



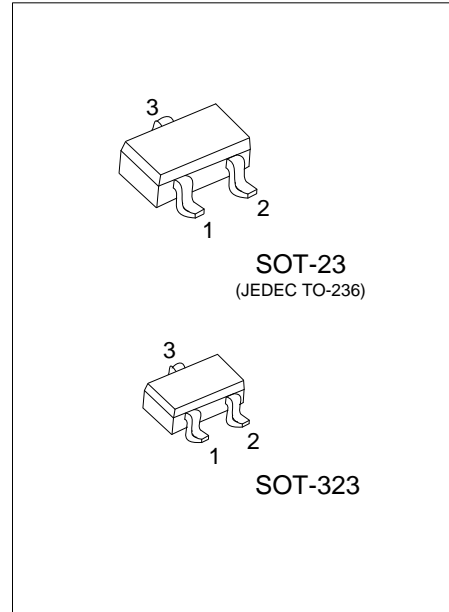
MMBT4403-Q

PNP SILICON TRANSISTOR

PNP GENERAL PURPOSE AMPLIFIER

DESCRIPTION

The UTC **MMBT4403-Q** is designed for use as a general purpose amplifier and switch requiring collector currents up to 500mA.



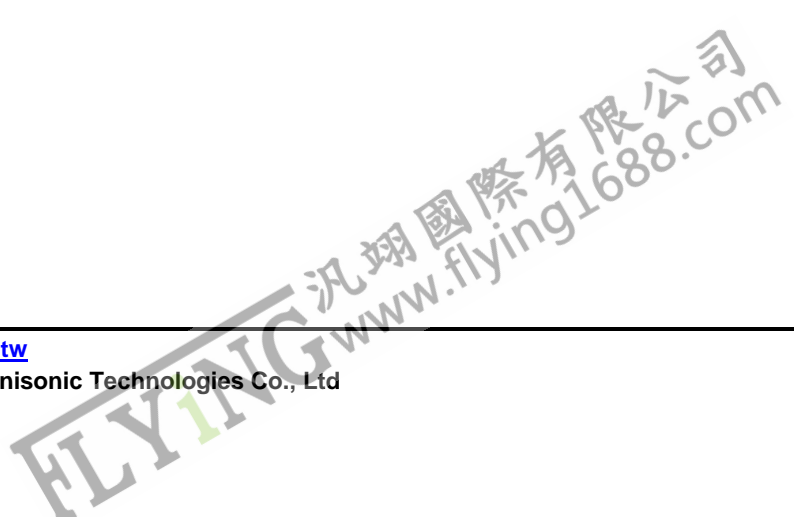
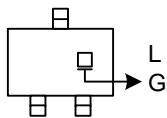
ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-------------------|-------------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| MMBT4403L-Q-AE3-R | MMBT4403G-Q-AE3-R | SOT-23 | B | E | C | Tape Reel |
| MMBT4403L-Q-AL3-R | MMBT4403G-Q-AL3-R | SOT-323 | B | E | C | Tape Reel |

Note: Pin Assignment: B: Base E: Emitter C: Collector

| | |
|---|---|
| <p>MMBT4403G-Q-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p> | <p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p> |
|---|---|

MARKING



MMBT4403-Q

PNP SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|------------------------------|------------------|------------|-------|
| Collector-Base Voltage | V _{CBO} | -40 | V |
| Collector-Emitter Voltage | V _{CEO} | -40 | V |
| Emitter-Base Voltage | V _{EBO} | -5 | V |
| Collector Current-Continuous | I _C | -600 | mA |
| Total Device Dissipation | P _C | 350 | mW |
| Derate above 25°C | | 2.8 | mW/°C |
| Junction Temperature | T _J | +150 | °C |
| Storage Temperature | T _{STG} | -55 ~ +150 | °C |

- Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

■ THERMAL DATA (T_A=25°C, unless otherwise specified)

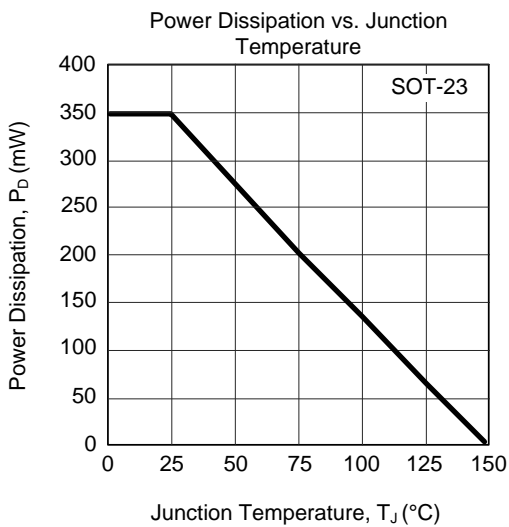
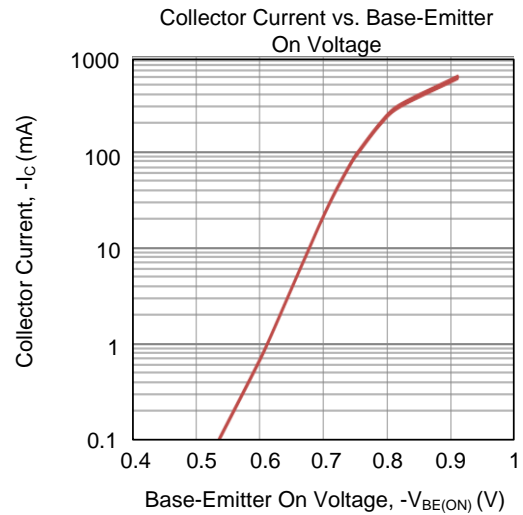
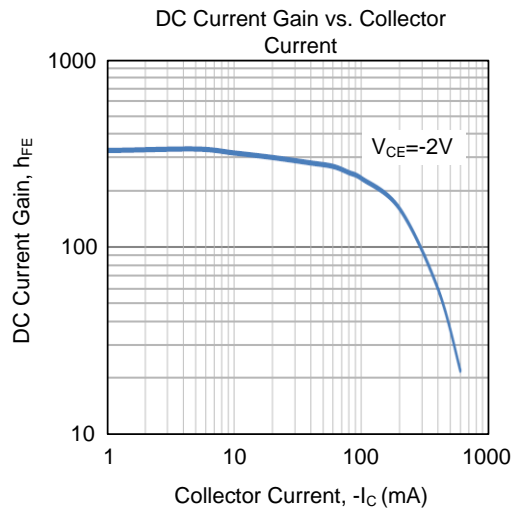
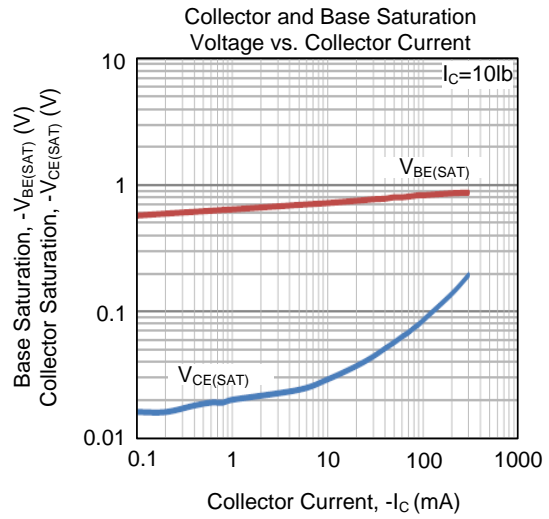
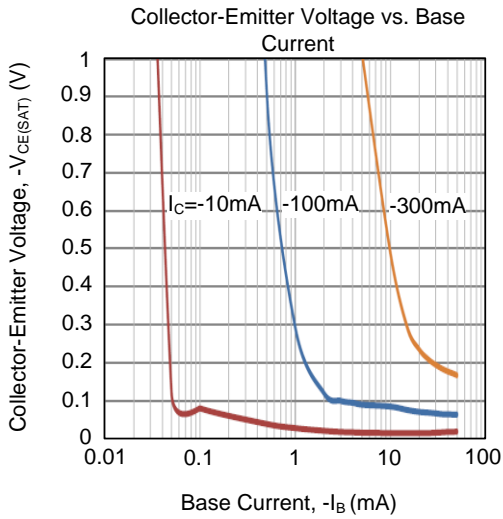
| CHARACTERISTIC | SYMBOL | RATINGS | UNIT |
|---------------------|-----------------|---------|-------|
| Junction to Ambient | θ _{JA} | 357 | °C /W |

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--|-----------------------|---|-------|-----|-------|------|
| OFF CHARACTERISTICS | | | | | | |
| Collector-Emitter Breakdown Voltage (Note) | BV _{CEO} | I _C =-1mA, I _B =0 | -40 | | | V |
| Collector-Base Breakdown Voltage | BV _{CBO} | I _C =-0.1mA, I _E =0 | -40 | | | V |
| Emitter-Base Breakdown Voltage | BV _{EBO} | I _E =-0.1mA, I _C =0 | -5 | | | V |
| Collector-Base Cutoff Current | I _{CBO} | V _{CE} =-40V, I _E =0 | | | -0.1 | μA |
| Collector-Emitter Cutoff Current | I _{CEO} | V _{CE} =-40V, I _B =0 | | | -0.1 | μA |
| Emitter-Base Cutoff Current | I _{EBO} | V _{EB} =-5V, I _C =0 | | | -0.1 | μA |
| ON CHARACTERISTICS* | | | | | | |
| DC Current Gain | h _{FE1} | V _{CE} =-1V, I _C =-0.1mA | 30 | | | |
| | h _{FE2} | V _{CE} =-1V, I _C =-1mA | 60 | | | |
| | h _{FE3} | V _{CE} =-1V, I _C =-10mA | 100 | | | |
| | h _{FE4} | V _{CE} =-2V, I _C =-150mA (Note) | 100 | | 300 | |
| | h _{FE5} | V _{CE} =-2V, I _C =-500mA (Note) | 20 | | | |
| Collector-Emitter Saturation Voltage | V _{CE(SAT1)} | I _C =-150mA, I _B =-15mA | | | -0.4 | V |
| | V _{CE(SAT2)} | I _C =-500mA, I _B =-50mA | | | -0.75 | |
| Base-Emitter Saturation Voltage | V _{BE(SAT1)} | I _C =-150mA, I _B =-15mA(Note) | -0.75 | | -0.95 | V |
| | V _{BE(SAT2)} | I _C =-500mA, I _B =-50mA | | | -1.3 | |

Note: Pulse test: Pulse Width≤300μs, Duty Cycles≤2%.

TYPICAL CHARACTERISTICS



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