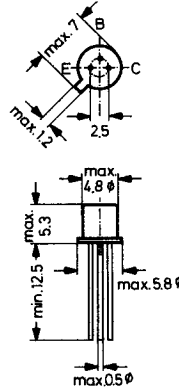


# 2N2906A, 2N2907A

## PNP Silicon Epitaxial Planar Transistors

with high cutoff frequency, for high speed switching

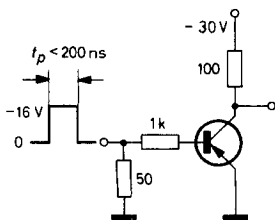


Metal case JEDEC TO-18  
18 A 3 according to DIN 41 876  
Collector connected to case

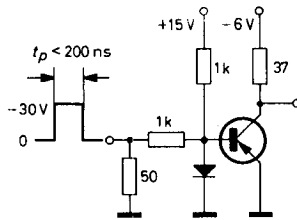
Weight approximately 0.35 g  
Dimensions in mm

## Absolute Maximum Ratings

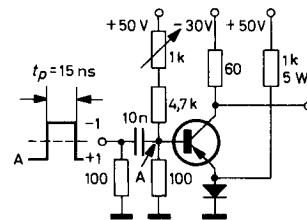
	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	60	V
Collector Emitter Voltage	$-V_{CEO}$	60	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	0.6	A
Power Dissipation at $T_{amb} = 25^\circ\text{C}$ at $T_C = 25^\circ\text{C}$	$P_{tot}$ $P_{tot}$	0.4 1.8	W W
Junction Temperature	$T_j$	200	$^\circ\text{C}$
Storage Temperature Range	$T_S$	$-65 \dots +200$	$^\circ\text{C}$



**Fig. 1:**  
Test circuit for turn-on time,  
saturated operation



**Fig. 2:**  
Test circuit for turn-off time,  
saturated operation



**Fig. 3:**  
Test circuit for non-saturated  
operation

Characteristics at  $T_j = 25^\circ\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $-V_{CE} = 10\text{ V}$ , $-I_C = 0.1\text{ mA}$	<b>2N2906A</b> <b>2N2907A</b>	$h_{FE}$ $h_{FE}$	40 75	— —	— —
at $-V_{CE} = 10\text{ V}$ , $-I_C = 1\text{ mA}$	<b>2N2906A</b> <b>2N2907A</b>	$h_{FE}$ $h_{FE}$	40 100	— —	— —
at $-V_{CE} = 10\text{ V}$ , $-I_C = 10\text{ mA}$	<b>2N2906A</b> <b>2N2907A</b>	$h_{FE}$ $h_{FE}$	40 100	— —	— —
at $-V_{CE} = 10\text{ V}$ , $-I_C = 150\text{ mA}$	<b>2N2906A</b> <b>2N2907A</b>	$h_{FE}$ $h_{FE}$	40 100	— —	120 300
at $-V_{CE} = 10\text{ V}$ , $-I_C = 0.5\text{ A}$	<b>2N2906A</b> <b>2N2907A</b>	$h_{FE}$ $h_{FE}$	40 50	— —	— —
Collector Saturation Voltage					
at $-I_C = 150\text{ mA}$ , $-I_B = 15\text{ mA}$	$-V_{CEsat}$	—	—	0.4	V
at $-I_C = 500\text{ mA}$ , $-I_B = 50\text{ mA}$	$-V_{CEsat}$	—	—	1.6	V
Base Saturation Voltage					
at $-I_C = 150\text{ mA}$ , $-I_B = 15\text{ mA}$	$-V_{BEsat}$	—	—	1.3	V
at $-I_C = 500\text{ mA}$ , $-I_B = 50\text{ mA}$	$-V_{BEsat}$	—	—	2.6	V
Collector Cutoff Current					
at $-V_{CB} = 50\text{ V}$	$-I_{CBO}$	—	—	10	nA
at $-V_{CB} = 50\text{ V}$ , $T_{amb} = 150^\circ\text{C}$	$-I_{CBO}$	—	—	10	$\mu\text{A}$
at $-V_{CE} = 30\text{ V}$ , $-V_{EB} = 0.5\text{ V}$	$-I_{CEV}$	—	—	50	nA
Base Cutoff Current at $-V_{CE} = 30\text{ V}$ , $-V_{EB} = 0.5\text{ V}$	$-I_{EBV}$	—	—	50	nA
Collector Base Breakdown Voltage at $-I_C = 10\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	60	—	—	V
Collector Emitter Breakdown Voltage at $-I_C = 10\text{ mA}$	$-V_{(BR)CEO}$	60	—	—	V
Emitter Base Breakdown Voltage at $-I_E = 10\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	—	—	V
Gain Bandwidth Product	$f_T$	200	—	—	MHz
at $-V_{CE} = 20\text{ V}$ , $-I_C = 50\text{ mA}$ , $f = 100\text{ MHz}$					
Collector Base Capacitance	$C_{CBO}$	—	—	8	pF
at $-V_{CB} = 10\text{ V}$ , $f = 100\text{ kHz}$					
Emitter Base Capacitance at $-V_{EB} = 2\text{ V}$ , $f = 100\text{ kHz}$	$C_{EBO}$	—	—	30	pF
Thermal Resistance					
Junction to Ambient	$R_{thA}$	—	—	440	K/W
Junction to Case	$R_{thC}$	—	—	97	K/W
Switching Times					
Delay Time (see Fig. 1)	$t_d$	—	6	10	ns
Rise Time (see Fig. 1)	$t_r$	—	20	40	ns
Turn-On Time (see Fig. 1)	$t_{on}$	—	26	45	ns
Storage Time (see Fig. 2)	$t_s$	—	50	80	ns
Fall Time (see Fig. 2)	$t_f$	—	20	30	ns
Turn-Off Time (see Fig. 2)	$t_{off}$	—	70	100	ns
Total Switching Time (see Fig. 3)	$t_{total}$	—	12	—	ns