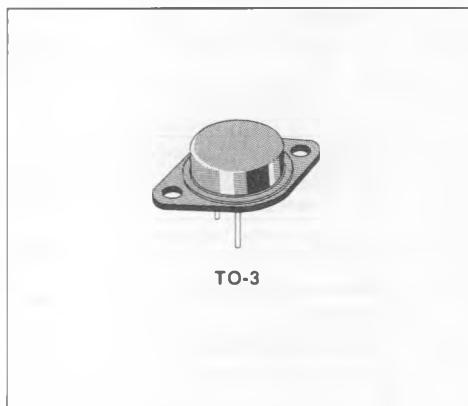


## COMPLEMENTARY HIGH POWER TRANSISTORS

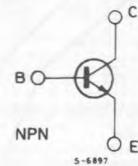
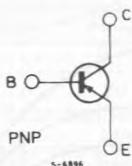
### DESCRIPTION

The MJ802 (NPN) and MJ4502 (PNP) are silicon epitaxial-base complementary power transistors in TO-3 metal case, intended for general purpose power amplifier and switching applications.



TO-3

### INTERNAL SCHEMATIC DIAGRAMS



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	90	V
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	100	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	4	V
$I_C$	Collector Current	30	A
$I_B$	Base Current	7.5	A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25^\circ\text{C}$	200	W
$T_{stg}$	Storage Temperature	- 65 to 200	°C
$T_j$	Junction Temperature	200	°C

## THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	0.875	$^{\circ}\text{C/W}$
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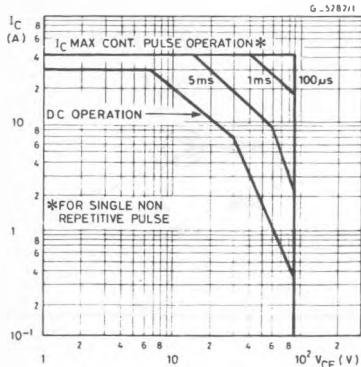
ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$V_{CEO\ bus}^{*}$	Collector-emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 200\text{ mA}$		90			V
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CB} = 100\text{V}$	$T_{case} = 150^{\circ}\text{C}$			1 5	mA mA
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 4\text{V}$				1	mA
$V_{CER\ bus}^{*}$	Collector-emitter Sustaining Voltage ( $R_{BE} = 100\Omega$ )	$I_C = 200\text{mA}$		100			V
$h_{FE}^{*}$	DC Current Gain	$I_C = 7.5\text{A}$	$V_{CE} = 2\text{V}$	25		100	
$V_{CE(sat)}^{*}$	Collector-emitter Saturation Voltage	$I_C = 7.5\text{A}$	$I_B = 0.75\text{A}$			0.8	V
$V_{BE(sat)}$	Base-emitter Saturation Voltage	$I_C = 7.5\text{A}$	$I_B = 0.75\text{A}$			1.3	V
$V_{BE}$	Base-emitter Voltage	$I_C = 7.5\text{A}$	$V_{CE} = 2\text{V}$			1.3	V
$f_T$	Transition Frequency	$I_C = 1\text{A}$ $f = 1\text{MHz}$	$V_{CE} = 10\text{V}$	2			MHz

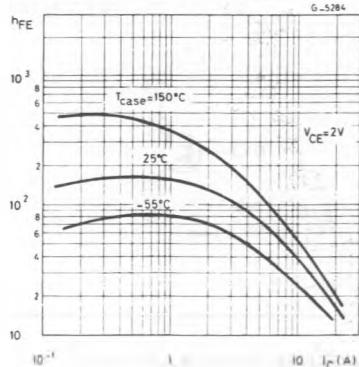
\* Pulsed : pulse duration = 300  $\mu\text{s}$ , duty cycle < 2 %.

For PNP type voltage and current values are negative.

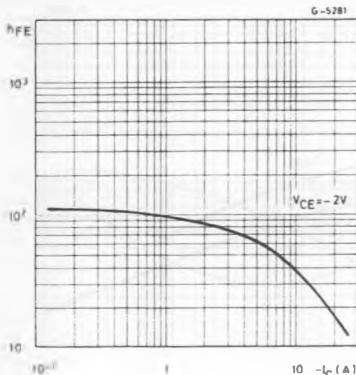
## Safe Operating Areas.



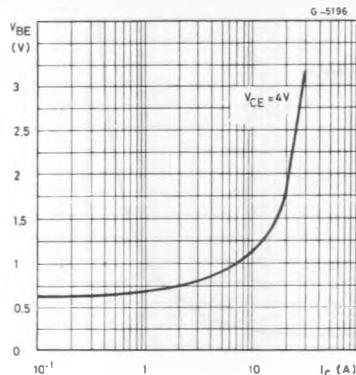
## DC Current Gain (NPN type).



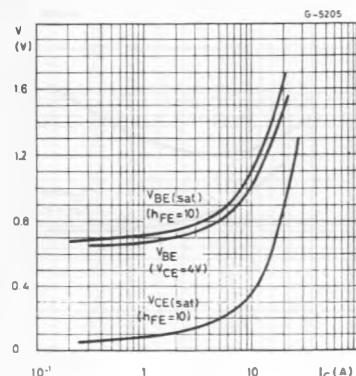
DC Current Gain (PNP type).



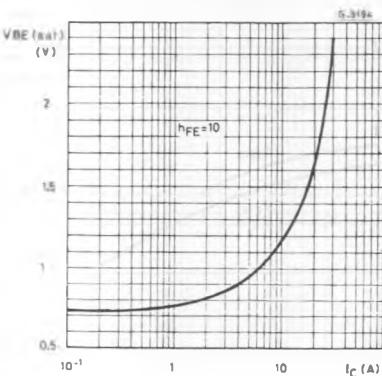
Base-emitter Voltage (PNP type).



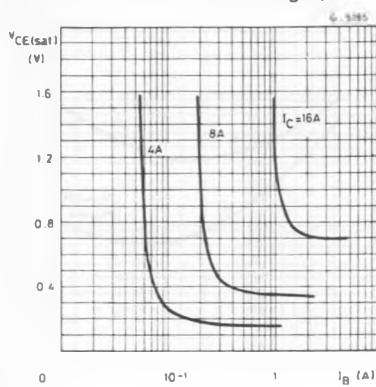
Saturation Voltage (NPN type).



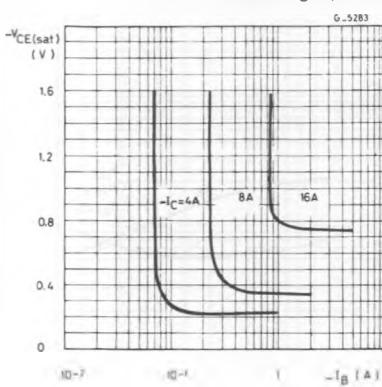
Base-emitter Saturation Voltage (PNP type).



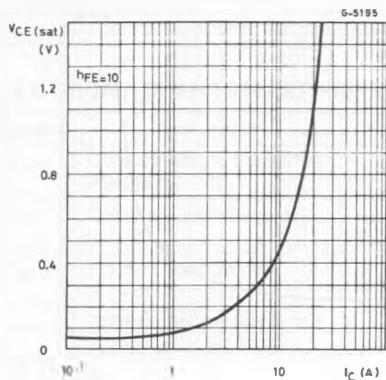
Collector-emitter Saturation Voltage (NPN type).



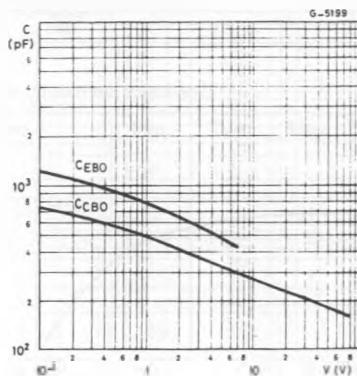
Collector-emitter Saturation Voltage (PNP type).



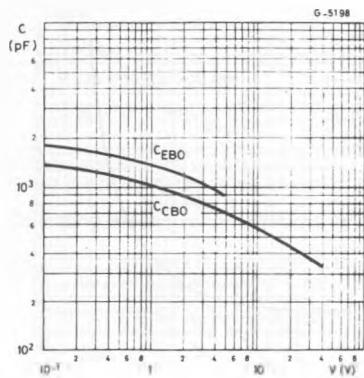
Collector-emitter Saturation Voltage (PNP type).



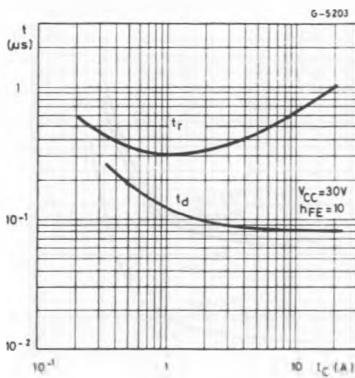
Capacitances (NPN type).



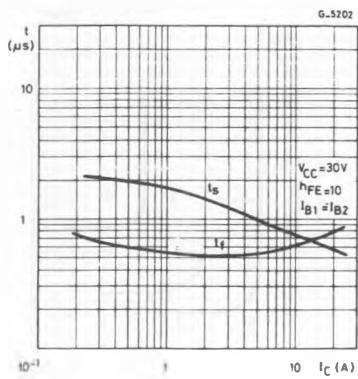
Capacitances (PNP type).



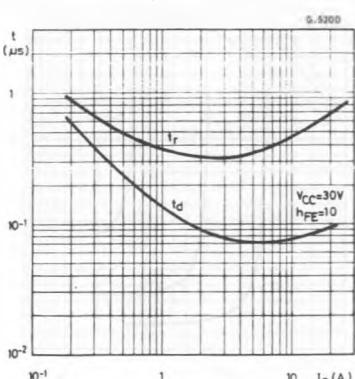
Turn-on Time (NPN type).



Turn-off Time (NPN type).



Turn-on Time (PNP type).



Turn-off Time (PNP type).

