

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

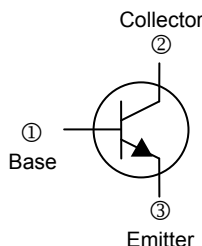
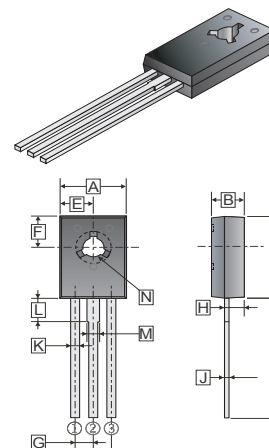
FEATURES

- Power Switching Applications

TO-126

CLASSIFICATION OF t_s

| | | |
|---------------------|------------------|------------------|
| Product-Rank | BD3DD13003-A1 | BD3DD13003-A2 |
| Range | 2-2.5 (μ s) | 2.5-3 (μ s) |
| Product-Rank | BD3DD13003-B1 | BD3DD13003-B2 |
| Range | 3-3.5 (μ s) | 3.5-4 (μ s) |



| REF. | Millimeter | | REF. | Millimeter | |
|------|------------|-------|------|------------|------|
| | Min. | Max. | | Min. | Max. |
| A | 7.40 | 7.80 | H | 1.10 | 1.50 |
| B | 2.50 | 2.90 | J | 0.45 | 0.60 |
| C | 10.60 | 11.00 | K | 0.66 | 0.86 |
| D | 15.30 | 15.70 | L | 2.10 | 2.30 |
| E | 3.70 | 3.90 | M | 1.17 | 1.37 |
| F | 3.90 | 4.10 | N | 3.00 | 3.20 |
| G | 2.29 TYP. | | | | |

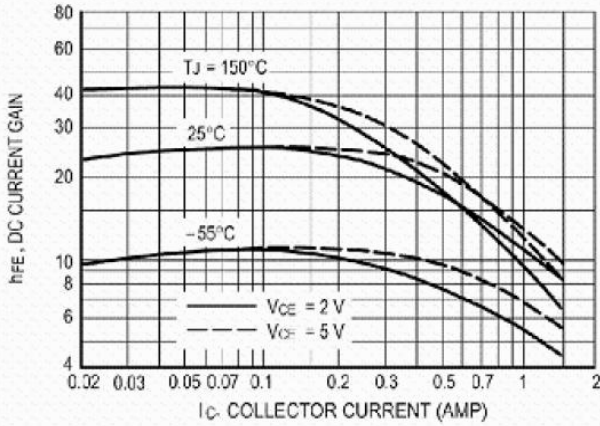
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Rating | Unit |
|--------------------------------|----------------|--------------|------------------|
| Collector to Base Voltage | V_{CBO} | 700 | V |
| Collector to Emitter Voltage | V_{CEO} | 400 | V |
| Emitter to Base Voltage | V_{EBO} | 9 | V |
| Collector Current - Continuous | I_C | 1.5 | A |
| Collector Power Dissipation | P_C | 1.5 | W |
| Junction, Storage Temperature | T_J, T_{STG} | 150, -55~150 | $^\circ\text{C}$ |

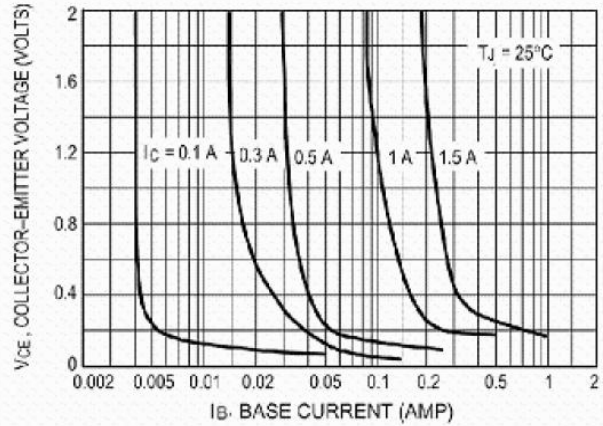
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---------------|------|------|------|---------|---|
| Collector to Base Breakdown Voltage | $V_{(BR)CBO}$ | 700 | - | - | V | $I_C=5\text{mA}, I_E=0$ |
| Collector to Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 400 | - | - | V | $I_C=10\text{mA}, I_B=0$ |
| Emitter to Base Breakdown Voltage | $V_{(BR)EBO}$ | 9 | - | - | V | $I_E=2\text{mA}, I_C=0$ |
| Collector Cut – Off Current | I_{CBO} | - | - | 1 | mA | $V_{CB}=700\text{V}, I_E=0$ |
| Collector Cut – Off Current | I_{CEO} | - | - | 0.5 | mA | $V_{CE}=400\text{V}, I_B=0$ |
| Emitter Cut – Off Current | I_{EBO} | - | - | 1 | mA | $V_{EB}=9\text{V}, I_C=0$ |
| DC Current Gain | $h_{FE(1)}$ | 20 | - | 30 | | $V_{CE}=5\text{V}, I_C=0.5\text{A}$ |
| | $h_{FE(2)}$ | 5 | - | - | | $V_{CE}=5\text{V}, I_C=1.5\text{A}$ |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | - | - | 0.6 | V | $I_C=1\text{A}, I_B=250\text{mA}$ |
| Base to Emitter Saturation Voltage | $V_{BE(sat)}$ | - | - | 1.2 | V | $I_C=1\text{A}, I_B=250\text{mA}$ |
| Transition Frequency | f_T | 5 | - | - | MHz | $V_{CE}=10\text{V}, I_C=100\text{mA}, f=1\text{MHz}$ |
| Fall time | t_f | - | 0.5 | - | μ s | $I_C=1\text{A}, I_{B1}=-I_{B2}=0.2\text{A}, V_{CC}=100\text{V}$ |
| Storage time | t_s | 2 | - | 4 | μ s | $I_C=250\text{mA}$ (UI9600) |

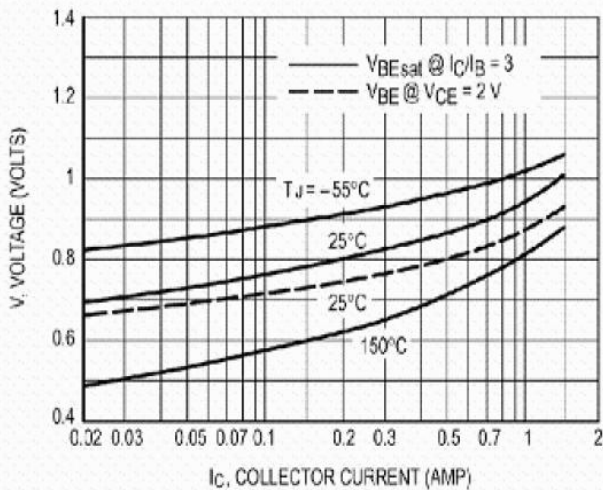
CHARACTERISTIC CURVE



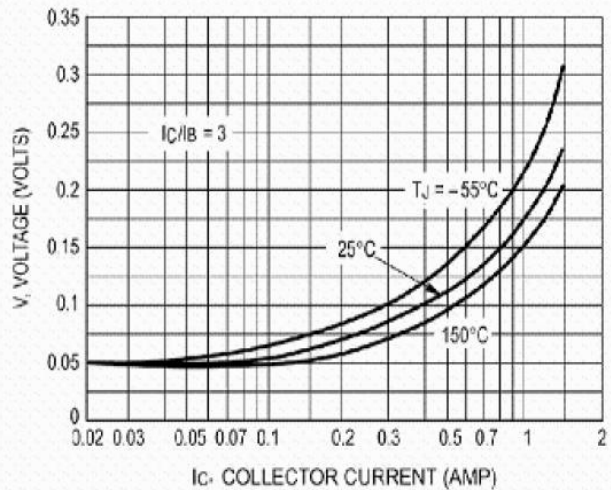
DC Current Gain



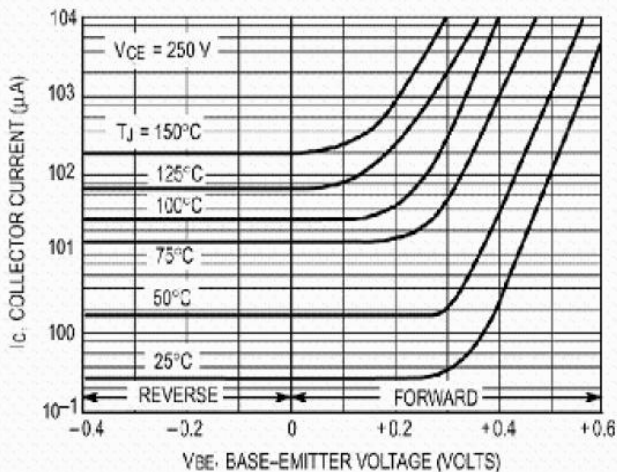
Collector Saturation Region



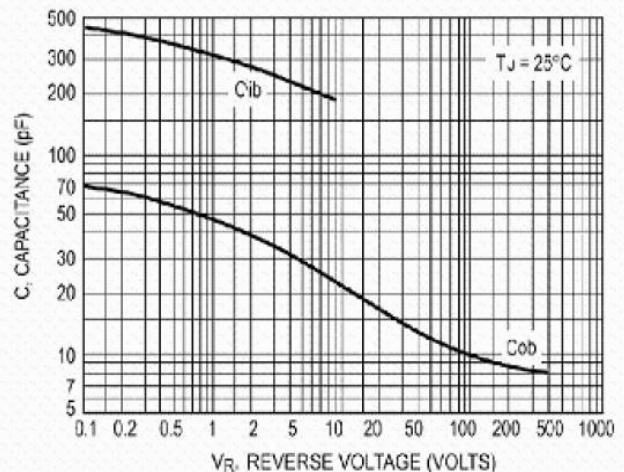
Base-Emitter Voltage



Collector-Emitter Saturation Region



Collector Cutoff Region



Capacitance