



TIP142

Advance

NPN SILICON TRANSISTOR

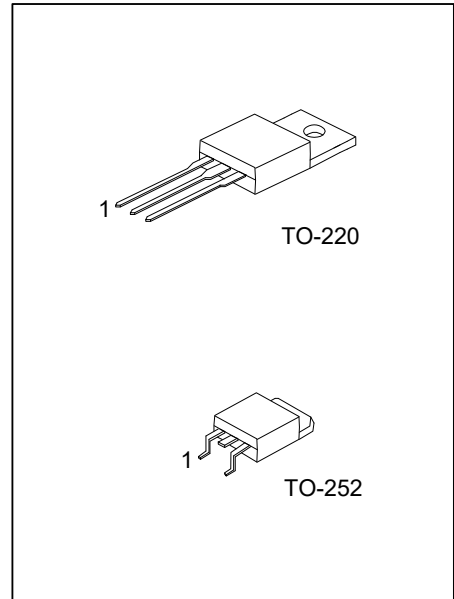
NPN EPITAXIAL TRANSISTOR

DESCRIPTION

The UTC **TIP142** is designed for using in general purpose amplifier and switching applications.

FEATURES

- * Low $V_{CE(SAT)}$
- * High Current Gain
- * Complementary to TIP107



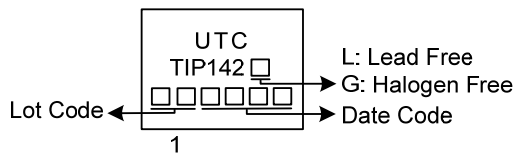
ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|---------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| TIP142L-TA3-T | TIP142G-TA3-T | TO-220 | B | C | E | Tube |
| TIP142L-TN3-R | TIP142G-TN3-R | TO-252 | B | C | E | Tape Reel |

Note: Pin Assignment: G: Gate D: Drain S: Source

| | |
|--|--|
| | <p>(1) Packing Type (1) T: Tube, R: Tape Reel</p> <p>(2) Package Type (2) TA3: TO-220, TN3: TO-252</p> <p>(3) Green Package (3) G: Halogen Free and Lead Free L: Lead Free</p> |
|--|--|

MARKING



■ ABSOLUTE MAXIMUM RATING ($T_C=25^\circ\text{C}$, unless otherwise specified.)

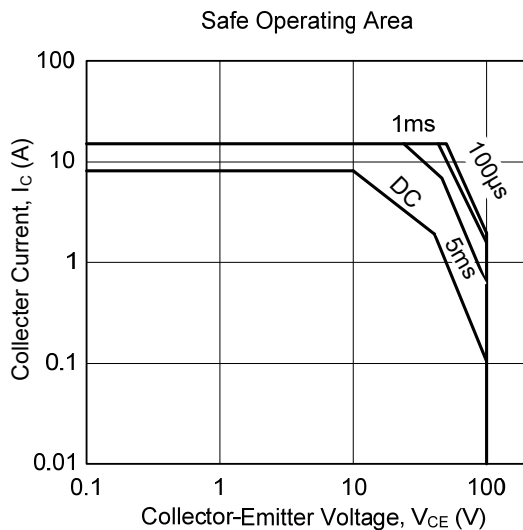
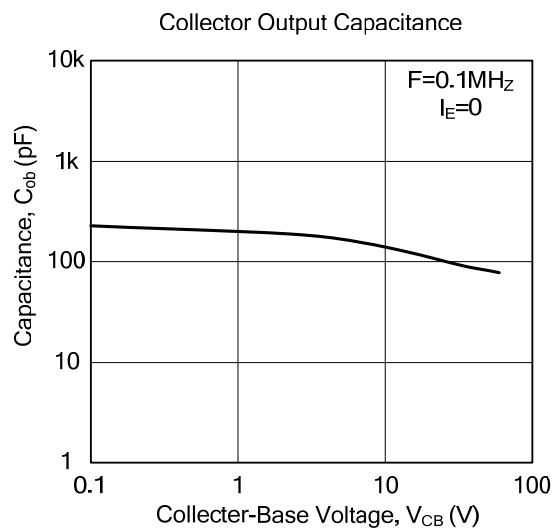
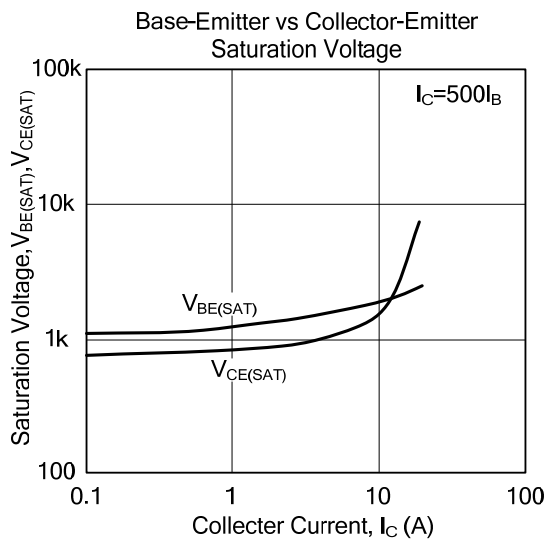
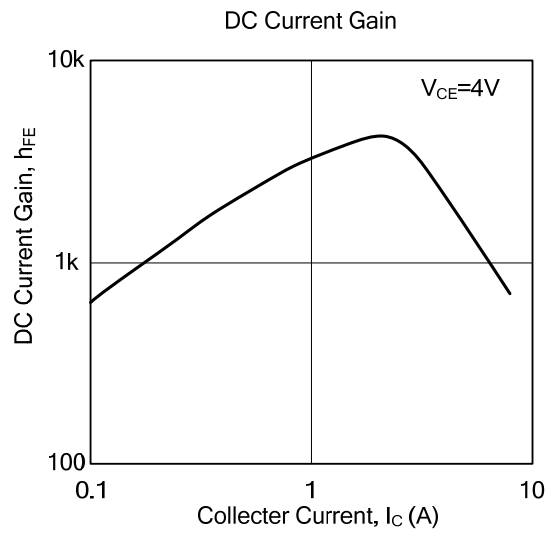
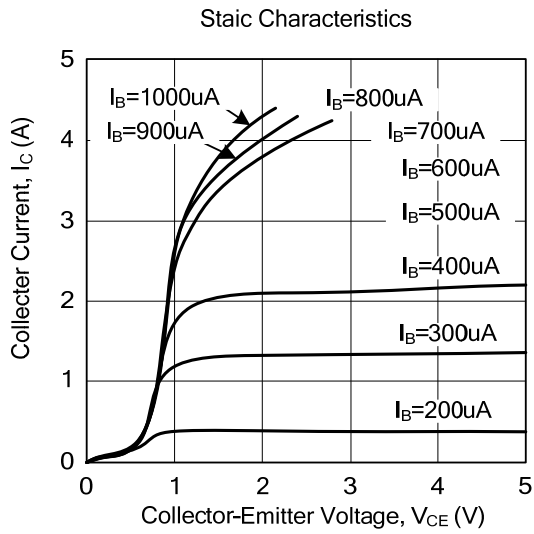
| PARAMETER | SYMBOL | RATINGS | UNIT | |
|-----------------------------|-----------|------------|------------------|---|
| Collector-Base Voltage | V_{CB0} | 100 | V | |
| Collector-Emitter Voltage | V_{CEO} | 100 | V | |
| Emitter-Base Voltage | V_{EBO} | 5 | V | |
| Collector Current | DC | I_C | 10 | A |
| | Pulse | I_{CP} | 15 | A |
| Base Current | DC | I_B | 0.5 | A |
| Collector Power Dissipation | TO-220 | P_C | 80 | W |
| | TO-252 | | 41 | W |
| Junction Temperature | T_J | +150 | $^\circ\text{C}$ | |
| Storage Temperature | T_{STG} | -65 ~ +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 ($T_C=25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------|--|------|-----|-----|------|
| Collector-Emitter Sustaining Voltage | $V_{CEO(SUS)}$ | $I_C=30\text{mA}$, $I_B=0\text{A}$ | 100 | | | V |
| Collector-Base Cut-Off Current | I_{CBO} | $V_{CB}=100\text{V}$, $I_E=0\text{A}$ | | | 1 | mA |
| Collector-Emitter Cut-Off Current | I_{CEO} | $V_{CE}=50\text{V}$, $I_B=0\text{A}$ | | | 2 | mA |
| Emitter-Base Cut-Off Current | I_{EBO} | $V_{EB}=5\text{V}$, $I_C=0\text{A}$ | | | 2 | mA |
| ON CHARACTERISTICS | | | | | | |
| DC Current Gain | h_{FE1} | $V_{CE}=4\text{V}$, $I_C=5\text{A}$ | 1000 | | | |
| | h_{FE2} | $V_{CE}=4\text{V}$, $I_C=10\text{A}$ | 500 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C=5\text{A}$, $I_B=10\text{mA}$ | | | 2 | V |
| | | $I_C=10\text{A}$, $I_B=40\text{mA}$ | | | 3 | V |
| Base-Emitter ON Voltage | $V_{BE(ON)}$ | $V_{CE}=4\text{V}$, $I_C=10\text{A}$ | | | 3 | V |

■ TYPICAL CHARACTERISTICS



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