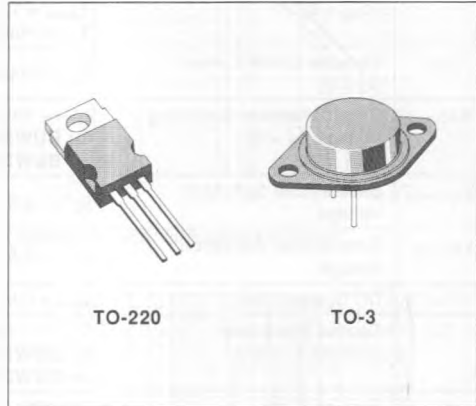


## HIGH VOLTAGE POWER SWITCH

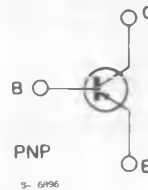
### DESCRIPTION

The BUW22, BUW22A are silicon multi-epitaxial 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**

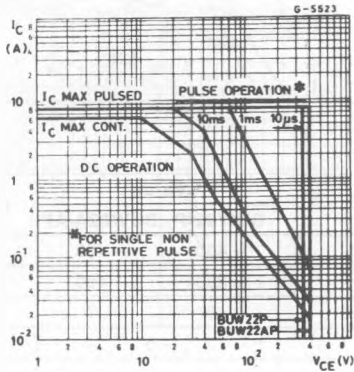
$R_{th J-case}$	Thermal Resistance Junction-case	max	2	°C/W
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**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25\text{ °C}$  unless otherwise specified)

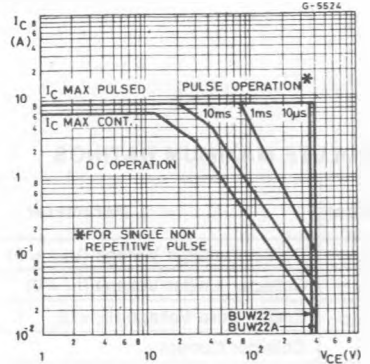
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector Cutoff Current ( $V_{BE} = 0$ )	$V_{CE} = \text{Rated } V_{CES}$			-1	mA
		$T_{case} = 125\text{ °C}$ $V_{CE} = \text{Rated } V_{CES}$			-5	mA
$I_{EBO}$	Collector Cutoff Current ( $I_C = 0$ )	$V_{EB} = \text{Rated } V_{EBO}$			-1	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 %.

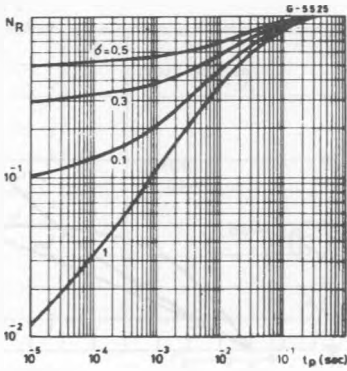
**Safe Operating Areas.**  
(BUW22AP - BUW22P).



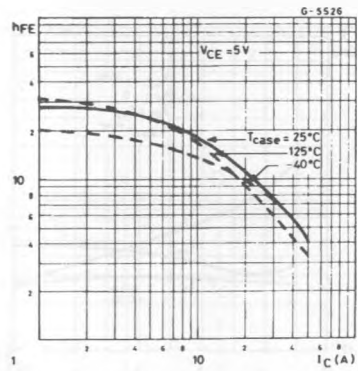
**Safe Operating Areas.**  
(BUW22 - BUW22A).



Transient Thermal Response.

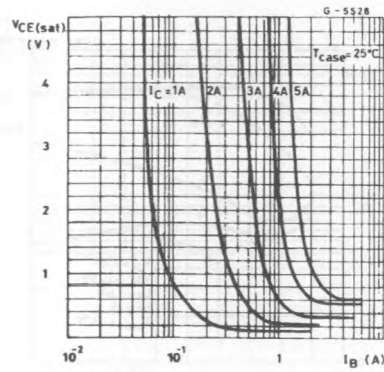
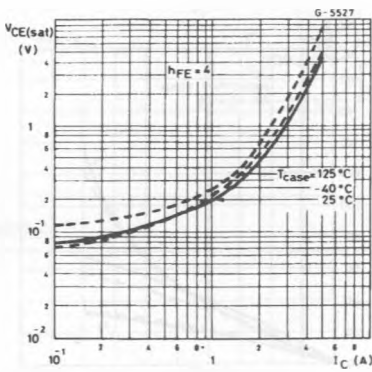


DC Current Gain.



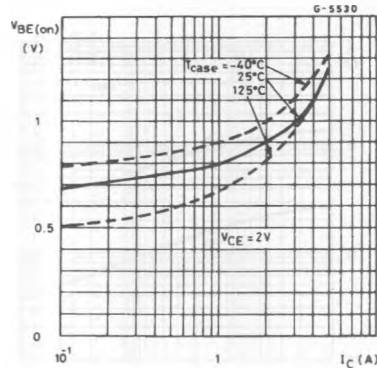
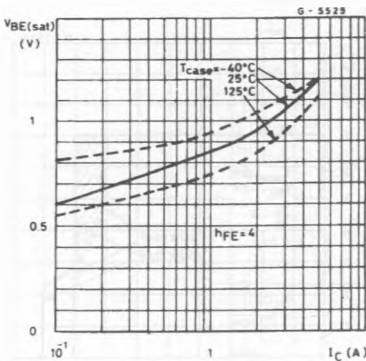
Collector-emitter Saturation Voltage.

Collector-emitter Saturation Voltage.

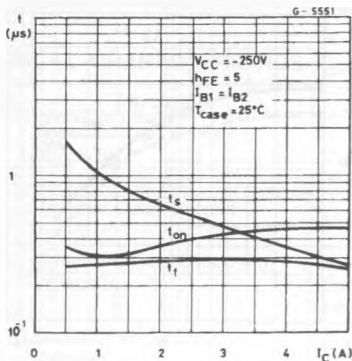


Base-emitter Saturation Voltage.

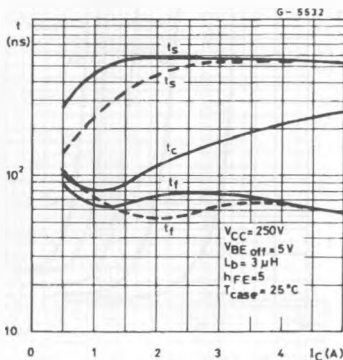
Base-emitter On Voltage.



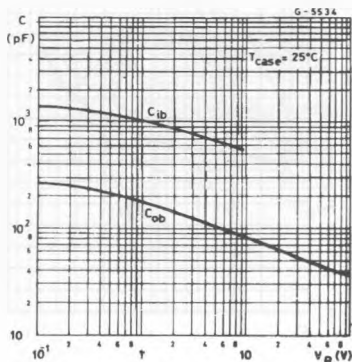
Switching Times Resistive Load (test circuit fig. 1).



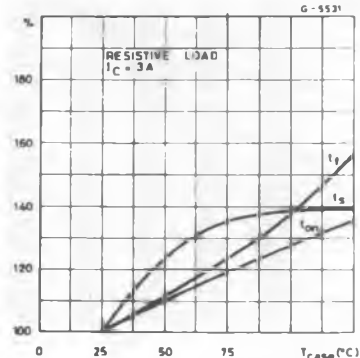
Turn-off Switching Times Inductive Load (test circuit fig. 2).



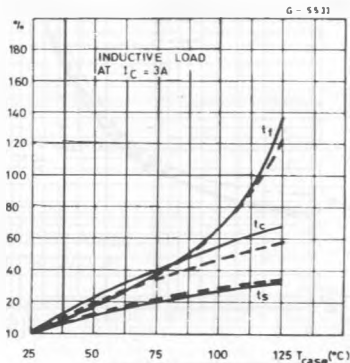
Capacitance.



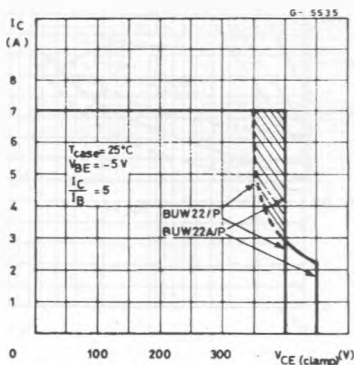
Switching Time Percentage Variation vs. Tcase.



Switching Times Percentage Variation vs. Tcase.



Reserve Biased Safe Operating Area.



TEST CIRCUITS.

Figure 1.

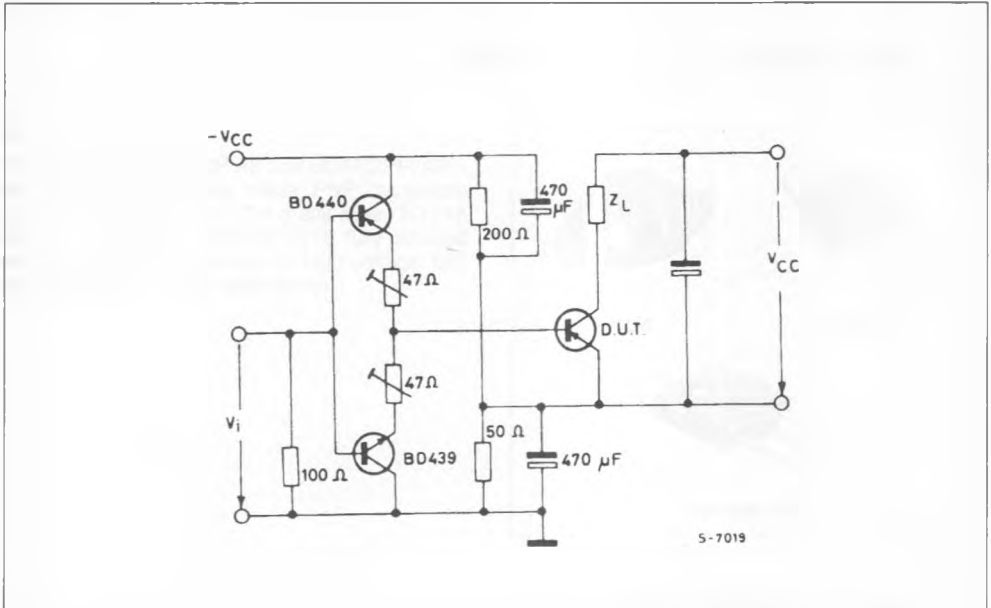


Figure 2.

