



NPN General Purpose Amplifier

MMBT2369A

FEATURES

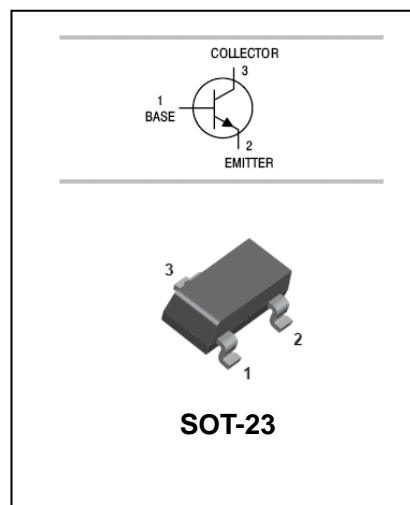
- Epitaxial planar die construction.
- Ultra-small surface mount package.



Lead-free

APPLICATIONS

- Use as a medium power amplifier.



ORDERING INFORMATION

| Type No. | Marking | Package Code |
|-----------|---------|--------------|
| MMBT2369A | 1JA | SOT-23 |

MAXIMUM RATING @ Ta=25°C unless otherwise specified

| Symbol | Parameter | Value | Unit |
|-----------------|---|-------------|------|
| V_{CBO} | Collector-Base Voltage | 40 | V |
| V_{CEO} | Collector-Emitter Voltage | 15 | V |
| V_{EBO} | Emitter-Base Voltage | 4.5 | V |
| I_C | Collector Current -Continuous | 200 | mA |
| P_C | Collector Dissipation | 300 | mW |
| $R_{\theta JA}$ | Thermal resistance, junction to ambient | 417 | °C/W |
| T_j, T_{stg} | Junction and Storage Temperature | -55 to +150 | °C |



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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|-----|-----|---------------------|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=10\mu A, I_E=0$ | 40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=10mA, I_B=0$ | 15 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0$ | 4.5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=20V, I_E=0$ | | | 0.4 | μA |
| Collector cut-off current | I_{CES} | $V_{CE}=20V, V_{BE}=0$ | | | 0.4 | μA |
| DC current gain | h_{FE} | $V_{CE}=1.0V, I_C=10mA$ | | | 120 | |
| | | $V_{CE}=0.35V, I_C=10mA$ | 40 | | | |
| | | $V_{CE}=0.4V, I_C=30mA$ | 30 | | | |
| | | $V_{CE}=1.0V, I_C=100mA$ | 20 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=10mA, I_B=1.0mA$ $I_C=30mA, I_B=3.0mA$ $I_C=100mA, I_B=10mA$ | | | 0.2 0.25 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=10mA, I_B=1.0mA$ $I_C=30mA, I_B=3.0mA$ $I_C=100mA, I_B=10mA$ | 0.7 | | 0.85 1.15 1.6 | V |
| Output capacitance | C_{obo} | $V_{CB}=5V, I_E=0, f=1.0MHz$ | | | 4.0 | pF |
| Storage time | t_s | $I_{B1}=I_{B2}=I_C=10mA$ | | 5.0 | 13 | ns |
| Turn-on time | t_{on} | $V_{CC}=3V, I_C=10mA,$ $I_{B1}=3mA$ | | 8.0 | 12 | ns |
| Turn-off time | t_{off} | $V_{CC}=3V, I_C=10mA,$ $I_{B1}=3mA, I_{B2}=1.5mA$ | | 10 | 18 | ns |

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

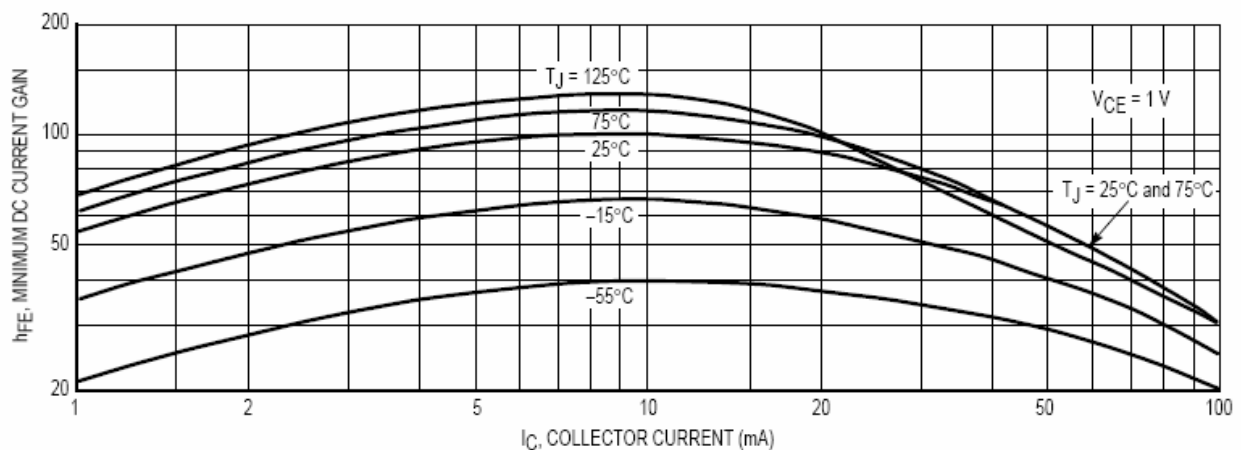


Figure 1 . Minimum Current Gain Characteristics



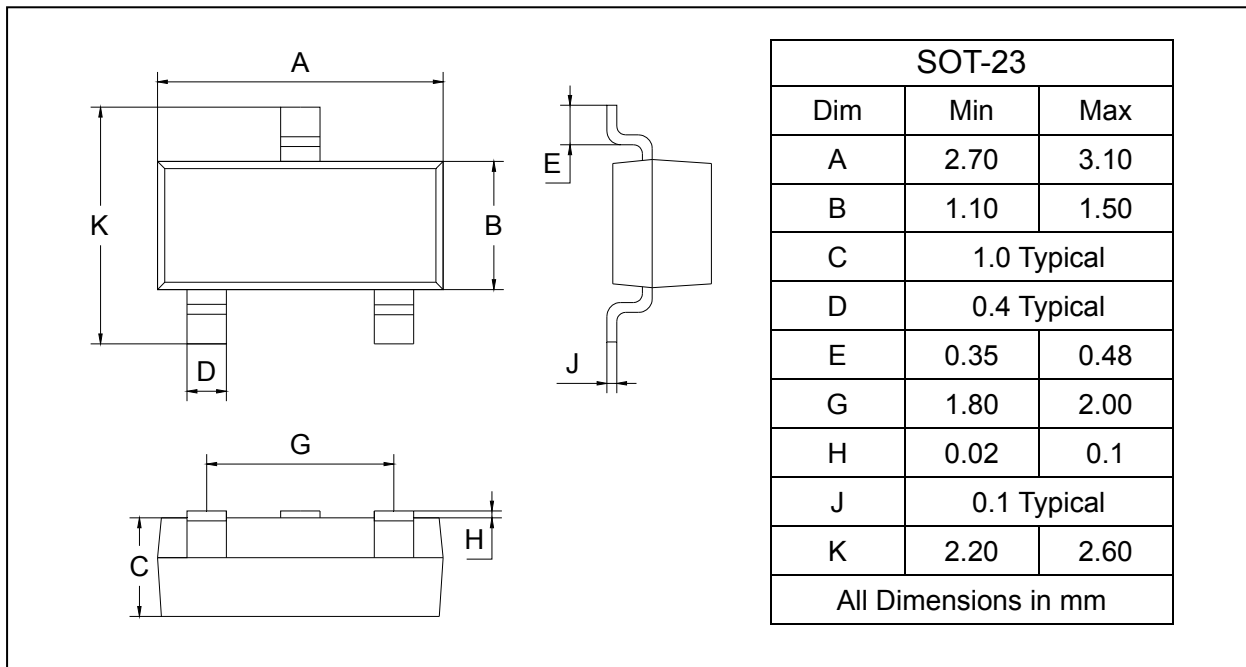
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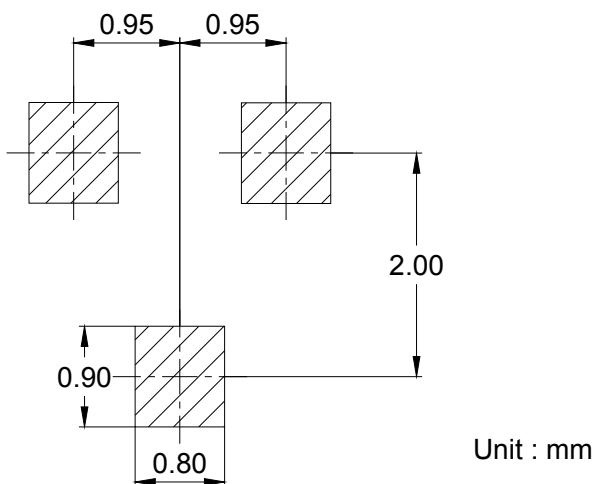
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

| Device | Package | Shipping |
|-----------|---------|----------------|
| MMBT2369A | SOT-23 | 3000/Tape&Reel |