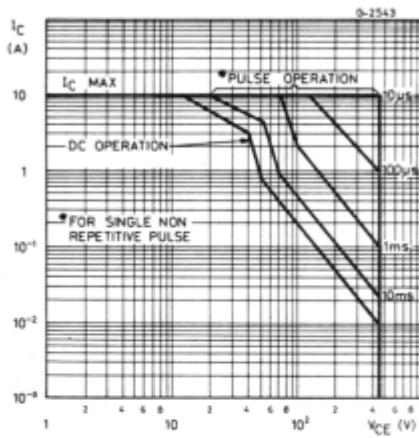
## ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

Parameter	Test conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector cutoff current ( $V_{BE} = 0$ )	$V_{CE} = 800\text{ V}$ $V_{CE} = 800\text{ V}$		500 1	$\mu\text{A}$ mA
$I_{CEO}$	Collector cutoff current ( $I_B = 0$ )	$V_{CE} = 450\text{ V}$		100	$\mu\text{A}$
$I_{EBO}$	Emitter cutoff current ( $I_C = 0$ )	$V_{EB} = 8\text{ V}$		1	mA
$V_{CEO(sus)}$ *	Collector-emitter sustaining voltage ( $I_B = 0$ )	$I_C = 100\text{ mA}$		450	V
$V_{CE(sat)}$ *	Collector-emitter saturation voltage	$I_C = 3\text{ A}$ $I_B = 0.6\text{ A}$ $I_C = 4\text{ A}$ $I_B = 1\text{ A}$		1.5 1.5	V V
$V_{BE(sat)}$ *	Base-emitter saturation voltage	$I_C = 3\text{ A}$ $I_B = 0.6\text{ A}$ $I_C = 4\text{ A}$ $I_B = 1\text{ A}$		1.3 1.5	V V
$h_{FE}$ *	DC current gain	$I_C = 1\text{ A}$ $V_{CE} = 5\text{ V}$ $I_C = 8\text{ A}$ $V_{CE} = 5\text{ V}$		15 4 40	— —
$f_T$	Transition frequency	$I_C = 0.5\text{ A}$ $V_{CE} = 10\text{ V}$		20	MHz
$t_{on}$	Turn-on time	$I_C = 3\text{ A}$ $V_{CC} = 250\text{ V}$ $I_{B1} = 0.6\text{ A}$		0.3    0.5	$\mu\text{s}$
$t_s$	Storage time	$I_C = 3\text{ A}$ $V_{CC} = 250\text{ V}$ $I_{B1} = 0.6\text{ A}$		1.2    2	$\mu\text{s}$
$t_f$	Fall time	$I_{B2} = -1.5\text{ A}$		0.3    0.5	$\mu\text{s}$

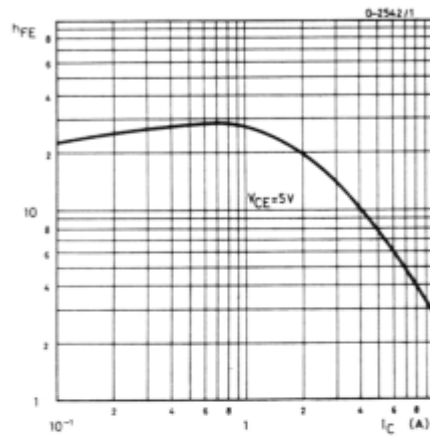
\* Pulsed: pulse duration = 300  $\mu\text{s}$ , duty cycle = 1.5%

**BUW 26**

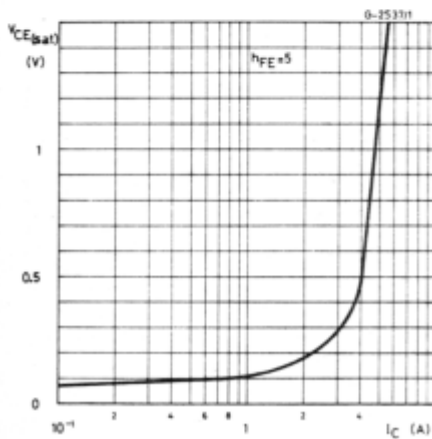
Safe operating areas



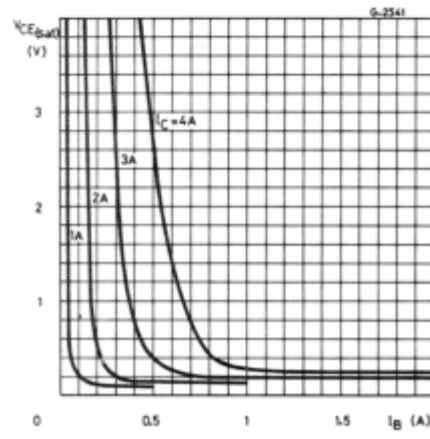
DC current gain



Collector-emitter saturation voltage

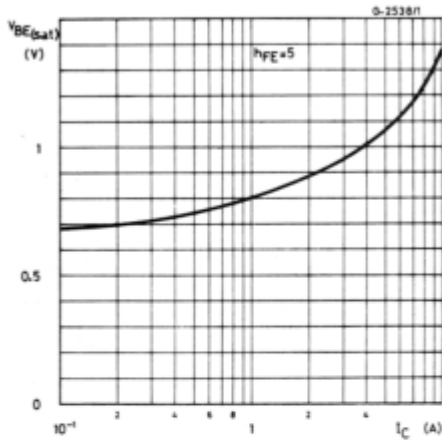


Collector-emitter saturation voltage

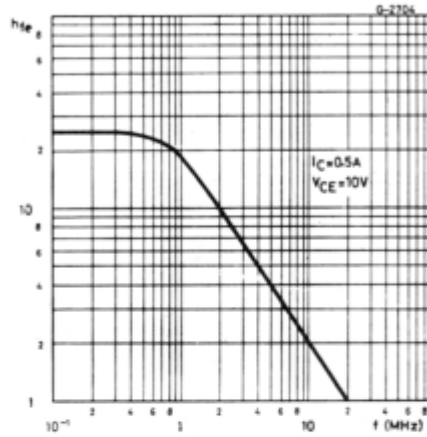


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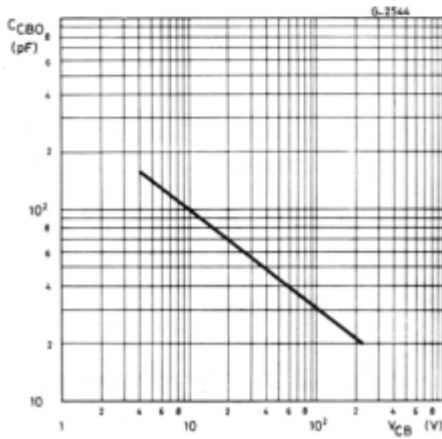
Base-emitter saturation voltage



Small signal current gain



Collector-base capacitance



Saturated switching characteristics

