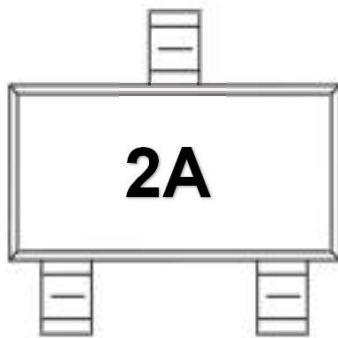


SOT-23 Plastic-Encapsulate MOSFETS

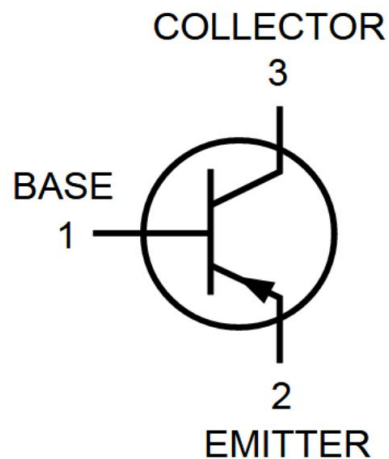
MMBT3906

TRANSISTOR (PNP)

MARKING:



Equivalent Circuit:



SOT-23



- 1.BASE
- 2.EMITTER
- 3.COLLECTOR

FEATURES:

- ※ Complimentary to MMBT3904
- ※ Collector Current: $I_c=200\text{mA}$

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---------------|----------|---------------------------|
| Collector-Base Voltage | VCBO | -40 | V |
| Collector-Emitter Voltage | VCEO | -40 | V |
| Emitter-Base Voltage | VEBO | -5 | V |
| Collector Current | IC | -200 | mA |
| Collector Power Dissipation | PC | 200 | mW |
| Thermal Resistance From Junction To Ambient | R θ JA | 325 | $^\circ\text{C}/\text{W}$ |
| Junction Temperature | Tj | 150 | $^\circ\text{C}$ |
| Storage Temperature | Tstg | -55~+150 | $^\circ\text{C}$ |

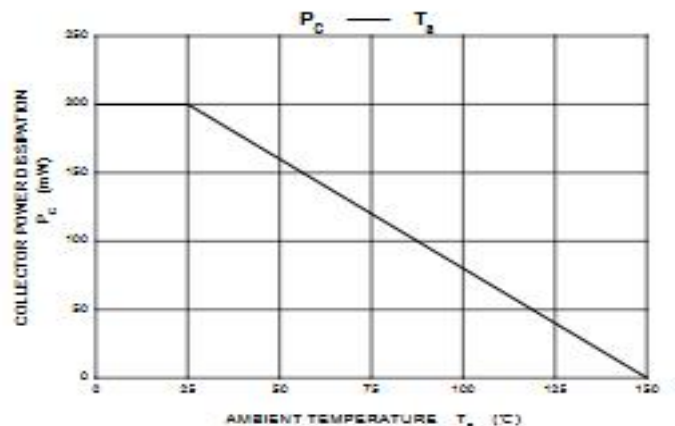
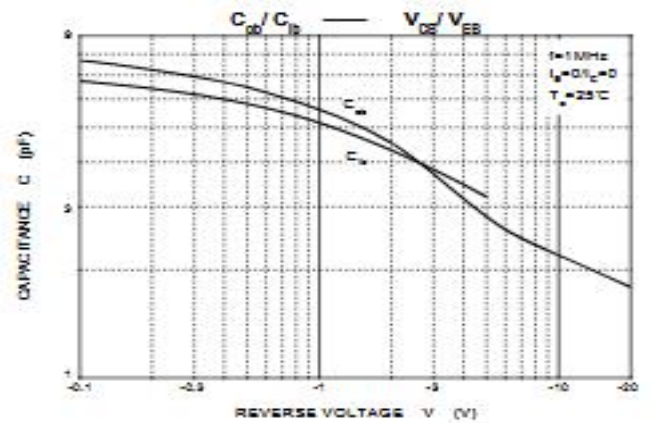
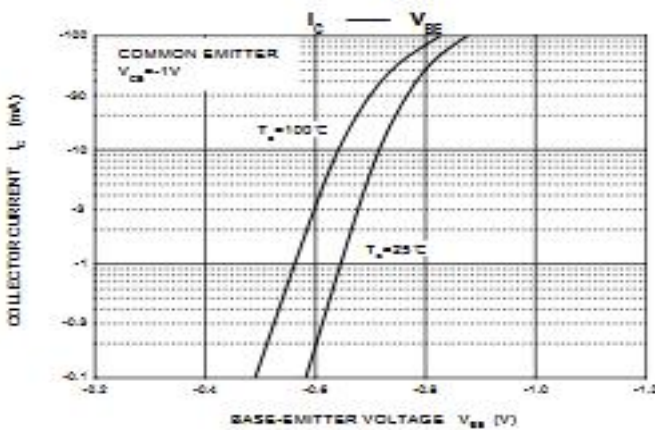
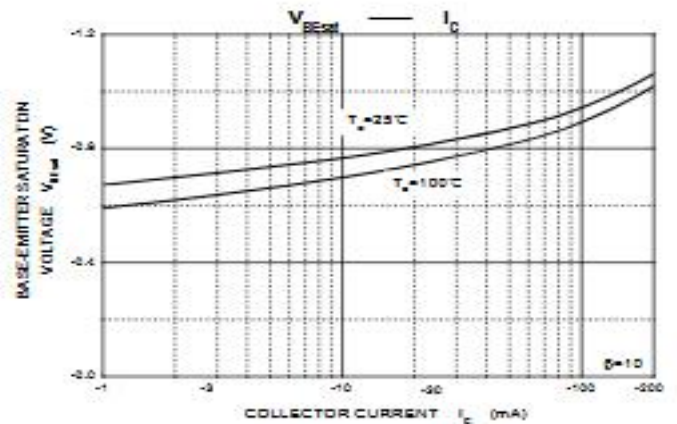
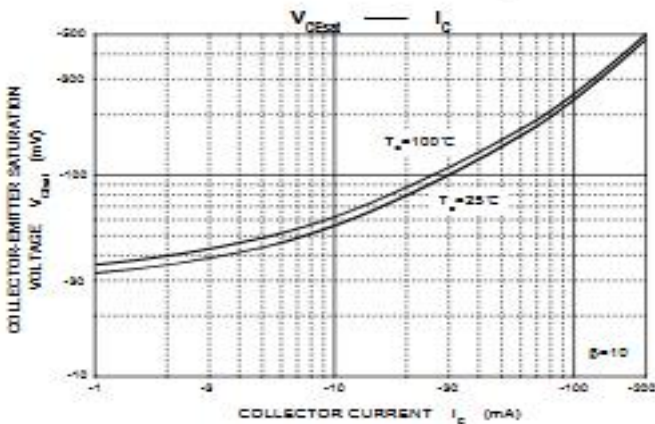
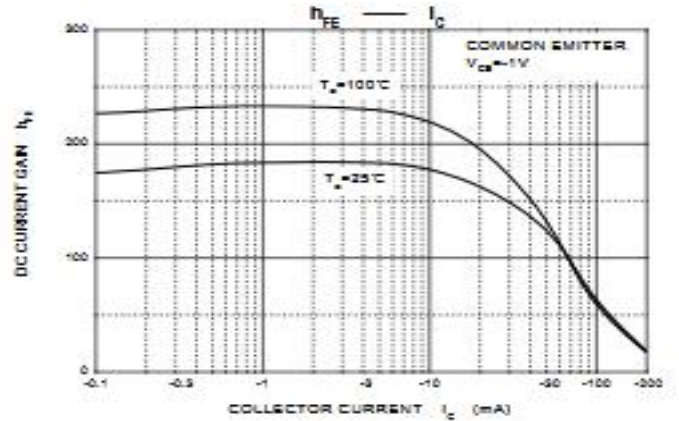
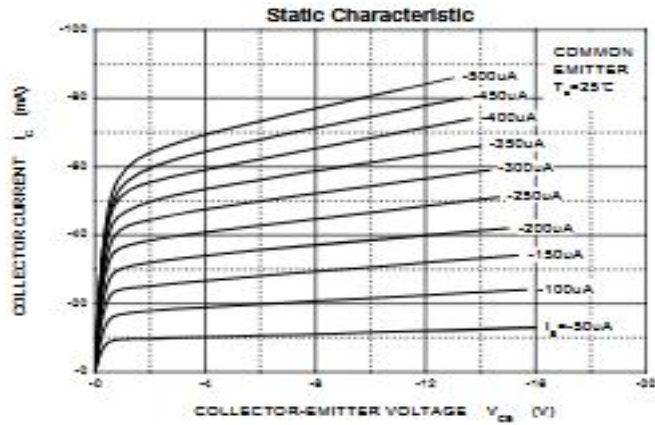
ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|--------------------------------------|----------|---------------------------------------|-----|-----|------|------|
| Collector-base breakdown voltage | V(BR)CBO | IC= -10μA, IE=0 | -40 | | | V |
| Collector-emitter breakdown voltage | V(BR)CEO | IC= -1mA, IB=0 | -40 | | | V |
| Emitter-base breakdown voltage | V(BR)EBO | IE= -10μA, IC=0 | -5 | | | V |
| Collector cut-off current | ICBO | VCB= -40 V , IE=0 | | | -0.1 | μA |
| Collector cut-off current | ICEO | VCE=-30V, VBE(off)=-3V | | | -50 | nA |
| Emitter cut-off current | IEBO | VEB= -6V , IC=0 | | | -0.1 | μA |
| DC current gain | hFE | VCE= -1V, IC= -10mA | 100 | | 300 | |
| | hFE | VCE= -1V, IC= -50mA | 60 | | | |
| | hFE | VCE= -1V, IC= -100mA | 30 | | | |
| Collector-emitter saturation voltage | VCE(sat) | IC= -50 mA, IB= -5mA | | | -0.3 | V |
| Base-emitter saturation voltage | VBE(sat) | IC= -50 mA, IB= -5mA | | | -1 | V |
| Transition frequency | fT | VCE=6V, IC= 20mA f=30MHz | 300 | | | MHz |
| Delay time | td | VCC=3V, VBE=0.5V, IC=10mA, IB=1mA, | | | 35 | ns |
| Rise time | tr | VCC=3V, VBE=0.5V, IC=10mA, IB=1mA, | | | 35 | ns |
| Storage time | ts | VCC=3V, VBE=0.5V, IC=10mA, IB=1mA, | | | 225 | ns |
| Fall time | tf | VCC=3V, VBE=0.5V, IC=10mA, IB=1mA, | | | 75 | ns |

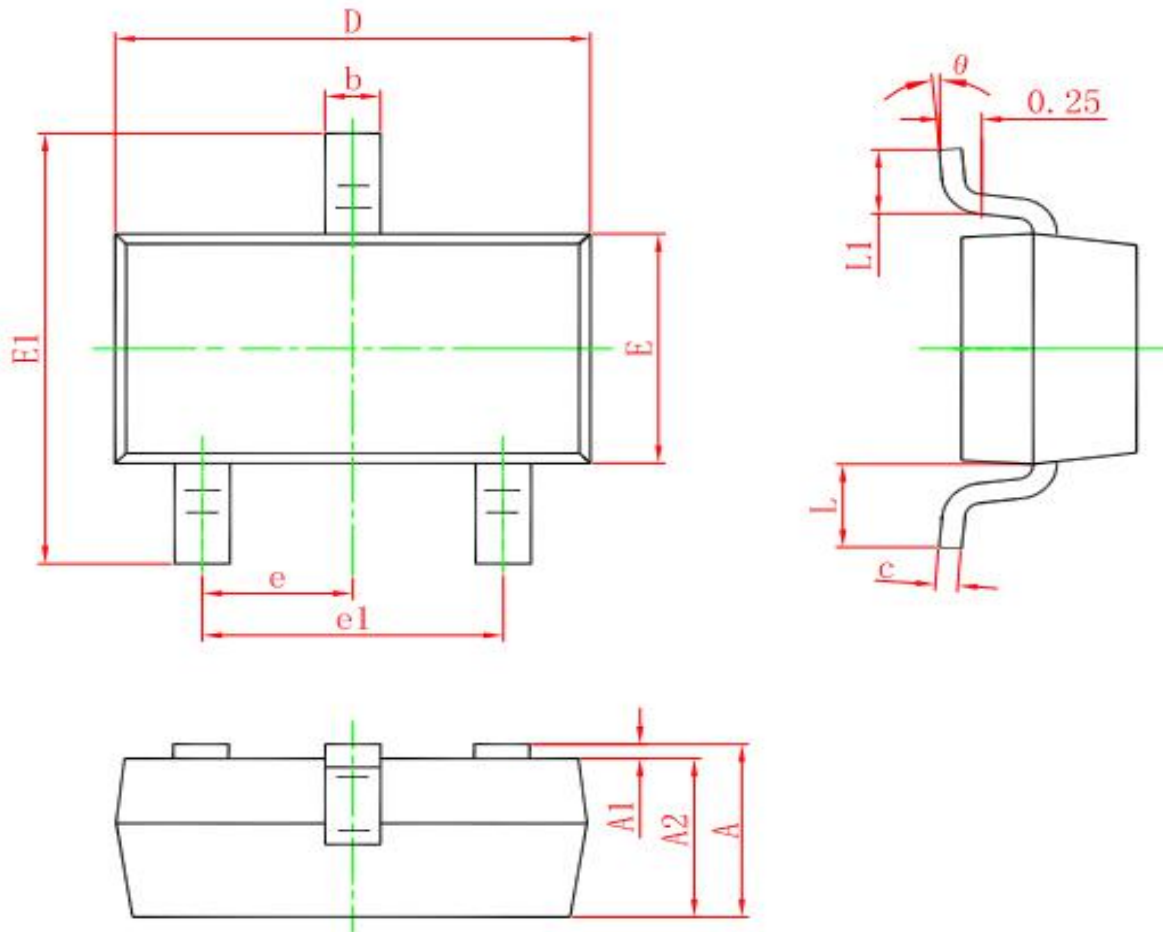
CLASSIFICATION OF hFE

| | | |
|--------------|----------------|----------------|
| HFE | 100-300 | |
| Rank | L | H |
| Range | 100-200 | 200-300 |

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS



SOT-23 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | | Dimensions In 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 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP. | | 0.037 TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF. | | 0.022 REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |