

PNP Silicon Planar Transistors

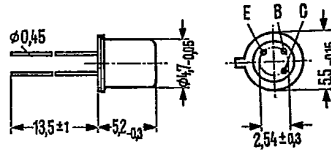
2 N 2906

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

| | | 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 |
| ($-V_{CB} = 50\text{ V}$; $T_{amb} = 150\text{ }^{\circ}\text{C}$) | $-I_{CBO}$ | < 20 | < 20 | μA |
| 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 ($T_{amb} = 25\text{ }^{\circ}\text{C}$)

| | | | | |
|--|-----------|-------|-------|-----|
| 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 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 |