

PNP Silicon Planar Transistors

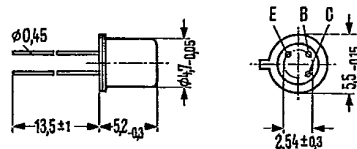
SIEMENS AKTIENGESELLSCHAFT T-37-17

2 N 2906 A

2 N 2907 A

2 N 2906 A and 2 N 2907 A are epitaxial PNP silicon planar transistors in TO 18 case (18 A 3 DIN 41876). The collector is electrically connected to the case. The transistors are particularly suitable for use as high-speed switches.

Type	Ordering code
2 N 2906 A	Q62702-F408
2 N 2907 A	Q62702-S170



Approx. weight 0.3 g

Dimensions in mm

Maximum ratings

	2 N 2906 A	2 N 2907 A
Collector-emitter voltage	60	V
Collector-base voltage	60	V
Emitter-base voltage	5	V
Collector current	0.6	A
Junction temperature	200	°C
Storage temperature range	-65 to +200	°C
Total power dissipation ($T_{amb} = 25\text{ °C}$)	0.4	W
Total power dissipation ($T_{case} = 25\text{ °C}$)	1.8	W

Thermal resistance

Junction to ambient air	R_{thJA}	< 438	K/W
Junction to case	R_{thJC}	< 97	K/W

Static characteristics ($T_{amb} = 25^\circ\text{C}$)

		2 N 2906 A	2 N 2907 A	
Collector-base breakdown voltage ($-I_C = 10\ \mu\text{A}$)	$-V_{(BR)CBO}$	> 60	> 60	V
Collector-emitter breakdown voltage ($-I_C = 10\ \text{mA}$)	$-V_{(BR)CEO}$	> 60	> 60	V
Emitter-base breakdown voltage ($-I_E = 10\ \mu\text{A}$)	$-V_{(BR)EBO}$	> 5	> 5	V
Collector-emitter saturation voltage ($-I_B = 15\ \text{mA}$; $-I_C = 150\ \text{mA}$)	$-V_{CEsat}$	< 0.4	< 0.4	V
($-I_B = 50\ \text{mA}$; $-I_C = 500\ \text{mA}$)	$-V_{CEsat}$	< 1.6	< 1.6	V
Base-emitter saturation voltage ($-I_C = 150\ \text{mA}$; $-I_B = 15\ \text{mA}$)	$-V_{BEsat}$	< 1.3	< 1.3	V
($-I_C = 500\ \text{mA}$; $-I_B = 50\ \text{mA}$)	$-V_{BEsat}$	< 2.6	< 2.6	V
Collector cutoff current ($-V_{CB} = 50\ \text{V}$)	$-I_{CBO}$	< 10	< 10	nA
($-V_{CB} = 50\ \text{V}$; $T_{amb} = 150^\circ\text{C}$)	$-I_{CBO}$	< 10	< 10	μA
DC current gain ($-V_{CE} = 10\ \text{V}$; $-I_C = 100\ \mu\text{A}$)	h_{FE}	> 40	> 75	—
($-V_{CE} = 10\ \text{V}$; $-I_C = 1\ \text{mA}$)	h_{FE}	> 40	> 100	—
($-V_{CE} = 10\ \text{V}$; $-I_C = 10\ \text{mA}$)	h_{FE}	> 40	> 100	—
($-V_{CE} = 10\ \text{V}$; $-I_C = 150\ \text{mA}$)	h_{FE}	40 to 120	100 to 300	—
($-V_{CE} = 10\ \text{V}$; $-I_C = 500\ \text{mA}$)	h_{FE}	> 40	> 50	—

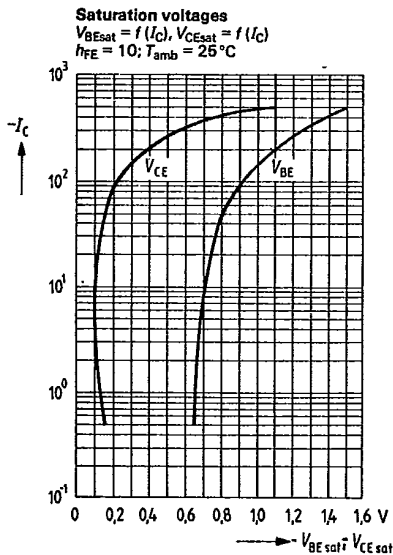
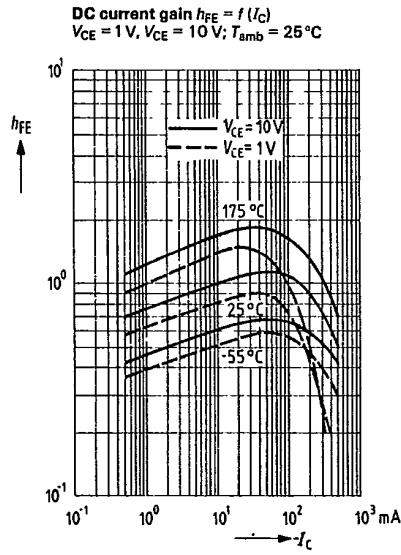
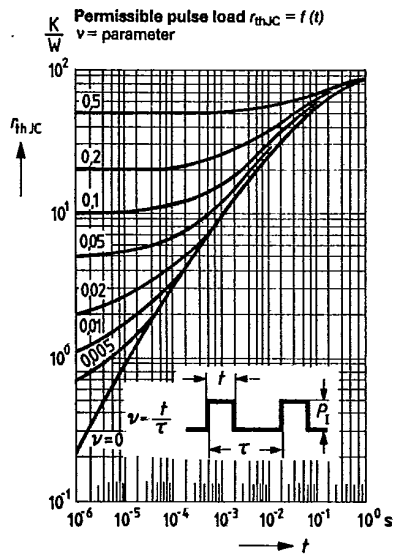
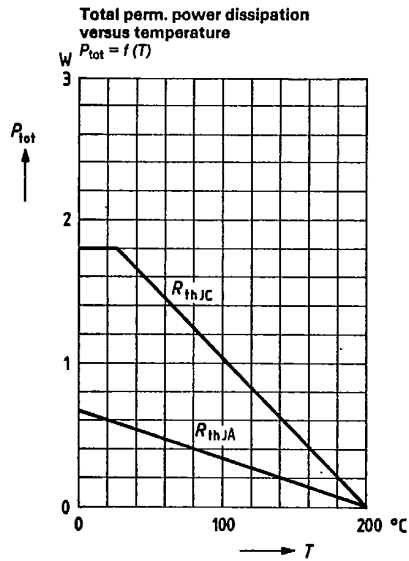
Dynamic characteristics ($T_{amb} = 25^\circ\text{C}$)

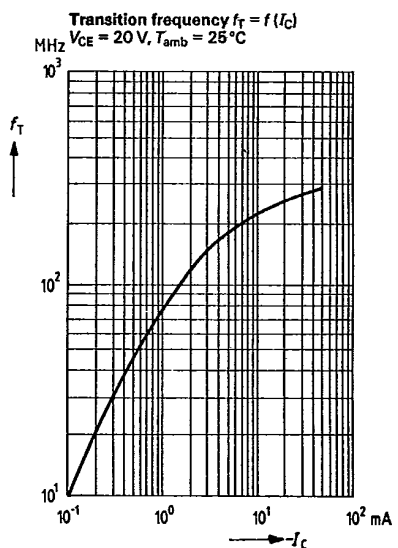
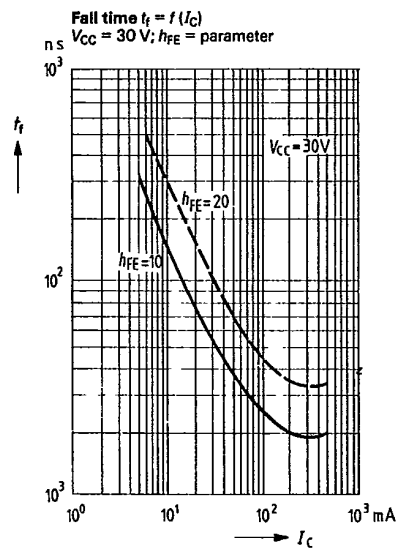
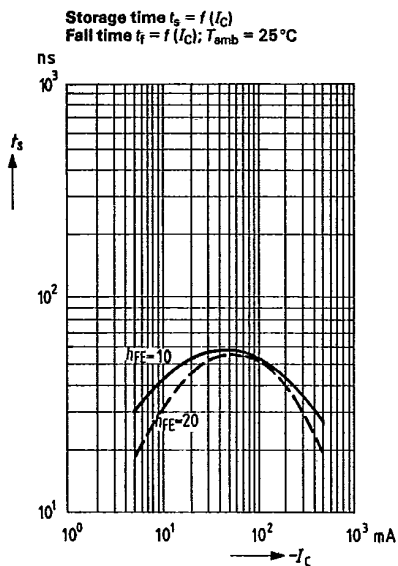
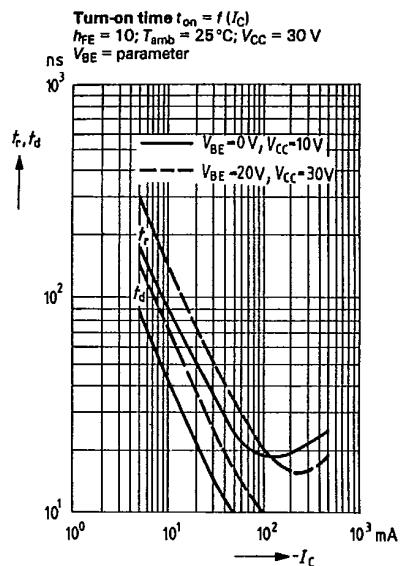
Collector-base capacitance ($-V_{CB} = 10\ \text{V}$; $f = 100\ \text{kHz}$)	C_{CBO}	< 8	< 8	pF
Transition frequency ($-V_{CE} = 20\ \text{V}$; $-I_C = 50\ \text{mA}$; $f = 100\ \text{MHz}$)	f_T	> 200	> 200	MHz

Switching times:

($-V_{CC} = 30\ \text{V}$; $-I_C = 150\ \text{mA}$; I_{B1} approx. $-I_{B2}$ approx. $15\ \text{mA}$)				
Delay time	t_d	< 10	< 10	ns
Rise time	t_r	< 40	< 40	ns
Storage time	t_s	< 80	< 80	ns
Fall time	t_f	< 30	< 30	ns

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