

RoHS Compliant Product

SOT-363



**\* Features**

Power dissipation

$$P_{CM} : 0.3 \text{ W (Tamp.= 25}^{\circ}\text{C)}$$

Collector current

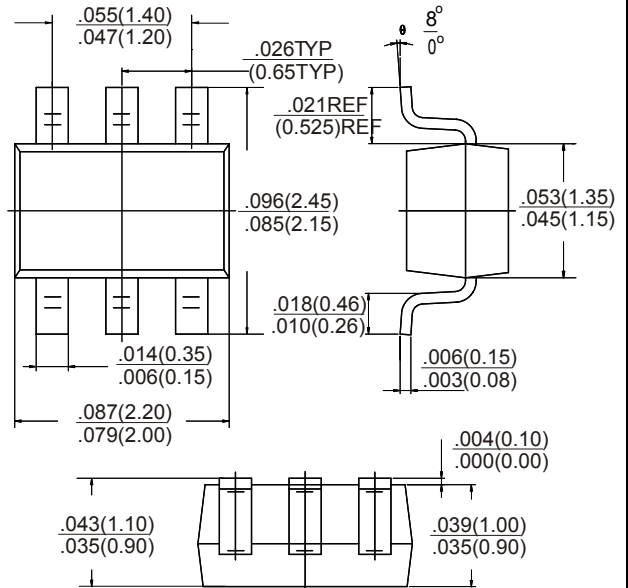
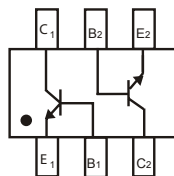
$$I_{CM} : 0.2 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 50 \text{ V}$$

Operating & Storage junction Temperature

$$T_j, T_{stg} : -55^{\circ}\text{C} \sim +150^{\circ}\text{C}$$



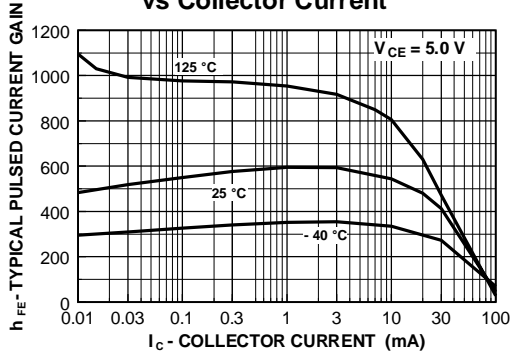
Dimensions in inches and (millimeters)

**Electrical Characteristics( Tamb=25°C unless otherwise specified)**

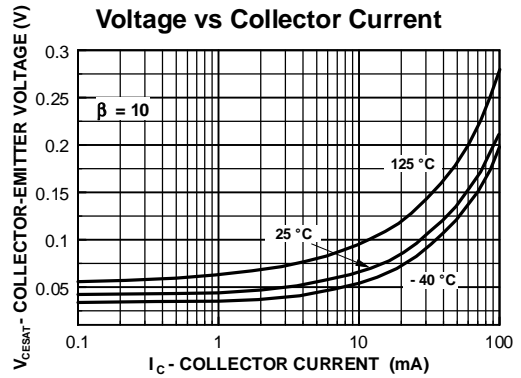
| Parameter                            | Symbol           | Test conditions                                      | MIN | TYP | MAX  | UNIT |
|--------------------------------------|------------------|--|-----|-----|------|------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$    | $I_C=10\mu\text{A}, I_E=0$                           | 50  |     |      | V    |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$    | $I_C=10\text{mA}, I_B=0$                             | 45  |     |      | V    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$    | $I_E=10\mu\text{A}, I_C=0$                           | 6   |     |      | V    |
| Collector cut-off current            | $I_{CBO}$        | $V_{CB}=30\text{V}, I_E=0$                           |     |     | 15   | nA   |
| DC current gain                      | $h_{FE(1)}$      | $V_{CE}=5\text{V}, I_C=2\text{mA}$                   | 110 |     | 630  |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$    | $I_C=10\text{mA}, I_B=0.5\text{mA}$                  |     |     | 0.25 | V    |
|                                      | $V_{CE(sat)(2)}$ | $I_C=100\text{mA}, I_B=5\text{mA}$                   |     |     | 0.65 | V    |
| Base-emitter voltage                 | $V_{BE}$         | $V_{CE}=5\text{V}, I_C=2\text{mA}$                   |     |     | 0.7  | V    |
|                                      | $V_{BE(2)}$      | $V_{CE}=5\text{V}, I_C=10\text{mA}$                  |     |     | 0.77 | V    |
| Transition frequency                 | $f_T$            | $V_{CE}=5\text{V}, I_C=20\text{mA}, f=100\text{MHz}$ |     | 200 |      | MHz  |
| Collector output capacitance         | $C_{ob}$         | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$            |     | 2   |      | pF   |

**Typical Characteristics**

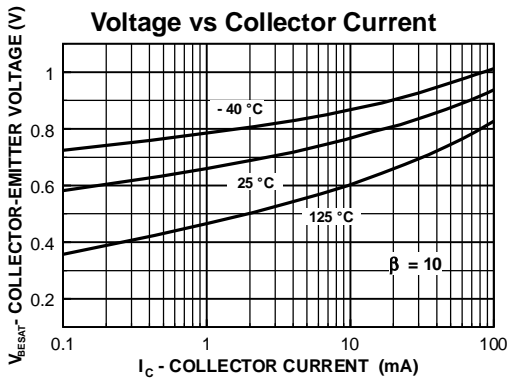
**Typical Pulsed Current Gain vs Collector Current**



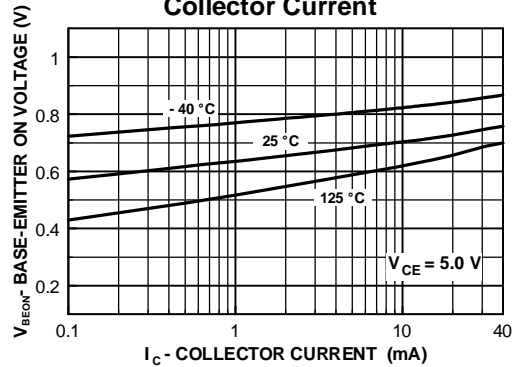
**Collector-Emitter Saturation Voltage vs Collector Current**



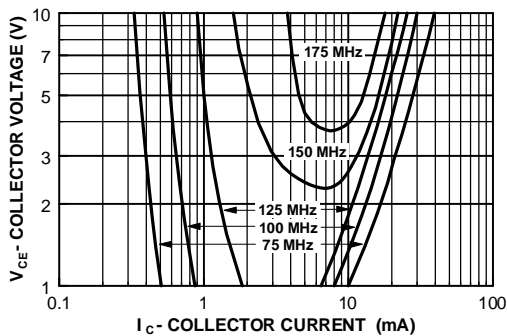
**Base-Emitter Saturation Voltage vs Collector Current**



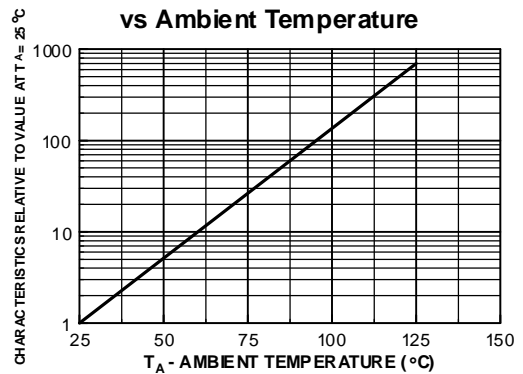
**Base-Emitter ON Voltage vs Collector Current**



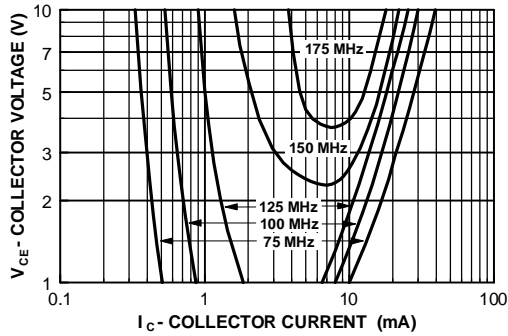
**Contours of Constant Gain Bandwidth Product ( $f_T$ )**



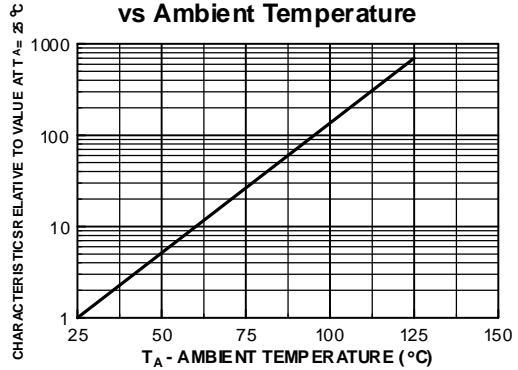
**Normalized Collector-Cutoff Current vs Ambient Temperature**



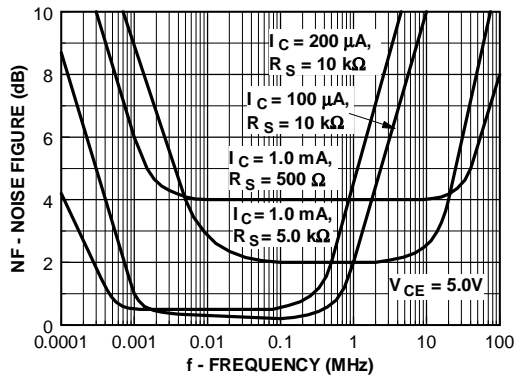
**Contours of Constant Gain Bandwidth Product ( $f_T$ )**



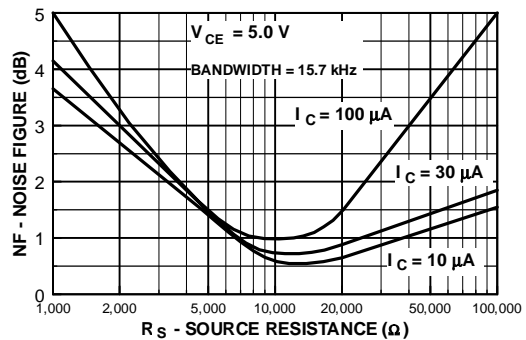
**Normalized Collector-Cutoff Current vs Ambient Temperature**



**Noise Figure vs Frequency**



**Wideband Noise Frequency vs Source Resistance**



**Power Dissipation vs Ambient Temperature**

