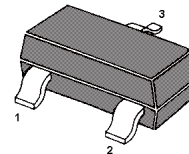


MMBT2907 / MMBT2907A

PNP Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

The transistor is subdivided into one group according to its DC current gain.



1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

| Parameter | Symbol | Value | Unit |
|---------------------------|------------|---------------|------------------|
| Collector Base Voltage | $-V_{CBO}$ | 60 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 40 60 | V |
| Emitter Base Voltage | $-V_{EBO}$ | 5 | V |
| Collector Current | $-I_C$ | 600 | mA |
| Power Dissipation | P_{tot} | 350 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | - 55 to + 150 | $^\circ\text{C}$ |

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

| Parameter | | Symbol | Min. | Max. | Unit |
|--|-----------|----------------|------|------|------|
| DC Current Gain at $-I_C = 0.1\text{ mA}$, $-V_{CE} = 10\text{ V}$ | MMBT2907 | h_{FE} | 35 | - | - |
| | MMBT2907A | h_{FE} | 75 | - | - |
| at $-I_C = 1\text{ mA}$, $-V_{CE} = 10\text{ V}$ | MMBT2907 | h_{FE} | 50 | - | - |
| | MMBT2907A | h_{FE} | 100 | - | - |
| at $-I_C = 10\text{ mA}$, $-V_{CE} = 10\text{ V}$ | MMBT2907 | h_{FE} | 75 | - | - |
| | MMBT2907A | h_{FE} | 100 | - | - |
| at $-I_C = 150\text{ mA}$, $-V_{CE} = 10\text{ V}$ | MMBT2907 | h_{FE} | 100 | 300 | - |
| | MMBT2907A | h_{FE} | 100 | - | - |
| at $-I_C = 500\text{ mA}$, $-V_{CE} = 10\text{ V}$ | MMBT2907 | h_{FE} | 30 | - | - |
| | MMBT2907A | h_{FE} | 50 | - | - |
| Collector Base Cutoff Current at $-V_{CB} = 50\text{ V}$ | MMBT2907 | $-I_{CBO}$ | - | 20 | nA |
| | MMBT2907A | $-I_{CBO}$ | - | 10 | nA |
| Collector Base Breakdown Voltage at $-I_C = 10\text{ }\mu\text{A}$ | | $-V_{(BR)CBO}$ | 60 | - | V |
| Collector Emitter Breakdown Voltage at $-I_C = 10\text{ mA}$ | MMBT2907 | $-V_{(BR)CEO}$ | 40 | - | V |
| | MMBT2907A | $-V_{(BR)CEO}$ | 60 | - | V |
| Emitter Base Breakdown Voltage at $-I_E = 10\text{ }\mu\text{A}$ | | $-V_{(BR)EBO}$ | 5 | - | V |
| Collector Saturation Voltage at $-I_C = 150\text{ mA}$, $-I_B = 15\text{ mA}$ | | $-V_{CE(sat)}$ | - | 0.4 | V |
| | | $-V_{CE(sat)}$ | - | 1.6 | V |
| Base Saturation Voltage at $-I_C = 150\text{ mA}$, $-I_B = 15\text{ mA}$ | | $-V_{BE(sat)}$ | - | 1.3 | V |
| | | $-V_{BE(sat)}$ | - | 2.6 | V |
| Gain Bandwidth Product at $-I_C = 50\text{ mA}$, $-V_{CE} = 20\text{ V}$, $f = 100\text{ MHz}$ | | f_T | 200 | - | MHz |
| Collector Output Capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$ | | C_{ob} | - | 8 | pF |
| Turn-on Time at $-V_{CC} = 30\text{ V}$, $-I_C = 150\text{ mA}$, $-I_{B1} = 15\text{ mA}$ | | t_{on} | - | 45 | ns |
| Delay Time at $-V_{CC} = 30\text{ V}$, $-I_C = 150\text{ mA}$, $-I_{B1} = 15\text{ mA}$ | | t_d | - | 10 | ns |
| Rise Time at $-V_{CC} = 30\text{ V}$, $-I_C = 150\text{ mA}$, $-I_{B1} = 15\text{ mA}$ | | t_r | - | 40 | ns |
| Turn-off Time at $-V_{CC} = 6\text{ V}$, $-I_C = 150\text{ mA}$, $-I_{B1} = -I_{B2} = 15\text{ mA}$ | | t_{off} | - | 100 | ns |
| Storage Time at $-V_{CC} = 6\text{ V}$, $-I_C = 150\text{ mA}$, $-I_{B1} = -I_{B2} = 15\text{ mA}$ | | t_s | - | 80 | ns |
| Fall Time at $-V_{CC} = 6\text{ V}$, $-I_C = 150\text{ mA}$, $-I_{B1} = -I_{B2} = 15\text{ mA}$ | | t_f | - | 30 | ns |

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