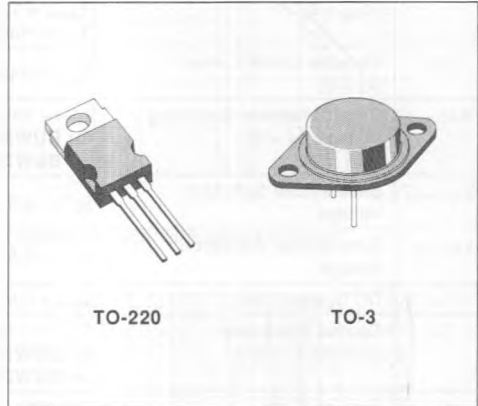


## HIGH VOLTAGE POWER SWITCH

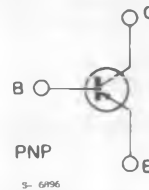
### DESCRIPTION

The BUW22, BUW22A are silicon multiepitaxial mesa PNP transistor in Jedec TO-3 metal case, particularly intended for switching applications.

The BUW22P, BUW22AP are mounted in TO-220 plastic package.



### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BUW22/P	BUW22A/AP	
$V_{CES}$	Collector-emitter Voltage ( $V_{BE} = 0$ )	- 400	- 450	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	- 350	- 400	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	- 5	- 7	V
$I_C$	Collector Current	- 6		A
$I_{CM}$	Collector Peak Current ( $t_p \leq 10$ ms)	- 8		A
$I_B$	Base Current	- 2		A
$I_{BM}$	Base Peak Current ( $t_p \leq 10$ ms)	- 4		A
		TO-3	TO-220	
$P_{Tot}$	Total Power Dissipation at $T_{case} \leq 25$ °C	75	60	W
$T_{stg}$	Storage Temperature	- 65 to 175	- 65 to 150	°C
$T_j$	Junction Temperature	175	150	°C

**THERMAL DATA**

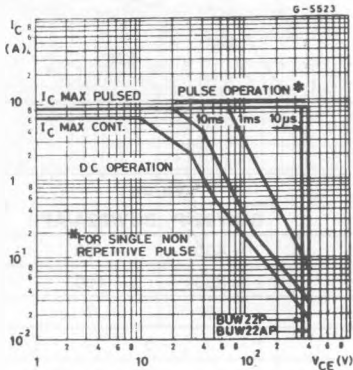
$R_{th\ J-case}$	Thermal Resistance Junction-case	max	2	°C/W
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**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25\text{ °C}$  unless otherwise specified)

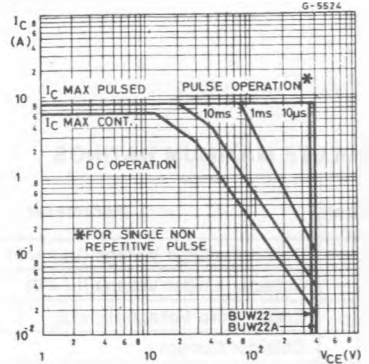
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector Cutoff Current ( $V_{BE} = 0$ )	$V_{CE} = \text{Rated } V_{CES}$			- 1	mA
		$T_{case} = 125\text{ °C}$ $V_{CE} = \text{Rated } V_{CES}$			- 5	mA
$I_{EBO}$	Collector Cutoff Current ( $I_C = 0$ )	$V_{EB} = \text{Rated } V_{EBO}$			- 1	mA
$V_{CE(sus)}$ *	Collector-emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = -100\text{ mA}$ for <b>BUW22/P</b> for <b>BUW22A/AP</b>	- 350 - 400			V V
$V_{CE(sat)}$ *	Base-emitter Saturation Voltage	$I_C = -2.5\text{ A}$ $I_B = -1\text{ A}$			- 1.5	V
$V_{BE(sat)}$ *	Base-emitter Saturation Voltage	$I_C = -2.5\text{ A}$ $I_B = -1\text{ A}$			- 1.6	V
$h_{FE}$ *	DC Current Gain	$I_C = -0.5\text{ A}$ $V_{CE} = -5\text{ V}$	12			
$I_{s/b}$	Second Breakdown Collector Current	$V_{CE} = -30\text{ V}$ for <b>BUW22/A</b> for <b>BUW22P/AP</b>	- 2.5 - 2			A A
$t_{on}$	Turn-on Time	Resistive Load		0.4	0.8	$\mu\text{s}$
$t_s$	Storage Time	$V_{CC} = -250\text{ V}$ $I_C = -2.5\text{ A}$		0.6	1.5	$\mu\text{s}$
$t_f$	Fall Time	$I_{B1} = -I_{B2} = -0.5\text{ A}$		0.3	0.7	$\mu\text{s}$

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

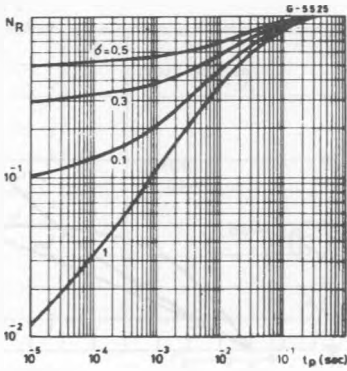
**Safe Operating Areas.**  
(BUW22AP - BUW22P).



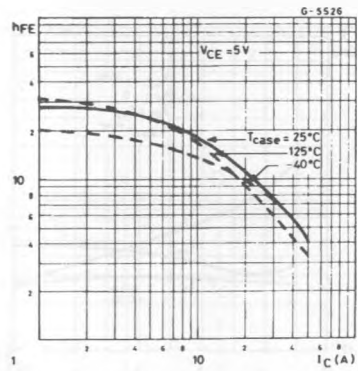
**Safe Operating Areas.**  
(BUW22 - BUW22A).



Transient Thermal Response.

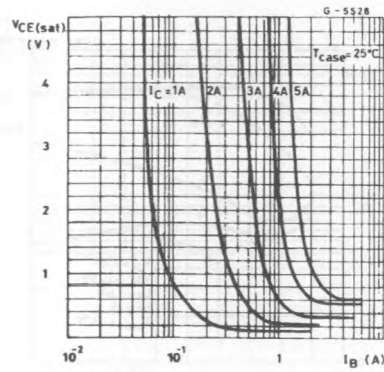
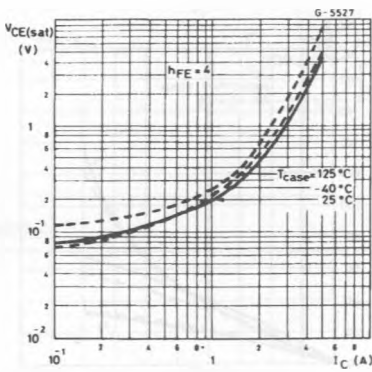


DC Current Gain.



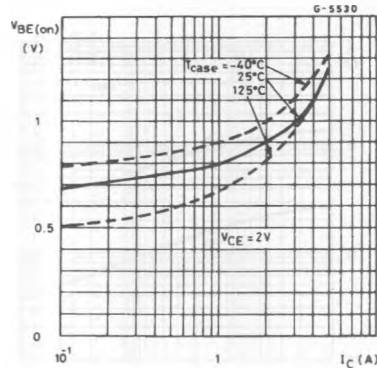
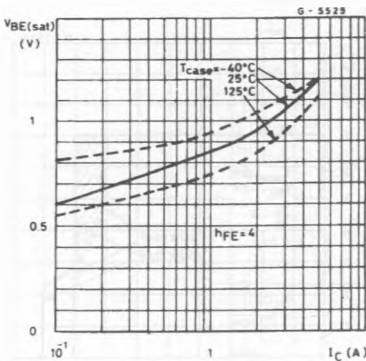
Collector-emitter Saturation Voltage.

Collector-emitter Saturation Voltage.

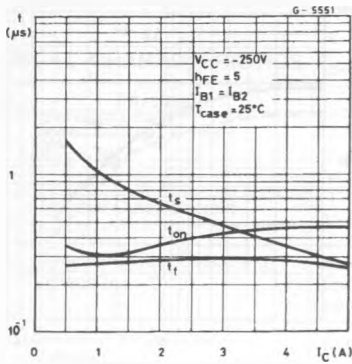


Base-emitter Saturation Voltage.

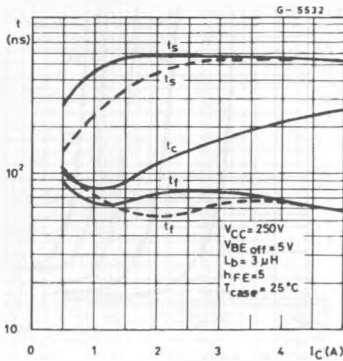
Base-emitter On Voltage.



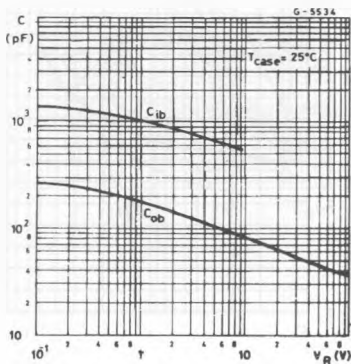
Switching Times Resistive Load (test circuit fig. 1).



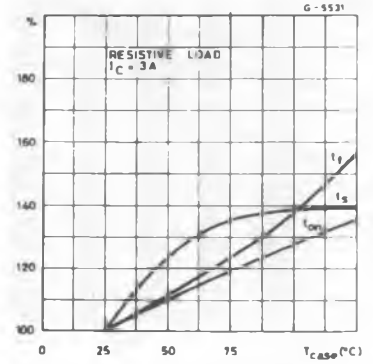
Turn-off Switching Times Inductive Load (test circuit fig. 2).



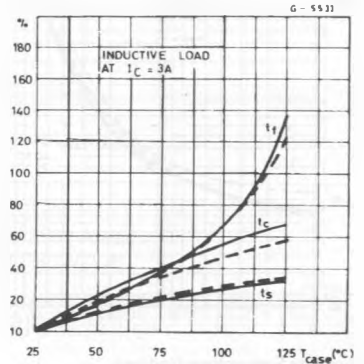
Capacitance.



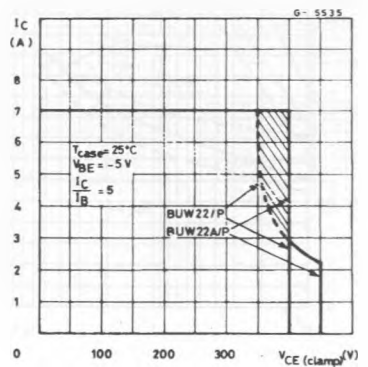
Switching Time Percentage Variation vs.  $T_{case}$ .



Switching Times Percentage Variation vs.  $T_{case}$ .



Reserve Biased Safe Operating Area.



TEST CIRCUITS.

Figure 1.

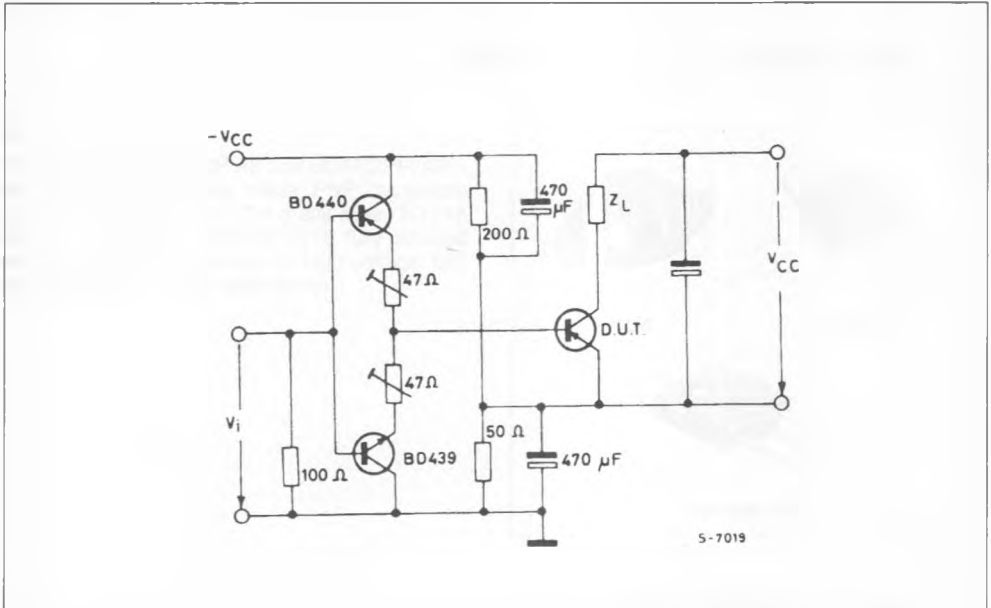


Figure 2.

