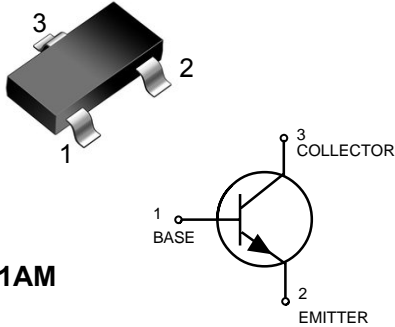


SOT-23

MARKING: 1AM
Features

As complementary type the PNP transistor PMBT3906 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 | 60 | V |
| V_{CEO} | Collector-Emitter Voltage | 40 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current -Continuous | 200 | mA |
| P_C | Total Device Dissipation | 200 | mW |
| $R_{\theta JA}$ | Thermal Resistance Junction to Ambient | 625 | °C/W |
| T_J | Junction Temperature | 150 | °C |
| T_{stg} | Storage Temperature | -55 to +150 | °C |

Electrical Characteristics

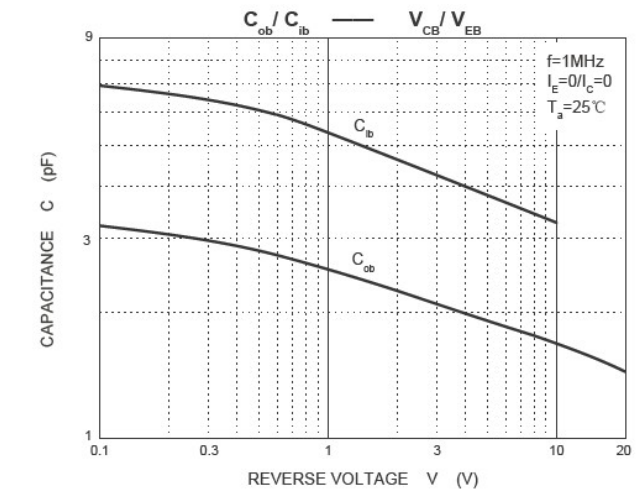
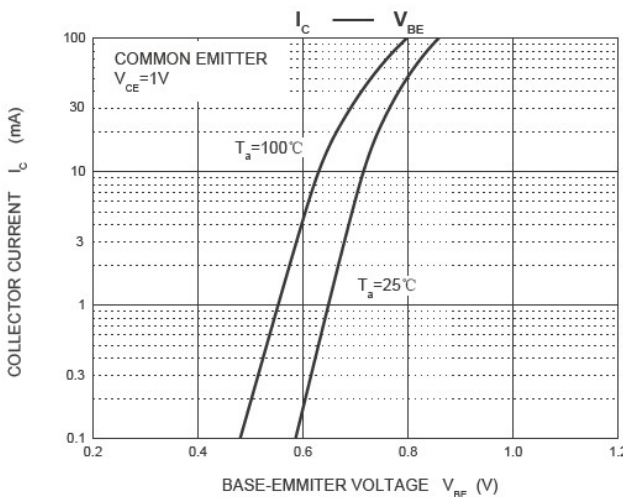
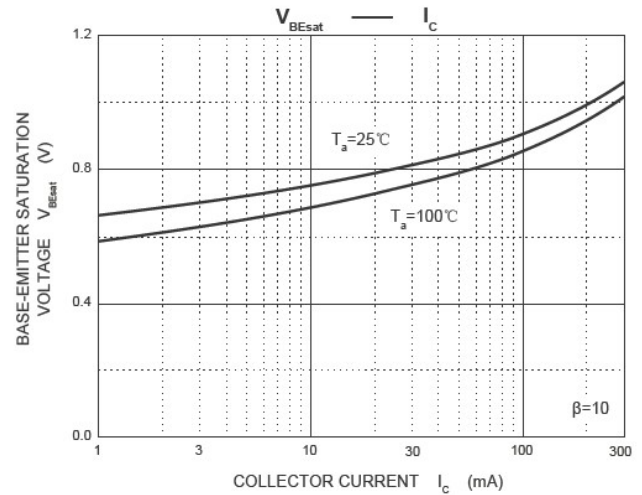
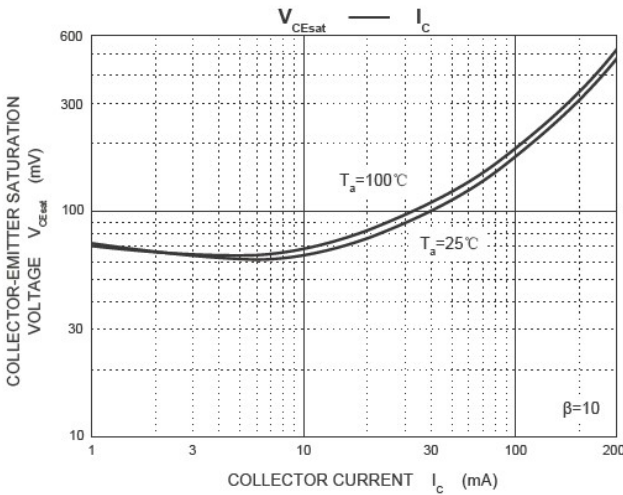
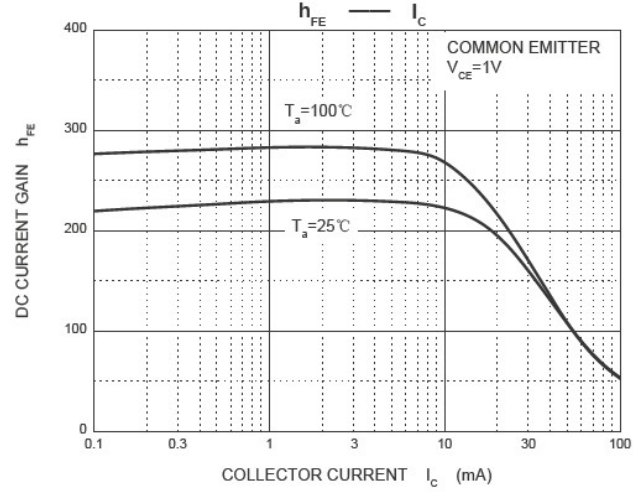
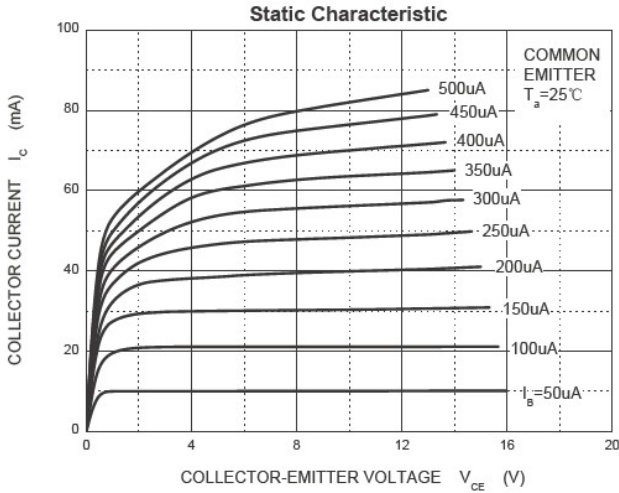
(Ratings at 25°C ambient temperature unless otherwise specified).

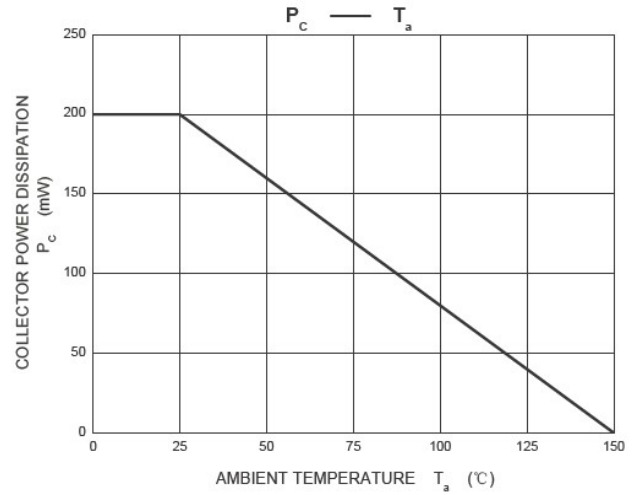
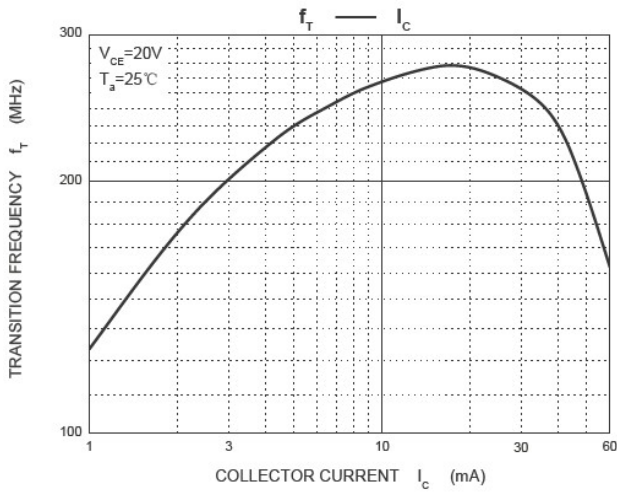
| Parameter | Symbol | Test conditions | MIN | MAX | UNIT |
|--------------------------------------|---------------|----------------------------------|-----|------|---------|
| Collector-base breakdown voltage | V_{CBO} | $I_C=10\mu A, I_E=0$ | 60 | | V |
| Collector-emitter breakdown voltage | V_{CEO} | $I_C=1mA, I_B=0$ | 40 | | V |
| Emitter-base breakdown voltage | V_{EBO} | $I_E=10\mu A, I_C=0$ | 6 | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=60V, I_E=0$ | | 0.1 | μA |
| Collector cut-off current | I_{CEX} | $V_{CE}=30V, V_{BE(off)}=3V$ | | 50 | nA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5V, I_C=0$ | | 0.1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=1V, I_C=10mA$ | 100 | 400 | |
| | $h_{FE(2)}$ | $V_{CE}=1V, I_C=50mA$ | 60 | | |
| | $h_{FE(3)}$ | $V_{CE}=1V, I_C=100mA$ | 30 | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=50mA, I_B=5mA$ | | 0.3 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=50mA, I_B=5mA$ | | 0.95 | V |
| Transition frequency | f_T | $V_{CE}=20V, I_C=10mA, f=100MHz$ | 300 | | MHz |
| Delay Time | td | $V_{CC}=3V, V_{BE}=-0.5V$ | | 35 | nS |
| Rise Time | tr | $I_C=10mA, I_{B1}=-I_{B2}=1.0mA$ | | 35 | nS |
| Storage Time | ts | $V_{CC}=3V, I_C=10mA,$ | | 200 | nS |
| Fall Time | tf | $I_{B1}=-I_{B2}=1mA$ | | 50 | nS |

CLASSIFICATION OF $h_{FE(1)}$

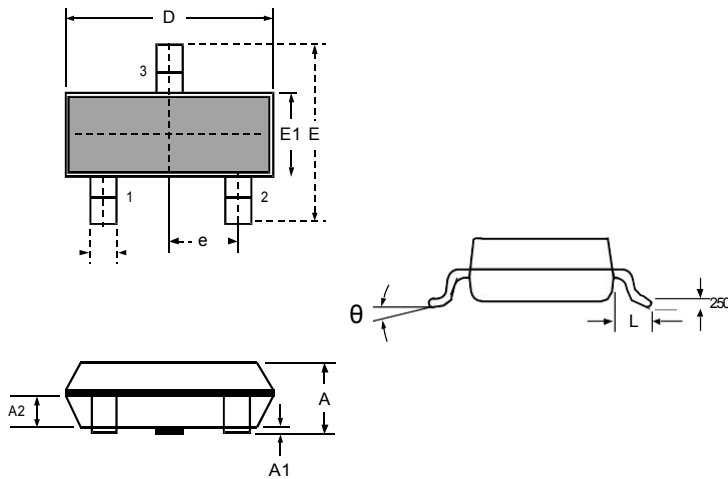
| | | |
|-------|---------|---------|
| HFE | 100-300 | |
| RANK | L | H |
| RANGE | 100-200 | 200-300 |

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° |