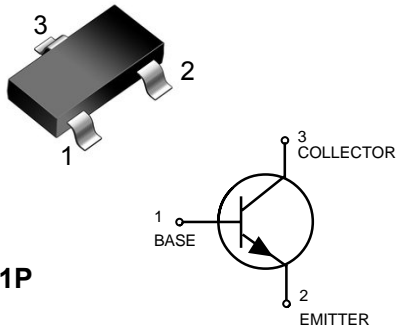


SOT-23



MARKING: 1P

Features

As complementary type the PNP transistor PMBT2907A is recommended
Epitaxial planar die construction
Halogen free and RoHS compliant

Mechanical Data

SOT-23 Small Outline Plastic Package
Epoxy UL: 94V-0

Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SOT-23 | Tape/Reel, 7" reel | 3000 | EIA-481-1 |

Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

| Symbol | Parameter | Value | Units |
|------------------|--|-------------|-------|
| V _{CBO} | Collector-Base Voltage | 75 | V |
| V _{CEO} | Collector-Emitter Voltage | 40 | V |
| V _{EBO} | Emitter-Base Voltage | 6 | V |
| I _C | Collector Current -Continuous | 600 | mA |
| P _C | Total Device Dissipation | 200 | mW |
| R _{θJA} | Thermal Resistance Junction to Ambient | 625 | °C/W |
| T _J | Junction Temperature | 150 | °C |
| T _{stg} | Storage Temperature | -55 to +150 | °C |

Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

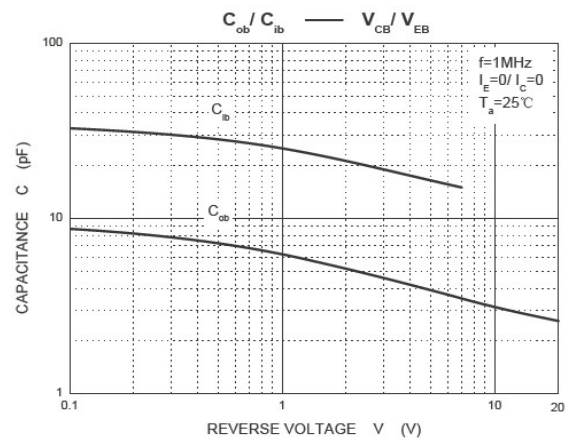
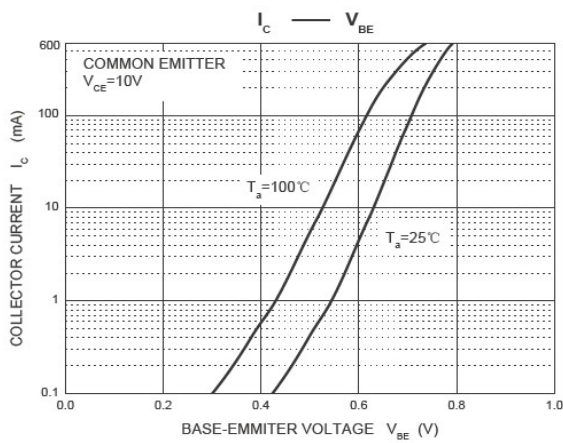
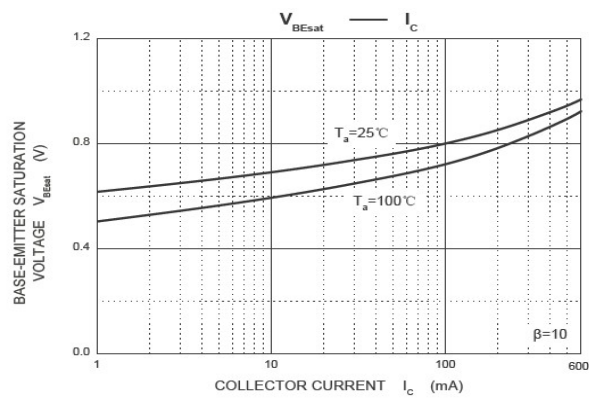
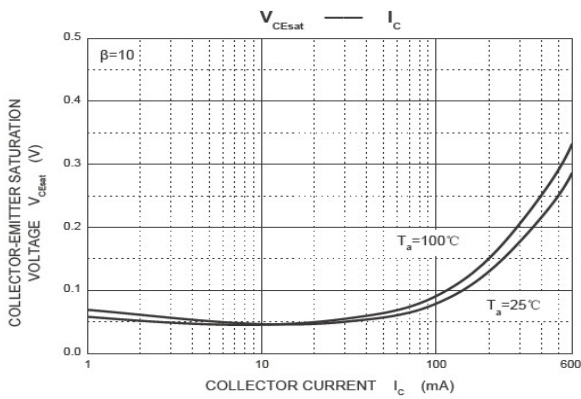
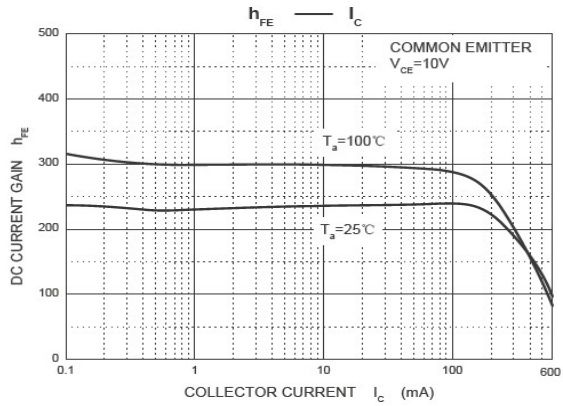
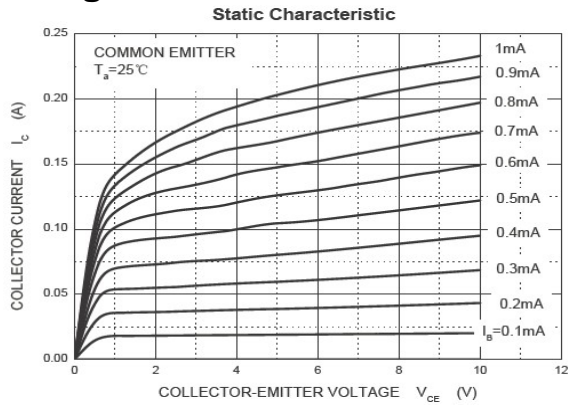
| Parameter | Symbols | Test Condition | Limits | | Unit |
|--------------------------------------|-------------------------|---|--------|------|------|
| | | | Min | Max | |
| Collector-base breakdown voltage | V(BR)CBO | I _C =10uA, I _E =0 | 75 | | V |
| Collector-emitter breakdown voltage | V(BR)CEO | I _C =1mA, I _B =0 | 30 | | V |
| Emitter-base breakdown voltage | V(BR)EBO | I _E =10uA, I _C =0 | 6 | | V |
| Collector cut-off current | I _{CEX} | V _{CE} =30V, V _{EB(off)} =3V | | 10 | nA |
| Collector cut-off current | I _{CBO} | V _{CB} =60V, I _E =0 | | 10 | nA |
| Emitter cut-off current | I _{EBO} | V _{EB} =3V, I _C =0 | | 100 | nA |
| DC current gain | hFE(1)* | V _{CE} =10V, I _C =150mA | 100 | 300 | |
| | hFE(2)* | V _{CE} =10V, I _C =0.1mA | 40 | | |
| | hFE(3)* | V _{CE} =10V, I _C =500mA | 42 | | |
| Collector-emitter saturation voltage | V _{CE(sat)1} * | I _C =500mA, I _B =50mA | | 1.00 | V |
| Collector-emitter saturation voltage | V _{CE(sat)2} * | I _C =150mA, I _B =15mA | | 0.30 | V |
| Base -emitter saturation voltage | V _{BE(sat)1} * | I _C =500mA, I _B =50mA | | 2.00 | V |
| Base -emitter saturation voltage | V _{BE(sat)2} * | I _C =150mA, I _B =15mA | | 1.20 | V |
| Transition frequency | f _T | V _{CE} =20V, I _C =20mA, f=100MHz | 300 | | MHz |
| Delay time | t _d | V _{CC} =30V, V _{BE(off)} =-0.5V, I _C =150mA, I _{B1} =15mA | | 10 | nS |
| Rise time | t _r | | | 25 | nS |
| Storage time | t _s | | | 225 | nS |
| Fall time | t _f | V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA | | 60 | nS |

*Pulse test: pulse width ≤ 300us, duty cycle ≤ 2.0%.

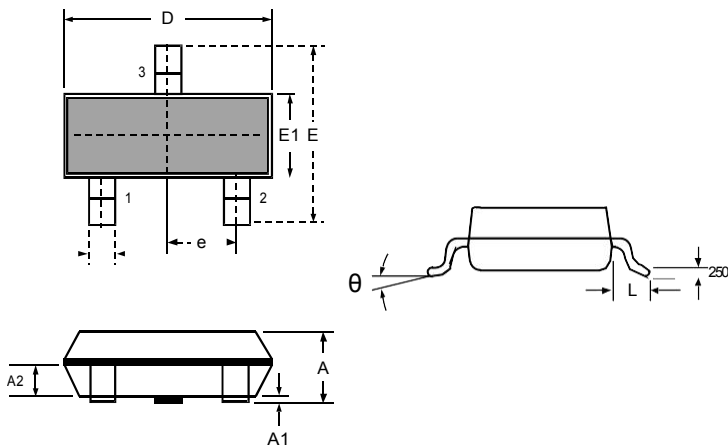
CLASSIFICATION OF $h_{FE}(1)$

| | | |
|-------|---------|---------|
| HFE | 100-300 | |
| RANK | L | H |
| RANGE | 100-200 | 200-300 |

Ratings and Characteristic Curves



Package Outline Dimensions: SOT-23



DIMENSIONS

| SYMBOL | MILLIMETER | | INCHES | |
|----------|------------|-----------|-----------|-----------|
| | MIN | MAX | MIN | MAX |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| E | 2.250 | 2.550 | 0.089 | 0.100 |
| E1 | 1.200 | 1.400 | 0.047 | 0.055 |
| e | 0.950 BSC | | 0.037 BSC | |
| L | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0 | 8° | 0 | 8° |