260-320.

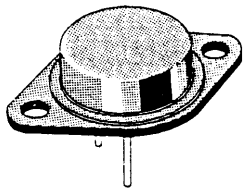
SGS-THOMSON
MICROELECTRONICS

MJ802
MJ4502

COMPLEMENTARY HIGH POWER TRANSISTORS

DESCRIPTION

The MJ802 (NPN) and MJ4502 (PNP) are silicon epitaxial-base complementary power transistors in Jedec 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 $T_{case} \leq 25°C$	200	W
T_{stg}	Storage Temperature	– 65 to 200	°C
T_j	Junction Temperature	200	°C

THERMAL DATA

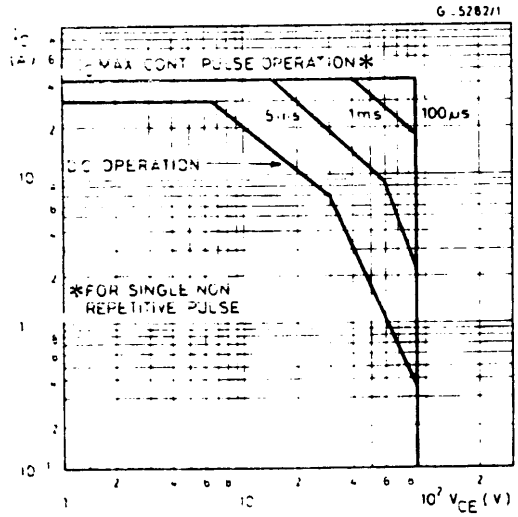
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	0.875	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

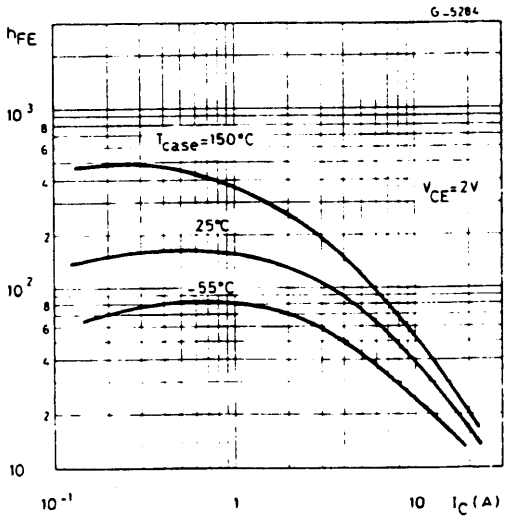
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = 200 mA		90			V
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = 100V T_{case} = 150°C				1 5	mA mA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 4V				1	mA
$V_{CER(sus)}$*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

* Pulsed: pulse duration = 300 µs, duty cycle ≤ 2 %.
For PNP type voltage and current values are negative.

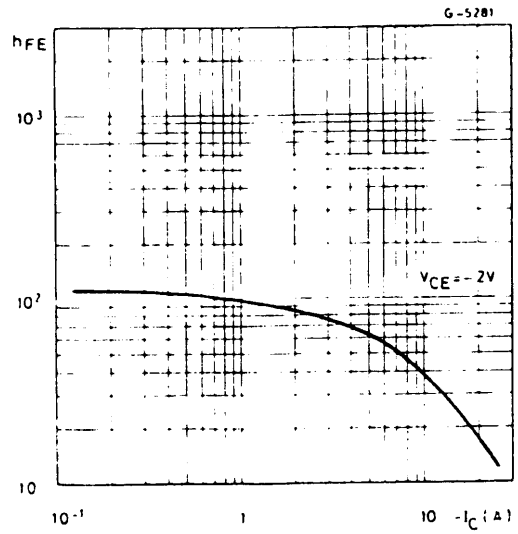
Safe Operating Areas.



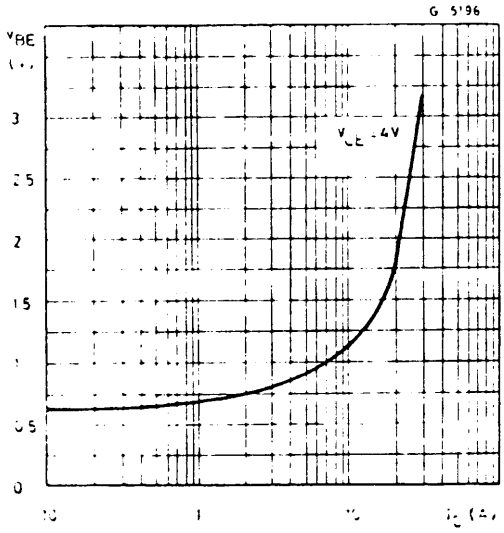
DC Current Gain (NPN type).



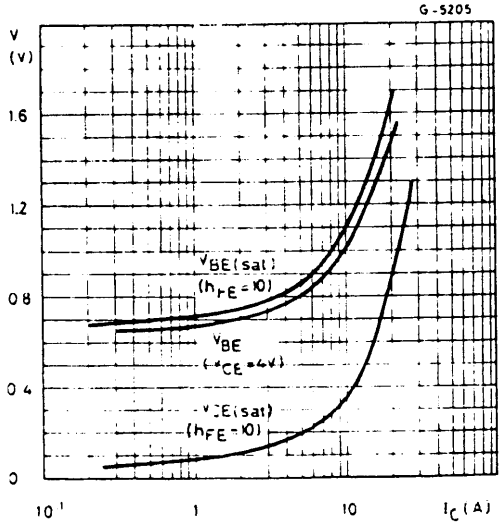
DC Current Gain (PNP type).



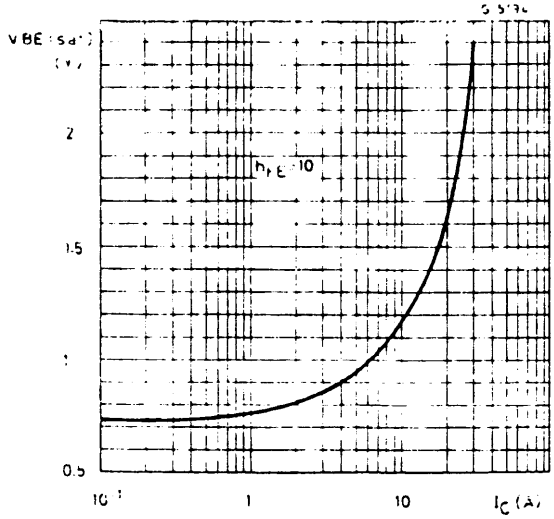
Base-emitter Voltage (PNP type)



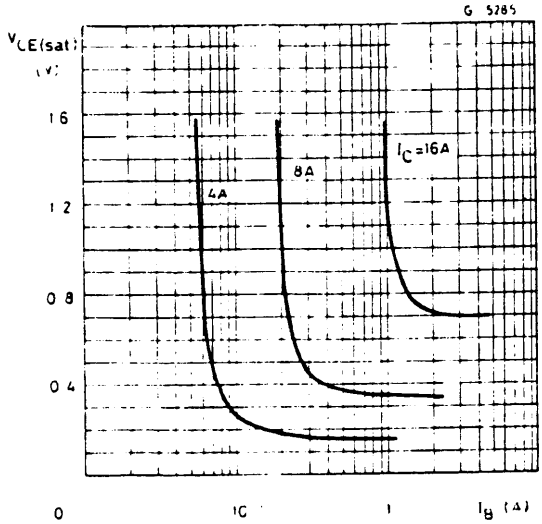
Saturation Voltage (NPN type).



Base emitter Saturation Voltage (PNP type).



Collector-emitter Saturation Voltage (NPN type).



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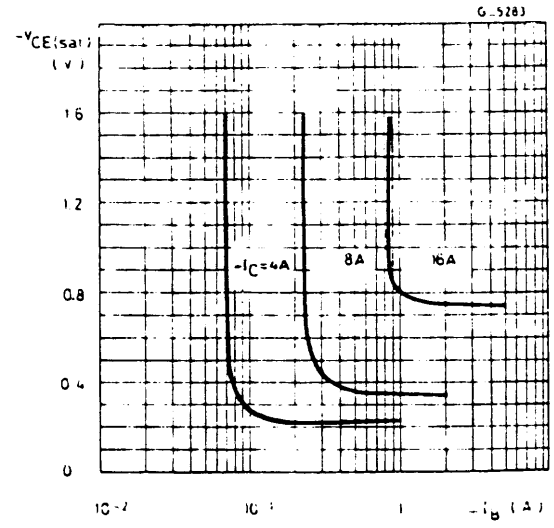

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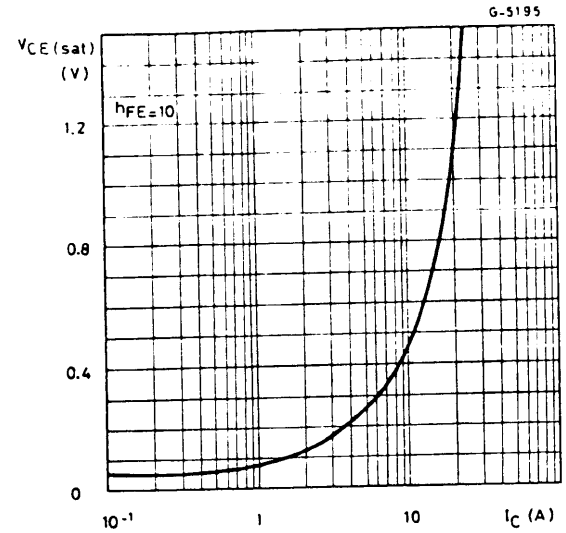
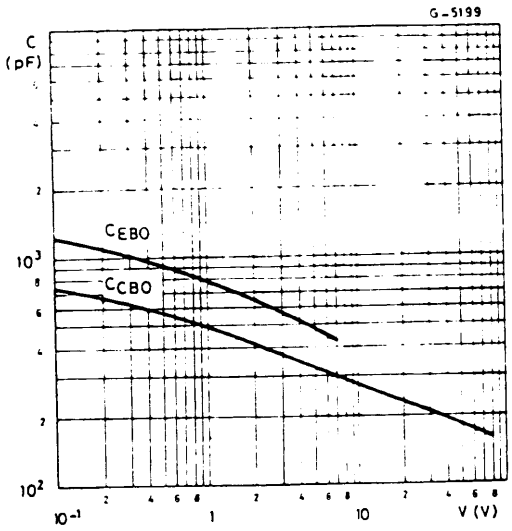


Capacitances (NPN type)



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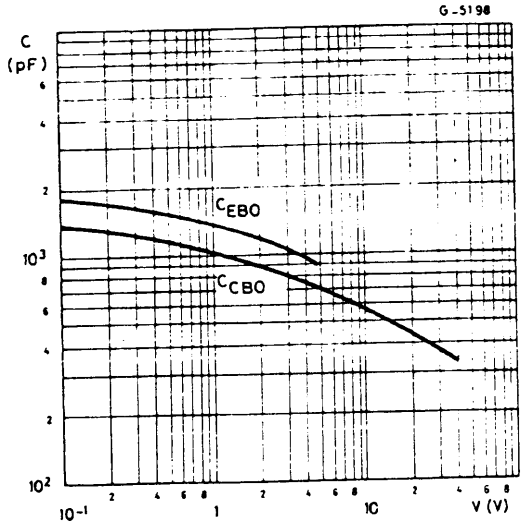
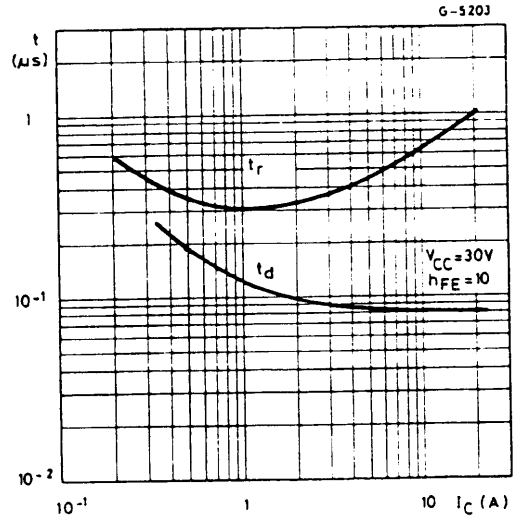


Turn-on Time (NPN type).



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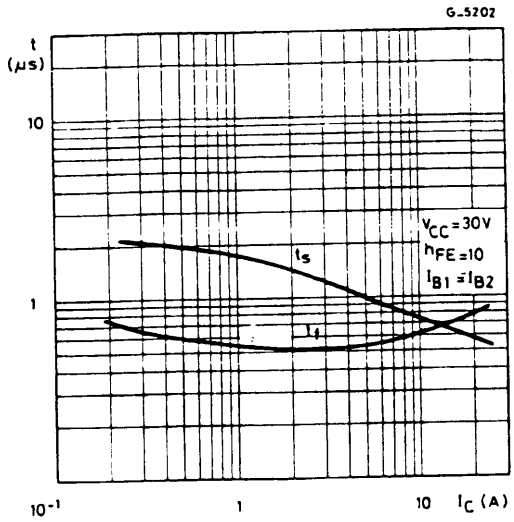

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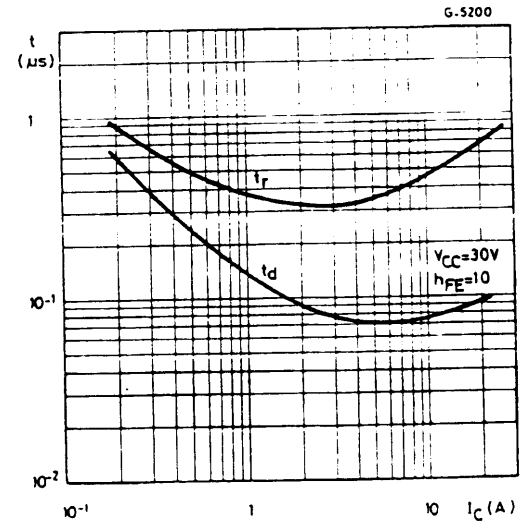

Turn-off Time (PNP type).