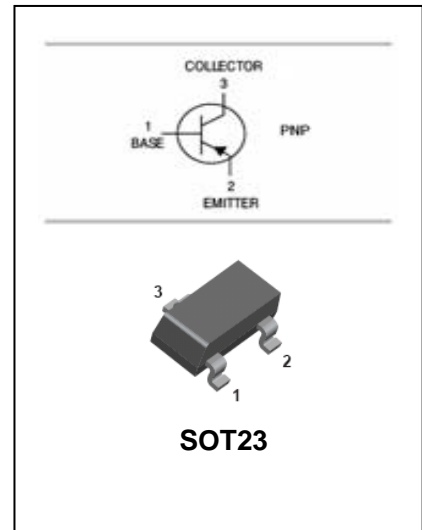


PNP General Purpose Transistor

FEATURES

- Epitaxial planar die construction.
- Complementary NPN type available (MMBT3904).
- Collector Current Capability $I_{CM} = -200\text{mA}$.
- Low Voltage(Max:-40V).



APPLICATIONS

- Ideal for medium power amplification and switching.

ORDERING INFORMATION

| Type No. | Marking | Package Code |
|-----------|---------|--------------|
| MMBT3906X | 2A | SOT23 |

MAXIMUM RATING @ $T_a=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | Value | UNIT |
|-----------|---------------------------|---------------------------------|-------------|------------------|
| V_{CBO} | collector-base voltage | open emitter | -40 | V |
| V_{CEO} | collector-emitter voltage | open base | -40 | V |
| V_{EBO} | emitter-base voltage | open collector | -5 | V |
| I_C | collector current (DC) | | -200 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25^\circ\text{C}$ | 200 | mW |
| T_{stg} | storage temperature | | -55 to +150 | $^\circ\text{C}$ |
| T_j | junction temperature | | 150 | $^\circ\text{C}$ |

Note Transistor mounted on an FR4 printed-circuit board.

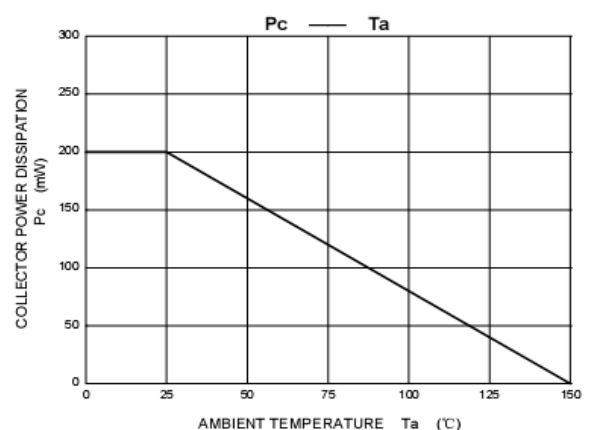
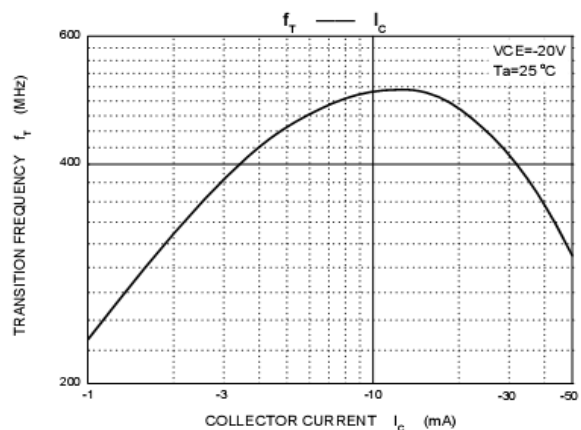
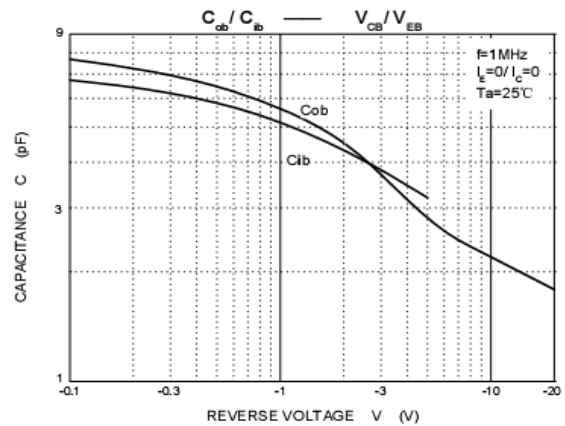
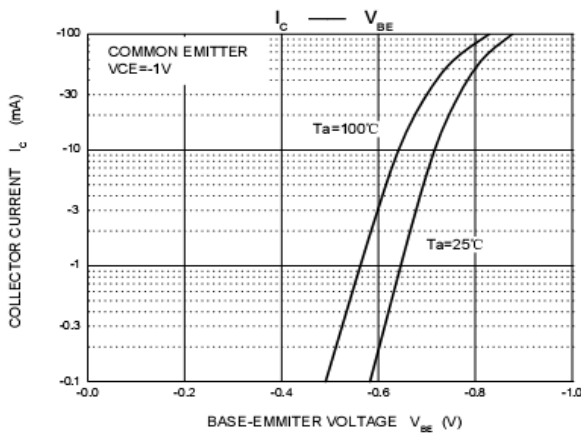
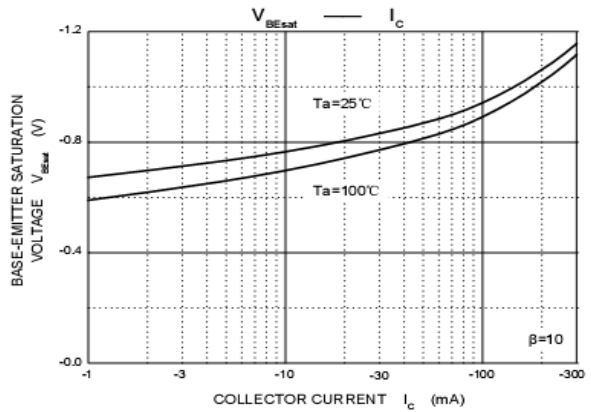
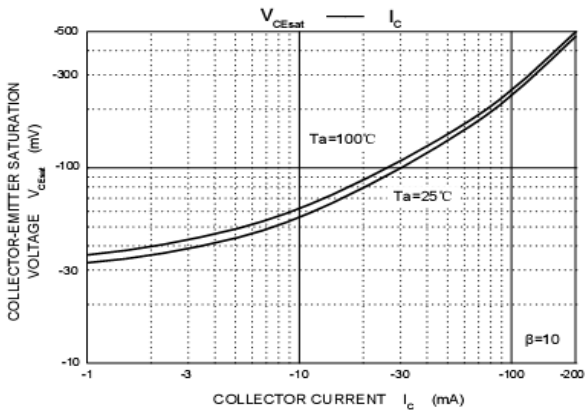
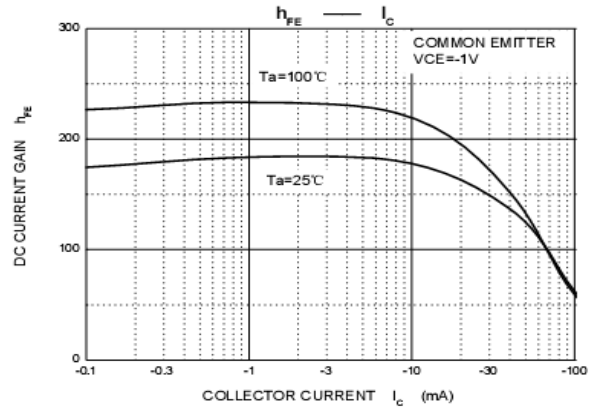
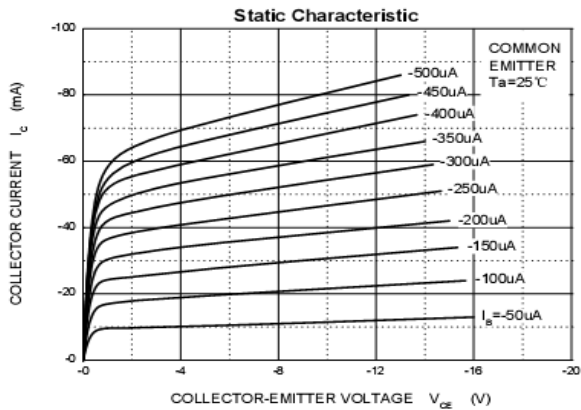
PNP General Purpose Transistor
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|---|--------------------------------------|---|-----------------|---------------|------|
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = -40\text{ V}$ | - | -0.1 | uA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = -5\text{ V}$ | - | -0.1 | uA |
| h_{FE} | DC current gain | $V_{CE} = -1\text{V};$ $I_C = -10\text{mA}$ $I_C = -50\text{mA}$ $I_C = -100\text{mA}$ | 100 60 30 | - 300 - | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = -10\text{mA}; I_B = -1\text{mA}$ | - | -200 | mV |
| | | $I_C = -50\text{mA}; I_B = -5\text{mA}$ | - | -400 | mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = -10\text{mA}; I_B = -1\text{mA}$ | - | -850 | mV |
| | | $I_C = -50\text{mA}; I_B = -5\text{mA}$ | - | -950 | mV |
| f_T | transition frequency | $I_C = -10\text{mA}; V_{CE} = -20\text{ V};$ $f = 100\text{MHz}$ | 300 | - | MHz |
| Switching times (between 10% and 90% levels); | | | | | |
| t_d | delay time | $V_{CC} = -3\text{V}; I_C = -10\text{mA};$ $I_{B1} = I_{B2} = -1\text{mA}$ | - | 35 | ns |
| t_r | rise time | | - | 35 | ns |
| t_s | storage time | | - | 225 | ns |
| t_f | fall time | | - | 75 | ns |

Note Pulse test: $t_p \leq 300\text{ ms}; d \leq 0.02.$

PNP General Purpose Transistor

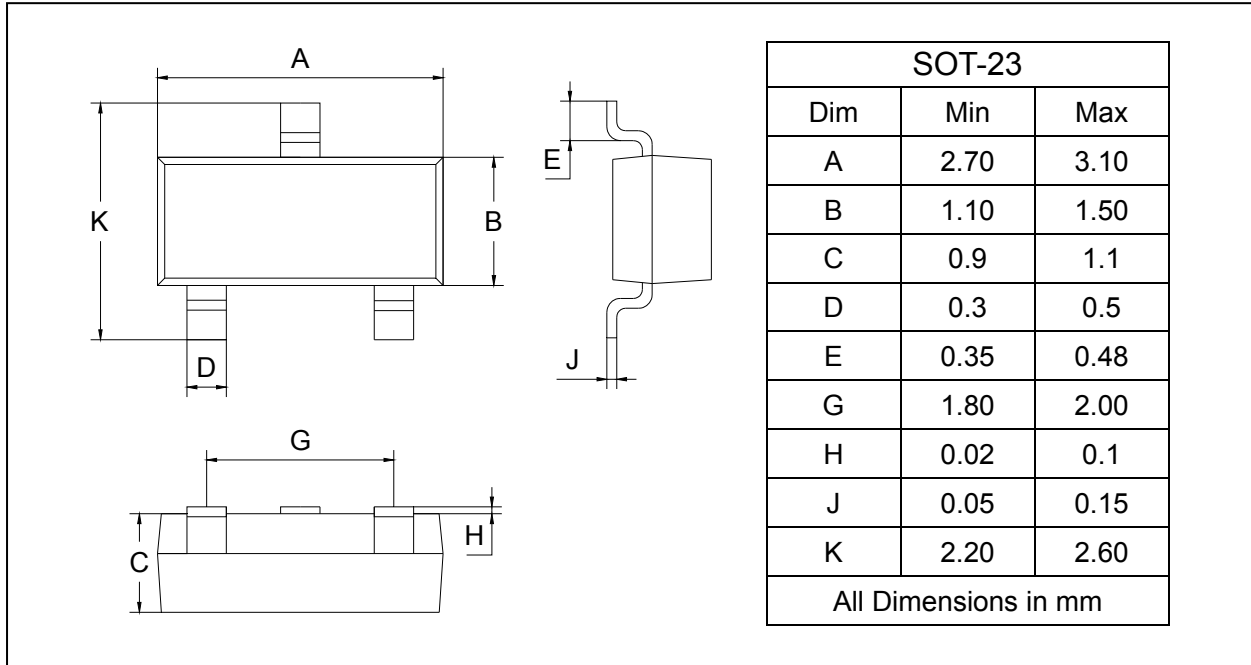
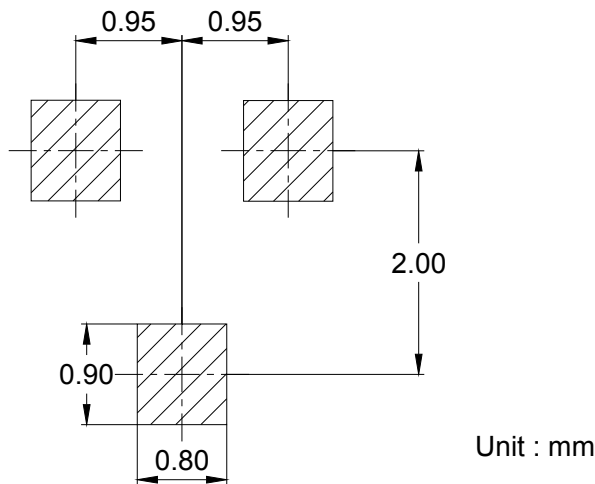
TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified



PNP General Purpose Transistor
PACKAGE OUTLINE

Plastic surface mounted package

SOT23


SOLDERING FOOTPRINT

PACKAGE INFORMATION

| Device | Package | Shipping |
|-----------|---------|----------------|
| MMBT3906X | SOT23 | 3000/Tape&Reel |

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