

PNP Silicon Planar Transistors

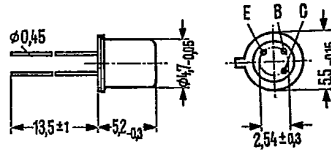
2 N 2906

SIEMENS AKTIENGESELLSCHAFT **D T-37-17**

2 N 2907

2 N 2906 and 2 N 2907 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	Q62702-F137
2 N 2907	Q62702-S111



Approx. weight 0.3 g

Dimensions in mm

Maximum ratings

Collector-emitter voltage  
 Collector-base voltage  
 Emitter-base voltage  
 Collector current  
 Junction temperature  
 Storage temperature range  
 Total power dissipation ( $T_{amb} = 25\text{ °C}$ )  
 Total power dissipation ( $T_{case} = 25\text{ °C}$ )

	2 N 2906	2 N 2907
$-V_{CEO}$	40	V
$-V_{CBO}$	60	V
$-V_{EBO}$	5	V
$-I_C$	0.6	A
$T_j$	200	°C
$T_{stg}$	-65 to +200	°C
$P_{tot}$	0.4	W
$P_{tot}$	1.8	W

Thermal resistance

Junction to ambient air  
 Junction to case

$R_{thJA}$	< 438	K/W
$R_{thJC}$	< 97	K/W

**Static characteristics ( $T_{amb} = 25\text{ °C}$ )**

		2 N 2906	2 N 2907	
Collector-base breakdown voltage ( $-I_C = 10\text{ }\mu\text{A}$ )	$-V_{(BR)CBO}$	> 60	> 60	V
Collector-emitter breakdown voltage ( $-I_C = 10\text{ mA}$ )	$-V_{(BR)CEO}$	> 40	> 40	V
Emitter-base breakdown voltage ( $-I_E = 5\text{ V}$ )	$-V_{(BR)EBO}$	> 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 ( $-V_{CB} = 50\text{ V}$ )	$-I_{CBO}$	< 20	< 20	nA
( $-V_{CB} = 50\text{ V}$ ; $T_{amb} = 150\text{ °C}$ )	$-I_{CBO}$	< 20	< 20	$\mu\text{A}$
DC current gain ( $-V_{CE} = 10\text{ V}$ ; $-I_C = 100\text{ }\mu\text{A}$ )	$h_{FE}$	> 20	> 35	-
( $-V_{CE} = 10\text{ V}$ ; $-I_C = 1\text{ mA}$ )	$h_{FE}$	> 25	> 50	-
( $-V_{CE} = 10\text{ V}$ ; $-I_C = 10\text{ mA}$ )	$h_{FE}$	> 35	> 75	-
( $-V_{CE} = 10\text{ V}$ ; $-I_C = 150\text{ mA}$ )	$h_{FE}$	40 to 120	100 to 300	-
( $-V_{CE} = 10\text{ V}$ ; $-I_C = 500\text{ mA}$ )	$h_{FE}$	> 20	> 30	-

**Dynamic characteristics ( $T_{amb} = 25\text{ °C}$ )**

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