

Transistors PNP germanium

PNP germanium transistors

* **2N 1305**
 * **2N 1307**
 * **2N 1309**

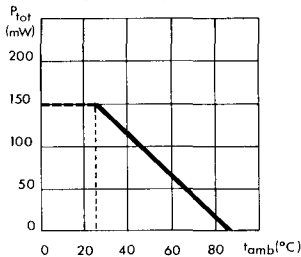
* Dispositif recommandé
Preferred device

- Usage général et commutation
General purpose and switching

- Transistors complémentaires
Complementary transistors

PNP	←	→	NPN
2N 1305	←	→	2N 1304
2N 1307	←	→	2N 1306
2N 1309	←	→	2N 1308

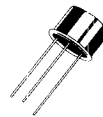
Dissipation de puissance maximale
Maximum power dissipation



Données principales
Principal features

V _{CEO}	30 V						
I _C	300 mA						
V _{CEsat} (10 mA)	0,2 V max.						
h _{21E} (10 mA)	<table border="0"> <tr> <td>2N 1305</td> <td>40-200</td> </tr> <tr> <td>2N 1307</td> <td>60-300</td> </tr> <tr> <td>2N 1309</td> <td>80 min.</td> </tr> </table>	2N 1305	40-200	2N 1307	60-300	2N 1309	80 min.
2N 1305	40-200						
2N 1307	60-300						
2N 1309	80 min.						

Boîtier TO-39
Case



Valeurs limites absolues d'utilisation à t_{amb} = 25°C
Absolute ratings (limiting values)

Paramètre <i>Parameter</i>				
Tension collecteur-base <i>Collector-base voltage</i>		V _{CBO}	-30	V
Tension émetteur-base <i>Emitter-base voltage</i>		V _{EBO}	-25	V
Courant collecteur <i>Collector current</i>		I _C	-300	mA
Dissipation de puissance <i>Power dissipation</i>		P _{tot}	150	W
Température de jonction <i>Junction temperature</i>	max	t _j	85	°C
Température de stockage <i>Storage temperature</i>	min	t _{stg}	-65	°C
	max		100	

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2N 1307 *
2N 1309 *

Caractéristiques générales à $t_{amb} = 25^{\circ}C$ General characteristics

Caractéristiques statiques Static characteristics

Paramètre Parameter	Conditions de mesure Test conditions		Min. Min.	Typ. Typ.	Max. Max.		
Courant résiduel collecteur-base Collector-base cut-off current	$I_E = 0$ $V_{CB} = -25 V$			-3	-6	μA	
Courant résiduel émetteur-base Emitter-base cut-off current	$I_C = 0$ $V_{EB} = -25 V$			-2	-6	μA	
Tension de pénétration Punch-through voltage		2N 1305	V_{pt}	-20		V	
		2N 1307		-15			
		2N 1309		-15			
Valeur statique du rapport du transfert direct du courant Static forward current transfer ratio	$I_C = -10 mA$ $V_{CE} = -1 V$	2N 1305	h_{21E}	40	200		
		2N 1307		60	300		
		2N 1309		80	150		
	$I_C = -200 mA$ $V_{CE} = -1 V$	2N 1305		15			
		2N 1307		20			
		2N 1309		20			
Tension de saturation collecteur-émetteur Collector-emitter saturation voltage	$I_C = -10 mA$ $I_B = -0,25 mA$	2N 1305	V_{CEsat}		-0,1	-0,2	
	$I_C = -10 mA$ $I_B = -0,17 mA$	2N 1307			-0,1	-0,2	
	$I_C = -10 mA$ $I_B = -0,13 mA$	2N 1309			-0,1	-0,2	
Tension de saturation base-émetteur Base-emitter saturation voltage	$I_C = -10 mA$ $I_B = -0,5 mA$		V_{BEsat}	-0,15		-0,35	V

Caractéristiques dynamiques (pour petits signaux) Dynamic characteristics (for small signals)

Fréquence de coupure Cut-off frequency	$I_E = 1 mA$ $V_{CB} = -5 V$	2N 1305	f_{h21b}	5	10	MHz	
		2N 1307		10	15		
		2N 1309		15	20		
Capacité de sortie Output capacitance	$V_{CB} = -5 V$ $I_E = 0$ $f = 1 MHz$		C_{22b}		9	20	pF

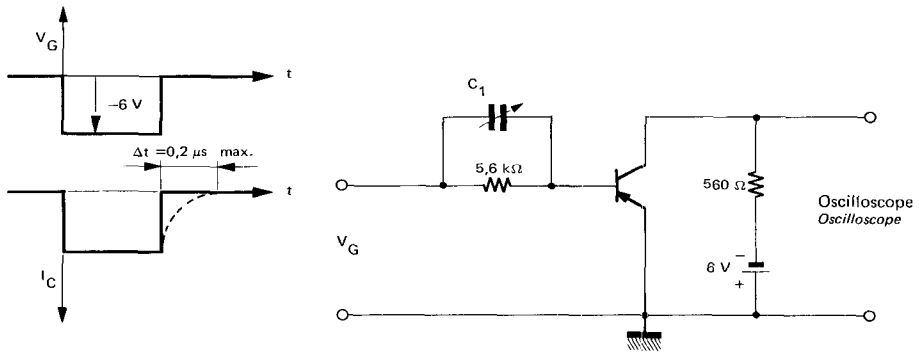
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Caractéristiques générales à $t_{amb} = 25^{\circ}C$ General characteristics

Caractéristiques de commutation Switching characteristics

Paramètre Parameter	Conditions de mesure Test conditions			Min. Min.	Typ. Typ.	Max. Max.	
Charge stockée Stored charge	Suivant schéma See circuit	2N 1305 2N 1307 2N 1309	Q_s		1000 700 700		pC

Schéma de mesure de la charge stockée Stored charge test circuit



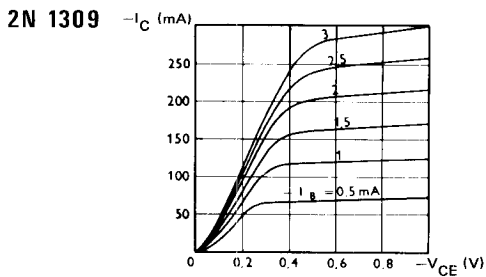
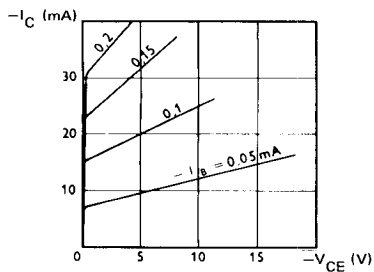
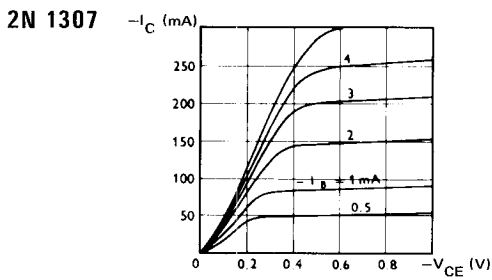
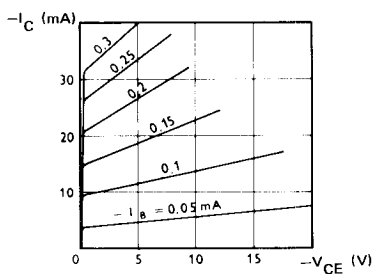
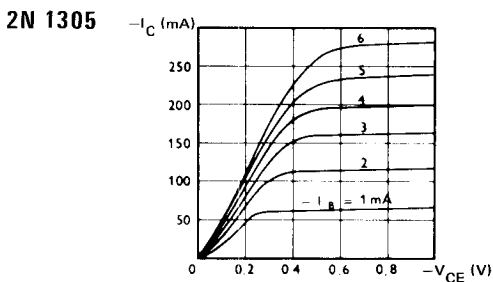
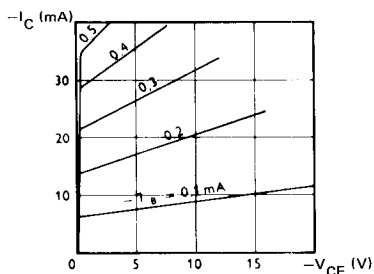
Mesure : C_1 est augmenté jusqu'à ce que $\Delta t = 0,2 \mu s$. Alors $Q_s = C_1 \cdot V_G$
 Measure : C_1 is increased till $\Delta t = 0,2 \mu s$. Then $Q_s = C_1 \cdot V_G$

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Caractéristiques statiques
Static characteristics

Montage en émetteur commun (mesures en impulsions)
Common emitter circuit (pulse tests)

$t_{amb} = 25^{\circ}C$



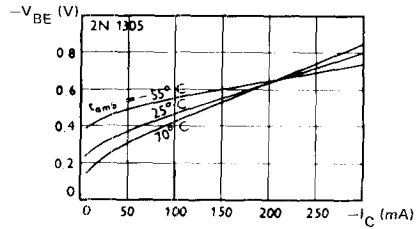
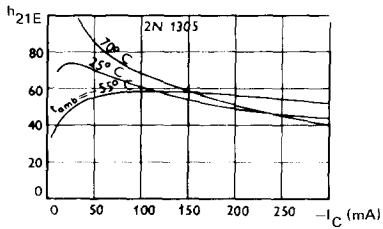
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Caractéristiques statiques
Static characteristics

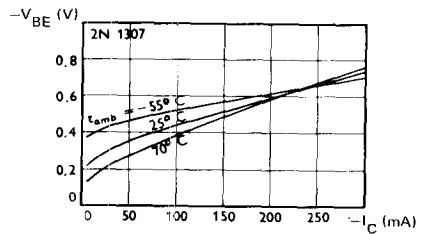
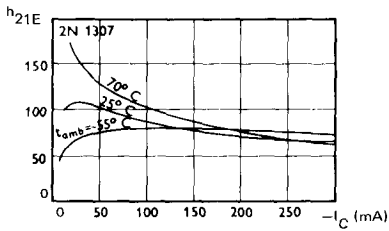
Montage en émetteur commun (mesures en impulsions)
Common emitter circuit (pulse tests)

$V_{CE} = -1 \text{ V}$

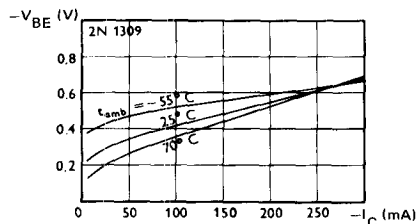
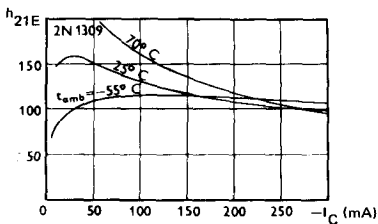
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2N 1307



2N 1309

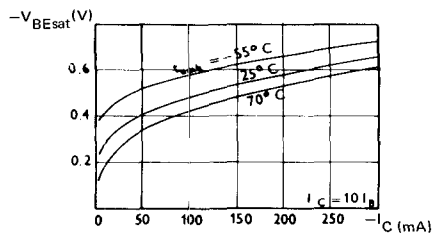
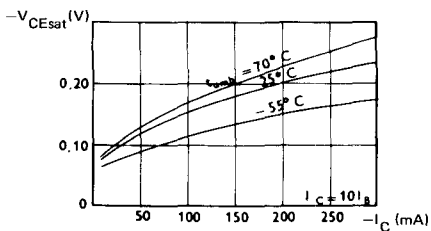


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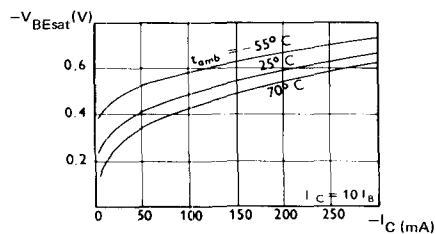
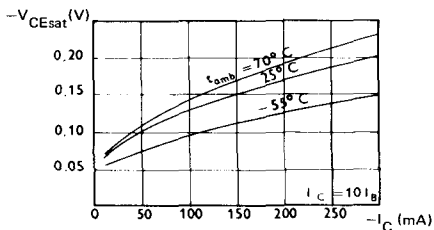
Caractéristiques statiques
Static characteristics

(mesures en impulsions)
(pulse tests)

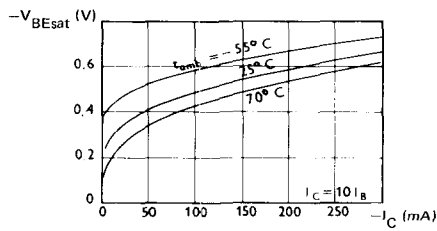
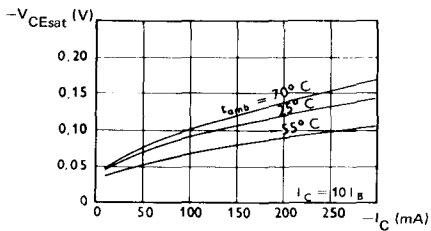
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2N 1307



2N 1309

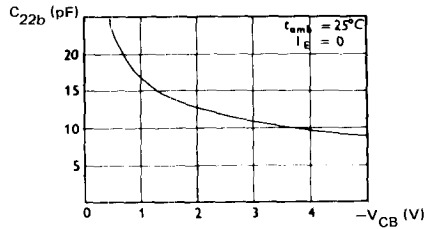
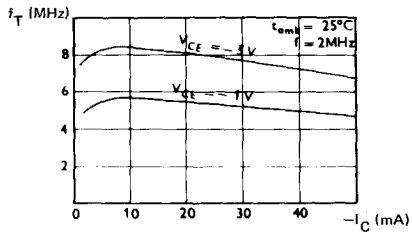


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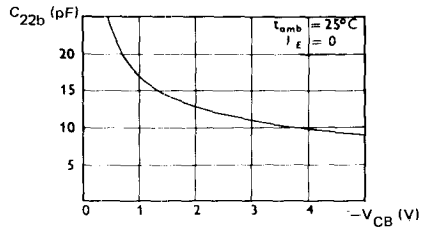
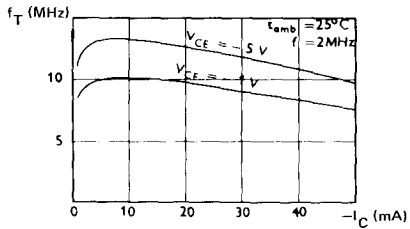
Caractéristiques dynamiques (pour petits signaux)
Dynamic characteristics (for small signals)

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