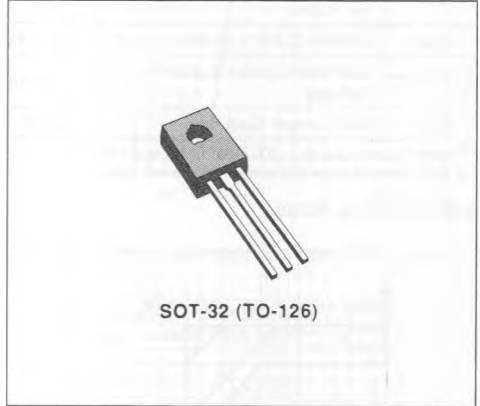


## COMPLEMENTARY POWER TRANSISTORS

### DESCRIPTION

The MJE521 is a silicon epitaxial-base NPN transistor in Jedec TO-126 plastic package, intended for use in 5 to 20W audio amplifiers, general purpose amplifier and switching circuits. The complementary PNP type is the MJE371.



### INTERNAL SCHEMATIC DIAGRAMS



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	40	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	40	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	4	V
$I_C$	Collector Current	4	A
$I_{CM}$	Collector Peak Current	8	A
$I_B$	Base Current	2	A
$P_{Tot}$	Total Power Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$	40	W
$T_{stg}$	Storage Temperature	- 65 to 150	$^\circ\text{C}$
$T_J$	Junction Temperature	150	$^\circ\text{C}$

For PNP types voltage and current values are negative.

**THERMAL DATA**

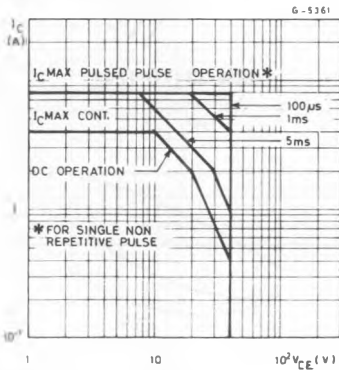
$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	3.12	$^{\circ}C/W$
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**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise specified)

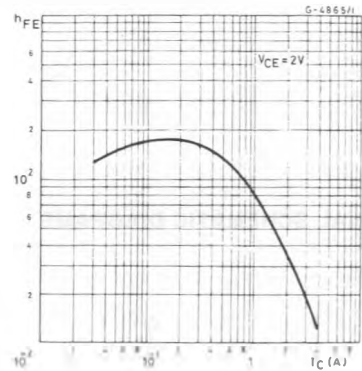
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CB} = 40V$			100	$\mu A$
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 4V$			100	$\mu A$
$V_{CE0(sus)^*}$	Collector-Emitter Sustaining Voltage	$I_C = 0.1A$	40			V
$h_{FE}^*$	DC Current Gain	$I_C = 1A$ $V_{CE} = 1V$	40			

\* Pulsed : pulse duration = 300  $\mu s$ , duty cycle < 1.5 %.  
 For PNP types voltage and current values are negative.

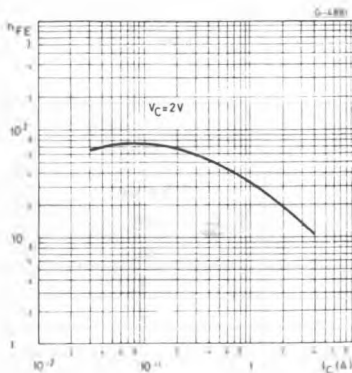
**Safe Operating Areas.**



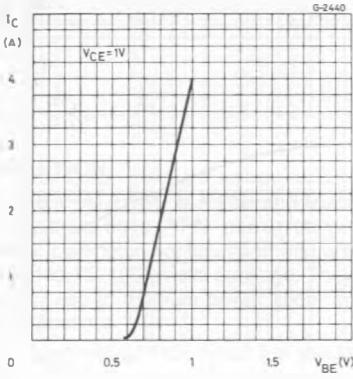
**DC Current Gain (NPN type).**



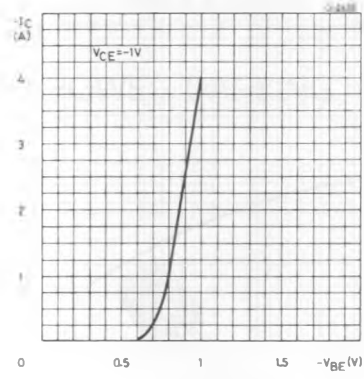
**DC Current Gain (PNP type).**



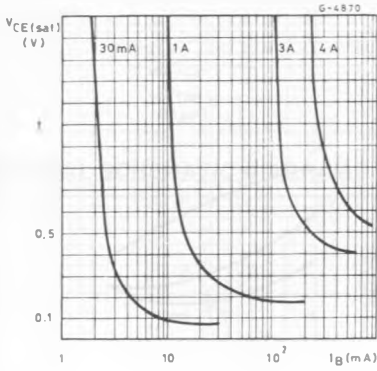
DC Transconductance (NPN type).



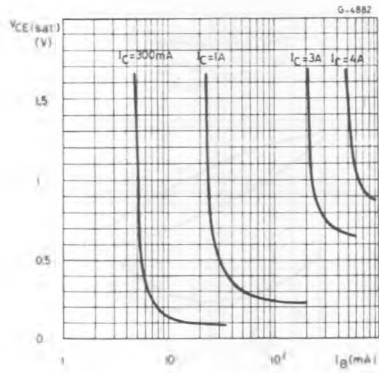
DC Transconductance (PNP type).



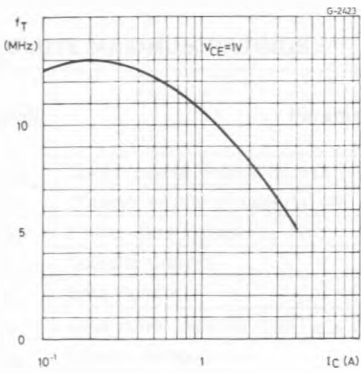
Collector-emitter Saturation Voltage (NPN type).



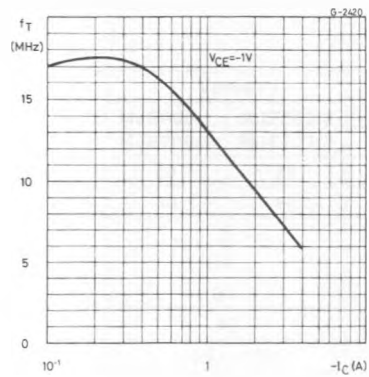
Collector-emitter Saturation Voltage (PNP type).



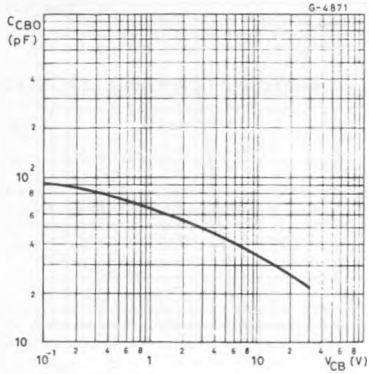
Transition Frequency (NPN type).



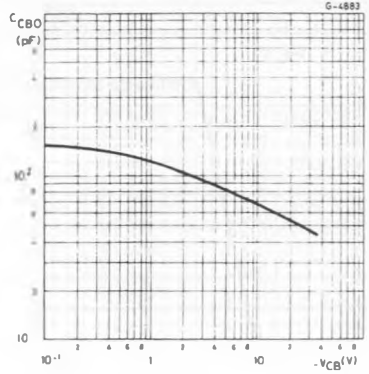
Transition Frequency (PNP type).



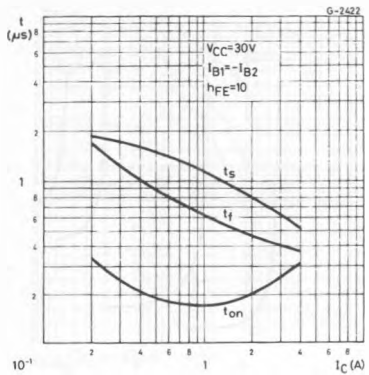
Collector-base Capacitance (NPN type).



Collector-base Capacitance (PNP type).



Saturated Switching Characteristics (NPN type).



Saturated Switching Characteristics (PNP type).

