

MEDIUM POWER LINEAR AND SWITCHING APPLICATIONS

DESCRIPTION

The 2N4921, 2N4922 and 2N4923 are silicon epitaxial planar NPN transistors in Jedge TO-126 plastic package, they are intended for driver circuits, switching and amplifier applications. The complementary PNP types are the 2N4918, 2N4919 and 2N4920 respectively.



INTERNAL SCHEMATIC DIAGRAMS



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	PNP	2N4918	2N4919	2N4920	Unit
		NPN	2N4921	2N4922	2N4923	
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)		40	60	80	V
V_{CBO}	Collector-base Voltage ($I_E = 0$)		40	60	80	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)		5			V
I_C	Collector Current		1			A
I_{CM}	Collector Peak Current		3			A
I_B	Base Current		1			A
P_{Tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$		30			W
T_{stg}	Storage Temperature		- 65 to 150			$^\circ C$
T_J	Junction Temperature		150			$^\circ C$

* For PNP types voltage and current values are negative.

THERMAL DATA

$R_{th j-case}$	Thermal Resistance Junction-case	Max	4.16	°C/W
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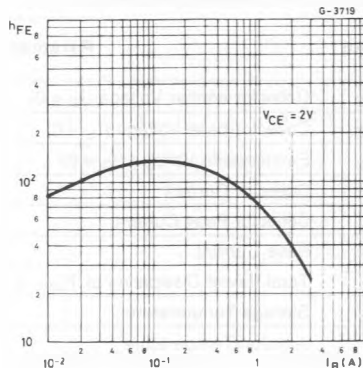
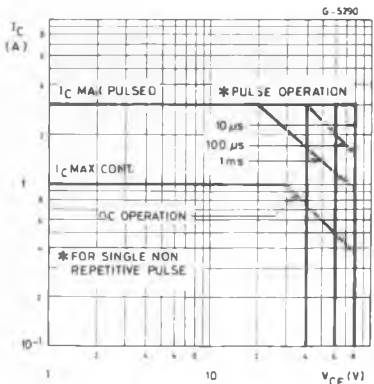
ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cutoff Current ($I_{BO} = 0$)	$V_{CE} = \text{Half rated } V_{CE0}$			0.5	mA
I_{CEX}	Collector Cutoff Current ($V_{BE} = -1.5\text{ V}$)	$V_{CE} = \text{rated } V_{CE0}$ $V_{CE} = \text{rated } V_{CE0}$ $T_{case} = 125\text{ °C}$			0.1 0.5	mA
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CE} = \text{rated } V_{CBO}$			0.1	mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5\text{ V}$			1	mA
$V_{CE0(sus)}^*$	Collector-emitter Sustaining Voltage	$I_C = 0.1\text{ A}$ for 2N4918, 2N4921 for 2N4919, 2N4922 for 2N4920, 2N4923	40 60 80			V V V
h_{FE}^*	DC Current Gain	$I_C = 50\text{ mA}$ $V_{CE} = 1\text{ V}$ $I_C = 500\text{ mA}$ $V_{CE} = 1\text{ V}$ $I_C = 1\text{ A}$ $V_{CE} = 1\text{ V}$	40 30 10		150	
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 1\text{ A}$ $I_B = 0.1\text{ A}$			0.6	V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 1\text{ A}$ $I_B = 0.1\text{ A}$			1.3	V
V_{BE}^*	Base Emitter Voltage	$I_C = 1\text{ A}$ $V_{CE} = 1\text{ V}$			1.3	V
f_T	Transistion Frequency	$I_C = 250\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ MHz}$	3			MHz
C_{CBO}	Collector-base Capacitance	$V_{CB} = 10\text{ V}$ $I_E = 0$ $f = 100\text{ KHz}$			100	pF
h_{FE}	Small Signal Current Gain	$I_C = 250\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$	25			

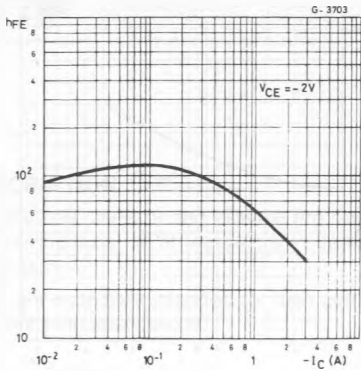
* Pulsed : pulse duration = 300us duty cycle ≤ 2%.
For NPN types voltage and current values are negative.

Safe Operating Areas.

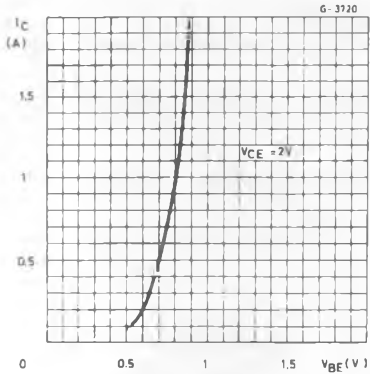
DC Current Gain (NPN types).



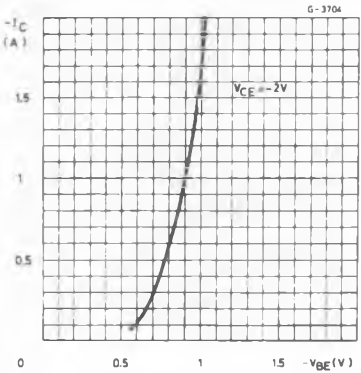
DC Current Gain (PNP types).



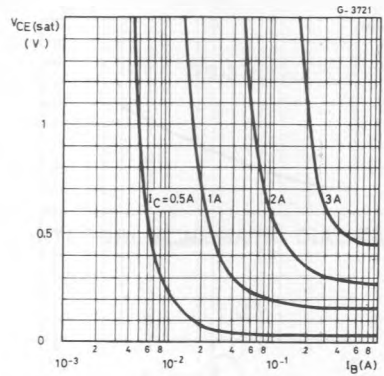
DC Transconductance (NPN types).



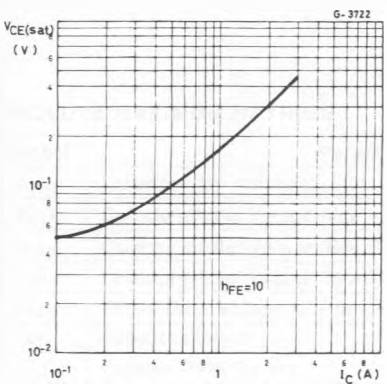
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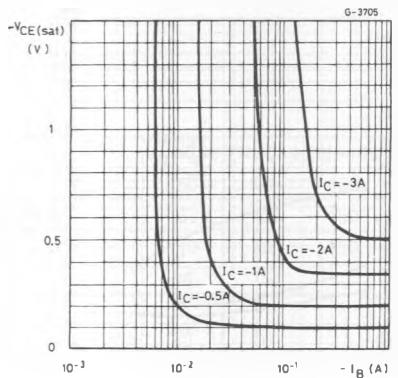
Collector-emitter Saturation Voltage (NPN types).



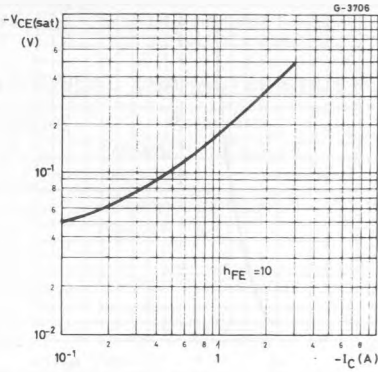
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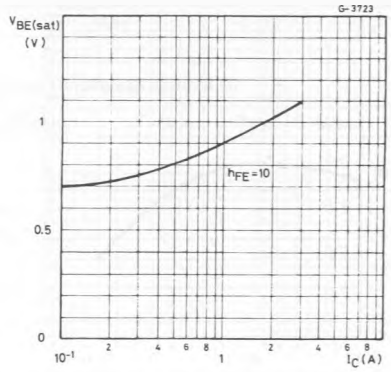
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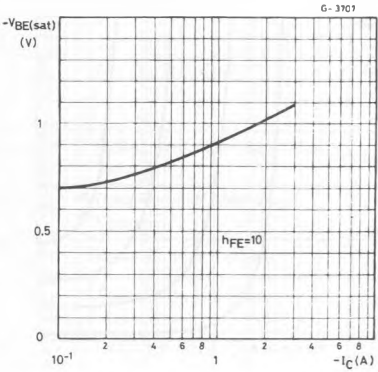
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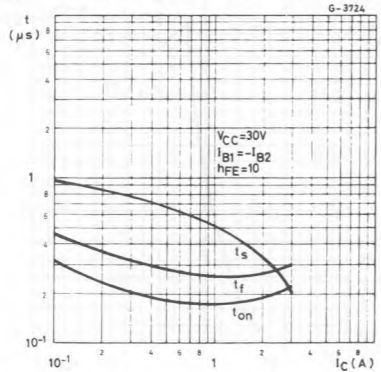
Base-emitter Saturation Voltage (NPN types).



Base-emitter Saturation Voltage (PNP types).



Saturated Switching Characteristics (NPN types).



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