



MMBTA13

Preliminary

NPN EPITAXIAL SILICON TRANSISTOR

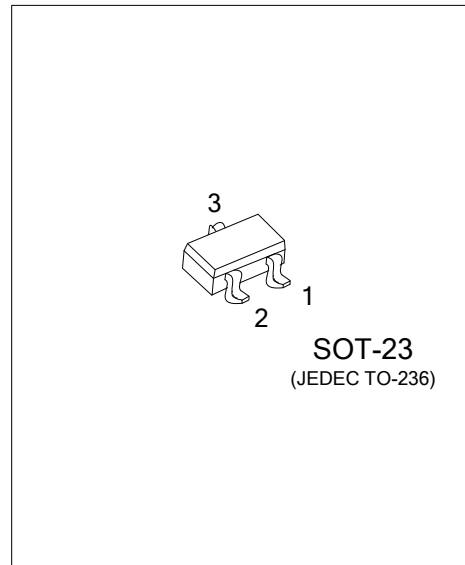
DARLINGTON TRANSISTOR

DESCRIPTION

The UTC **MMBTA13** is a Darlington transistor.

FEATURES

- * Collector-Emitter Voltage: $V_{CES} = 30V$
- * Collector Dissipation: $P_{C(MAS)} = 350 \text{ mW}$



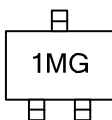
ORDERING INFORMATION

| Ordering Number | Package | Pin Assignment | | | Packing |
|-----------------|---------|----------------|---|---|-----------|
| | | 1 | 2 | 3 | |
| MMBTA13G-AE3-R | SOT-23 | E | B | C | Tape Reel |

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

| | | |
|-----------------------|--|---|
| <p>MMBTA13G-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</p> <p>(3) G: Halogen Free and Lead Free</p> |
|-----------------------|--|---|

MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------------|-----------|----------|------------------|
| Collector-Base Voltage | V_{CBO} | 30 | V |
| Collector-Emitter Voltage | V_{CES} | 30 | V |
| Emitter-Base Voltage | V_{EBO} | 10 | V |
| Collector Dissipation | V_{EBO} | 350 | mW |
| Collector Current | I_C | 500 | mA |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -55~+150 | $^\circ\text{C}$ |

Note: 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.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-------|-----|-----|------|
| Collector-Emitter Breakdown Voltage | BV_{CES} | $I_C=100\mu\text{A}$, $I_B=0$ | 30 | | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=30\text{V}$, $I_E=0$ | | | 100 | nA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=10\text{V}$, $I_C=0$ | | | 100 | nA |
| DC Current Gain | h_{FE} | $V_{CE}=5\text{V}$, $I_C=100\text{mA}$ | 10000 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C=100\text{mA}$, $I_B=0.1\text{mA}$ | | | 1.5 | V |
| Base-Emitter on Voltage | $V_{BE(ON)}$ | $V_{CE}=5\text{V}$, $I_C=100\text{mA}$ | | | 2.0 | V |
| Current Gain Bandwidth Product | f_T | $V_{CE}=5\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$ | 125 | | | MHz |

Note: Pulse test: Pulse Width<300 μs , Duty Cycle=2%

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