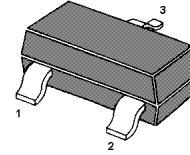


MMBT2907 / MMBT2907A

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

TOP DYNAMIC



ISO14001 : 2004 Certificate No. 121505007
ISO 9001 : 2008 Certificate No. 5014012
OHSAS 18001 : 2007 Certificate No. 06131508008
IECQ QC 080000 Certificate No. E24180007 KM2

Dated : 25/05/2012 Rev:01

MMBT2907 / MMBT2907A

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

| Parameter | | Symbol | Min. | Max. | Unit |
|---|-----------|----------------|------|------|------|
| DC Current Gain at $-I_C = 0.1\text{ mA}$, $-V_{CE} = 10\text{ V}$ at $-I_C = 1\text{ mA}$, $-V_{CE} = 10\text{ V}$ at $-I_C = 10\text{ mA}$, $-V_{CE} = 10\text{ V}$ at $-I_C = 150\text{ mA}$, $-V_{CE} = 10\text{ V}$ at $-I_C = 500\text{ mA}$, $-V_{CE} = 10\text{ V}$ | MMBT2907 | h_{FE} | 35 | - | - |
| | MMBT2907A | h_{FE} | 75 | - | - |
| | MMBT2907 | h_{FE} | 50 | - | - |
| | MMBT2907A | h_{FE} | 100 | - | - |
| | MMBT2907 | h_{FE} | 75 | - | - |
| | MMBT2907A | h_{FE} | 100 | - | - |
| 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 $-I_C = 150\text{ mA}$, $-I_B = 15\text{ mA}$ at $-I_C = 500\text{ mA}$, $-I_B = 50\text{ mA}$ | | $-V_{CE(sat)}$ | - | 0.4 | V |
| | | $-V_{CE(sat)}$ | - | 1.6 | V |
| Base Saturation Voltage at $-I_C = 150\text{ mA}$, $-I_B = 15\text{ mA}$ at $-I_C = 500\text{ mA}$, $-I_B = 50\text{ mA}$ | | $-V_{BE(sat)}$ | - | 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 |

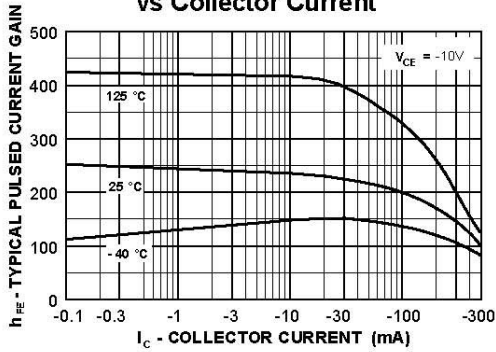
TOP DYNAMIC



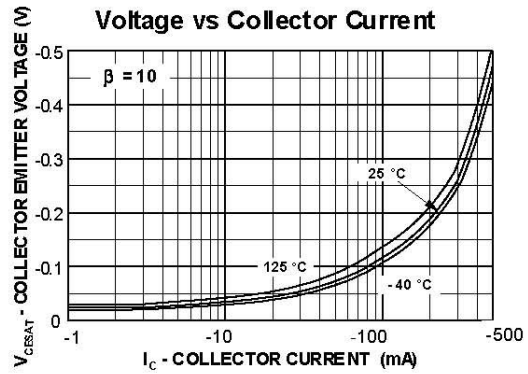
Dated : 25/05/2012 Rev:01

MMBT2907 / MMBT2907A

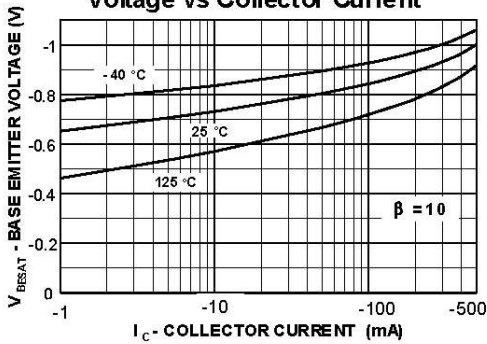
Typical Pulsed Current Gain vs Collector Current



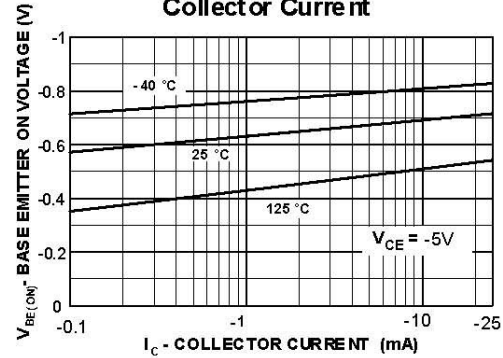
Collector-Emitter Saturation Voltage vs Collector Current



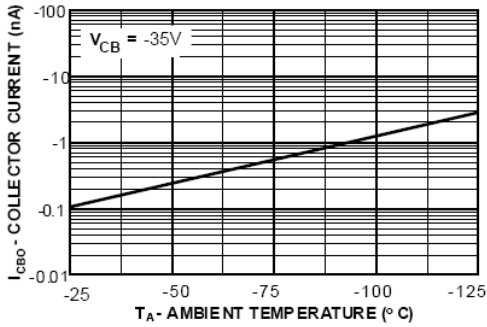
Base-Emitter Saturation Voltage vs Collector Current



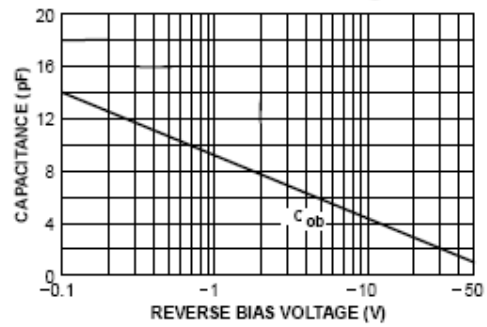
Base Emitter ON Voltage vs Collector Current



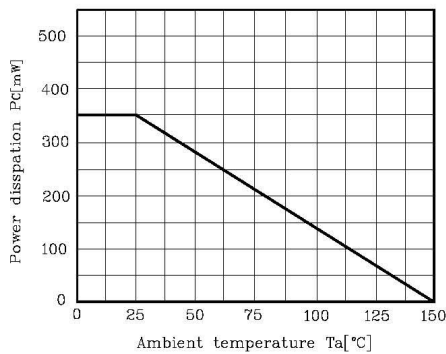
Collector-Cutoff Current vs Ambient Temperature



Input and Output Capacitance vs Reverse Bias Voltage



Pc-Ta



TOP DYNAMIC



ISO14001 : 2004 Certificate No. 121505007
 ISO 9001 : 2008 Certificate No. 50114012
 OHSAS 18001 : 2007 Certificate No. 06131508009
 IECQ QC 080000 Certificate No. E24180007 KMZ

Dated : 25/05/2012 Rev:01