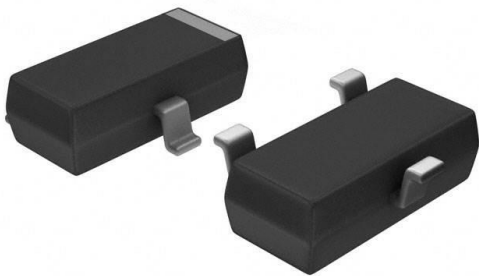


BC807-25LT1G Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

| | |
|------------------------------|--|
| DiGi Electronics Part Number | BC807-25LT1G-DG |
| Manufacturer | onsemi |
| Manufacturer Product Number | BC807-25LT1G |
| Description | TRANS PNP 45V 0.5A SOT23-3 |
| Detailed Description | Bipolar (BJT) Transistor PNP 45 V 500 mA 100MHz 300 mW Surface Mount SOT-23-3 (TO-236) |



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

BC807-25LT1G

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

45 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

300 mW

Operating Temperature:

-55°C ~ 150°C (TJ)

Package / Case:

TO-236-3, SC-59, SOT-23-3

Base Product Number:

BC807

Manufacturer:

onsemi

Product Status:

Active

Current - Collector (Ic) (Max):

500 mA

Vce Saturation (Max) @ Ib, Ic:

700mV @ 50mA, 500mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

160 @ 100mA, 1V

Frequency - Transition:

100MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-23-3 (TO-236)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

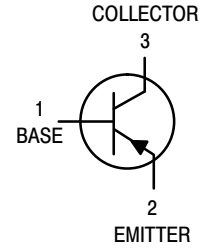
ECCN:

EAR99

General Purpose Transistors

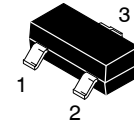
PNP Silicon

BC807-16L, BC807-25L, BC807-40L



Features

- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant



SOT-23
CASE 318
STYLE 6

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--------------------------------|-----------|-------|------|
| Collector – Emitter Voltage | V_{CEO} | -45 | V |
| Collector – Base Voltage | V_{CBO} | -50 | V |
| Emitter – Base Voltage | V_{EBO} | -6.0 | V |
| Collector Current – Continuous | I_C | -500 | mAdc |

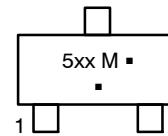
THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|-------------|----------------------------|
| Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 225 1.8 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient (Note 1) | $R_{\theta JA}$ | 436 | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation Alumina Substrate, (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 300 2.4 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 417 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 Board, 1 oz. Cu, 100mm².
2. Alumina = 0.4 x 0.3 x 0.024 in 99.5% alumina.

MARKING DIAGRAM



5xx = Device Code
 xx = A1, B1, or C
 M = Date Code*
 ■ = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

BC807-16L, BC807-25L, BC807-40L**ELECTRICAL CHARACTERISTICS** ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---------------|------|-----|--------------|---------------------|
| OFF CHARACTERISTICS | | | | | |
| Collector – Emitter Breakdown Voltage ($I_C = -10\text{ mA}$) | $V_{(BR)CEO}$ | -45 | – | – | V |
| Collector – Emitter Breakdown Voltage ($V_{EB} = 0, I_C = -10\ \mu\text{A}$) | $V_{(BR)CES}$ | -50 | – | – | V |
| Emitter – Base Breakdown Voltage ($I_E = -1.0\ \mu\text{A}$) | $V_{(BR)EBO}$ | -6.0 | – | – | V |
| Collector Cutoff Current ($V_{CB} = -20\text{ V}$) ($V_{CB} = -20\text{ V}, T_J = 150^\circ\text{C}$) | I_{CBO} | – | – | -100 -5.0 | nA μA |

ON CHARACTERISTICS

| | | | | | | |
|---|---|---------------|-------------------------|------------------|------------------------|---|
| DC Current Gain ($I_C = -100\text{ mA}, V_{CE} = -1.0\text{ V}$) ($I_C = -500\text{ mA}, V_{CE} = -1.0\text{ V}$) | BC807-16, SBC80-16L BC807-25, SBC807-25L BC807-40, SBC807-40L | h_{FE} | 100 160 250 40 | – – – – | 250 400 600 – | – |
| Collector – Emitter Saturation Voltage ($I_C = -500\text{ mA}, I_B = -50\text{ mA}$) | | $V_{CE(sat)}$ | – | – | -0.7 | V |
| Base – Emitter On Voltage ($I_C = -500\text{ mA}, V_{CE} = -1.0\text{ V}$) | | $V_{BE(on)}$ | – | – | -1.2 | V |

SMALL-SIGNAL CHARACTERISTICS

| | | | | | | |
|---|--|-----------|-----|----|---|-----|
| Current – Gain – Bandwidth Product ($I_C = -10\text{ mA}, V_{CE} = -5.0\text{ Vdc}, f = 100\text{ MHz}$) | | f_T | 100 | – | – | MHz |
| Output Capacitance ($V_{CB} = -10\text{ V}, f = 1.0\text{ MHz}$) | | C_{obo} | – | 10 | – | pF |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

ORDERING INFORMATION

| Device | Specific Marking | Package | Shipping [†] |
|----------------|------------------|----------------------|-----------------------|
| BC807-16LT1G | 5A1 | SOT-23 (Pb-Free) | 3000 / Tape & Reel |
| SBC807-16LT1G* | | | |
| BC807-16LT3G | 5A1 | | 10,000 / Tape & Reel |
| SBC807-16LT3G* | | | |
| BC807-25LT1G | 5B1 | | 3000 / Tape & Reel |
| SBC807-25LT1G* | | | |
| BC807-25LT3G | 5B1 | | 10,000 / Tape & Reel |
| SBC807-25LT3G* | | | |
| BC807-40LT1G | 5C | | 3000 / Tape & Reel |
| SBC807-40LT1G* | | | |
| BC807-40LT3G | 5C | 10,000 / Tape & Reel | |
| SBC807-40LT3G* | | | |

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-16LT1

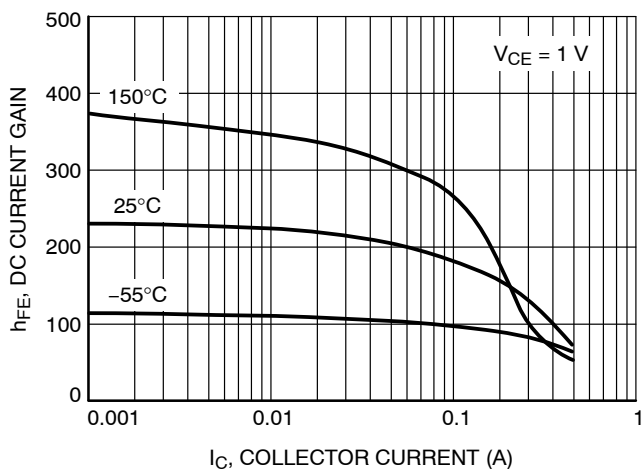


Figure 1. DC Current Gain vs. Collector Current

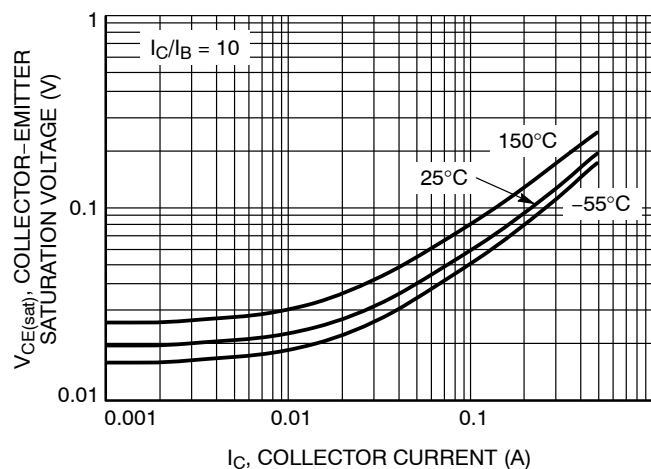


Figure 2. Collector Emitter Saturation Voltage vs. Collector Current

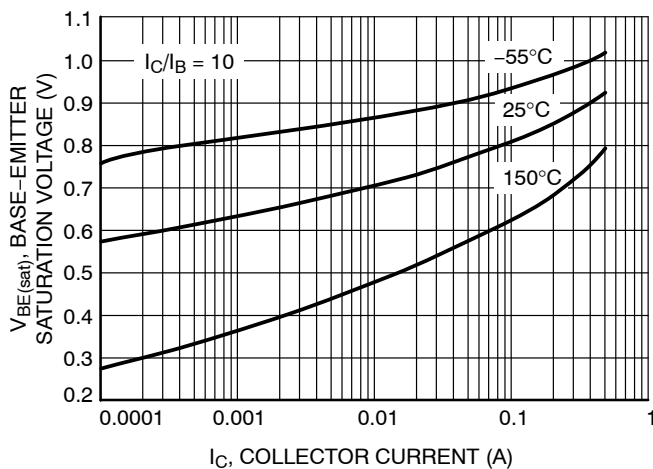


Figure 3. Base Emitter Saturation Voltage vs. Collector Current

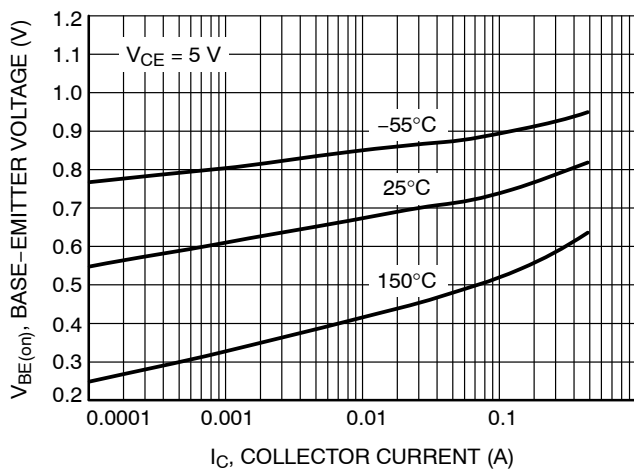


Figure 4. Base Emitter Voltage vs. Collector Current

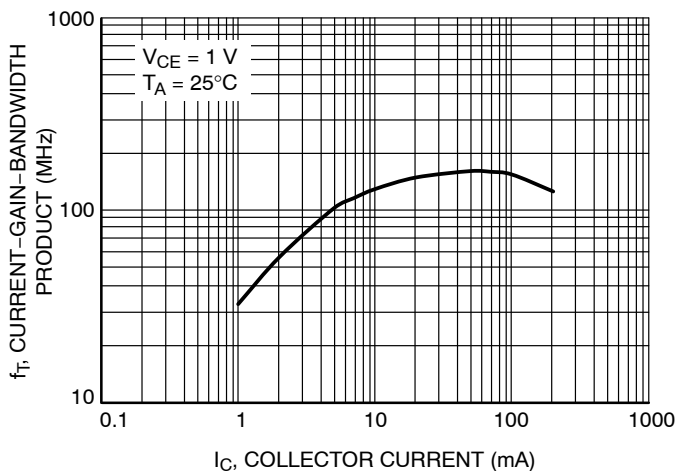


Figure 5. Current Gain Bandwidth Product vs. Collector Current

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-16LT1

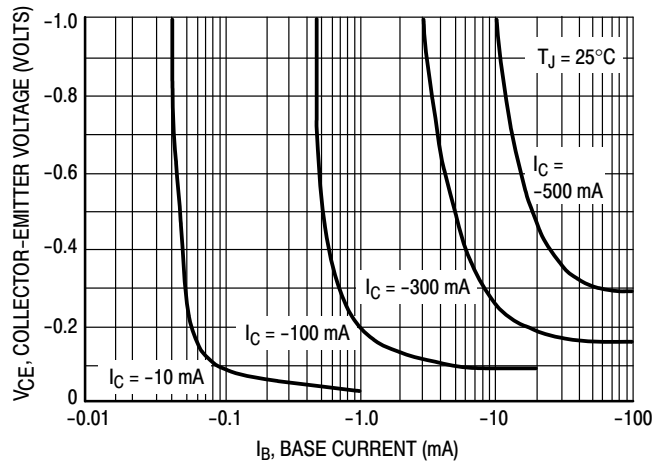


Figure 6. Saturation Region

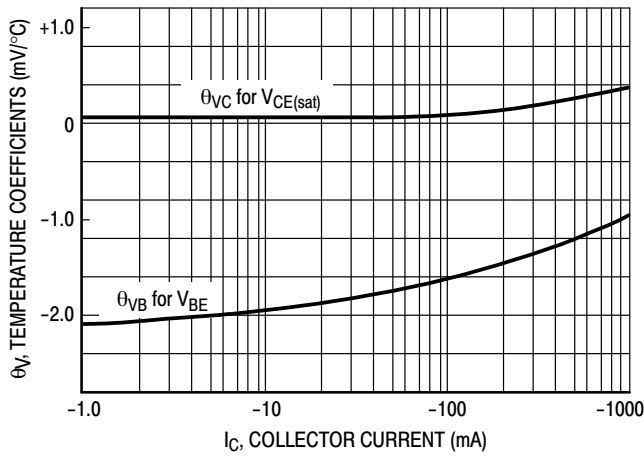


Figure 7. Temperature Coefficients

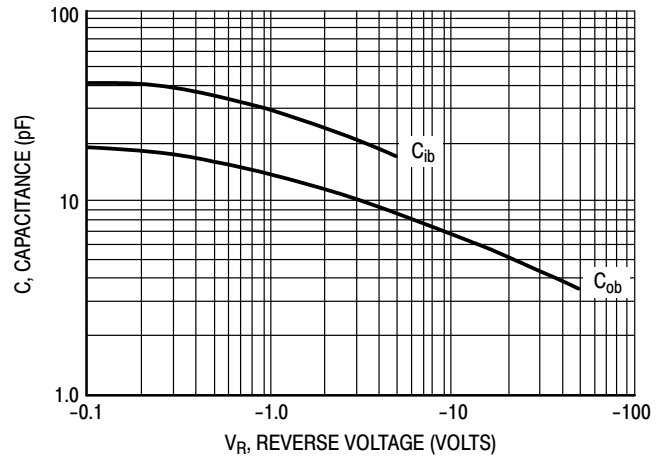


Figure 8. Capacitances

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-25LT1

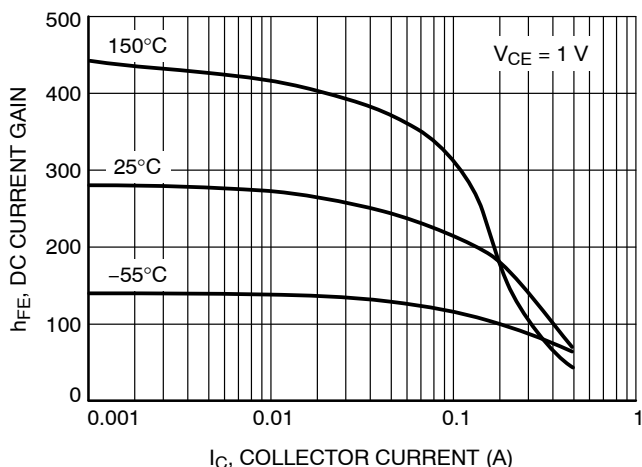


Figure 9. DC Current Gain vs. Collector Current

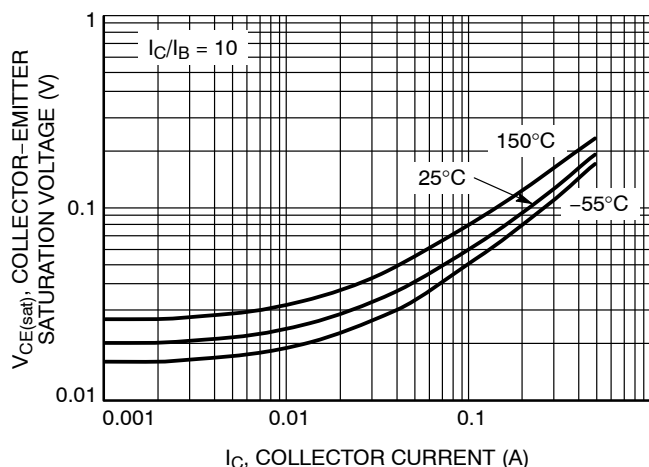


Figure 10. Collector Emitter Saturation Voltage vs. Collector Current

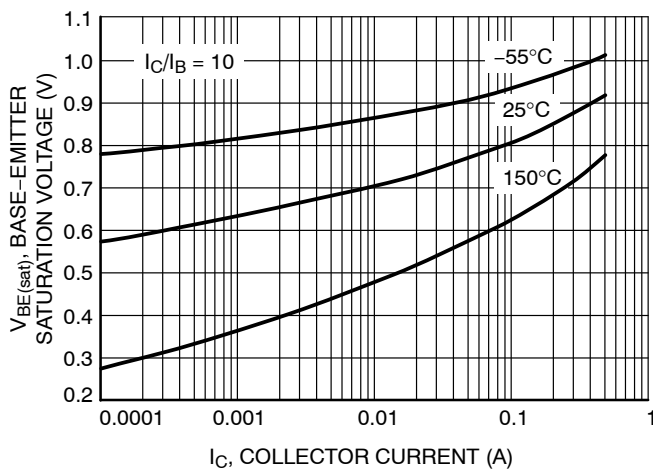


Figure 11. Base Emitter Saturation Voltage vs. Collector Current

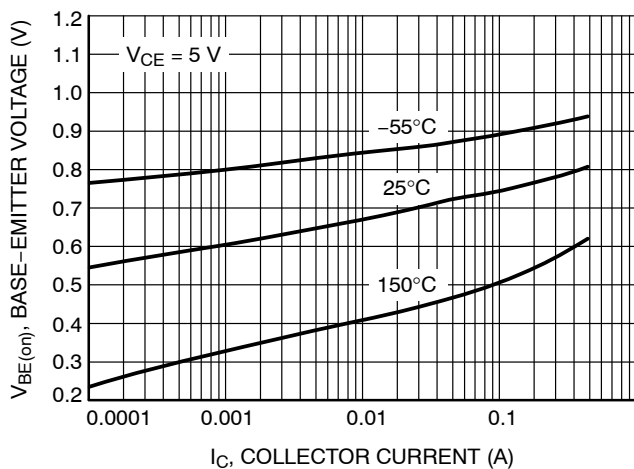


Figure 12. Base Emitter Voltage vs. Collector Current

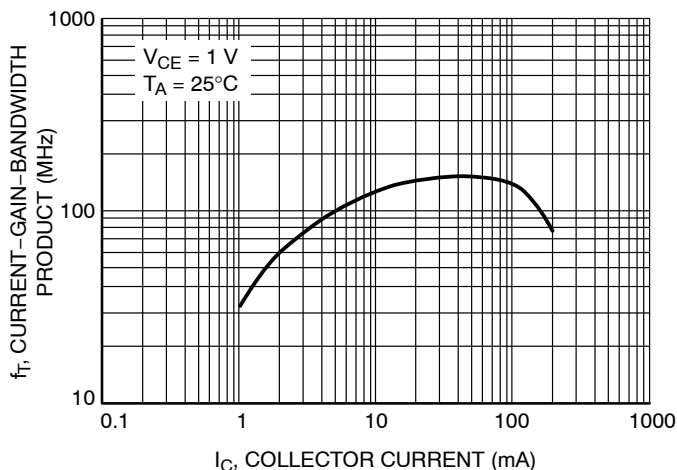


Figure 13. Current Gain Bandwidth Product vs. Collector Current

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-25LT1

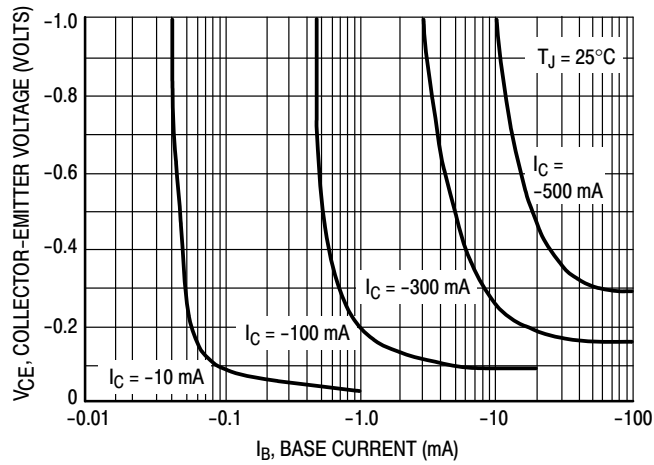


Figure 14. Saturation Region

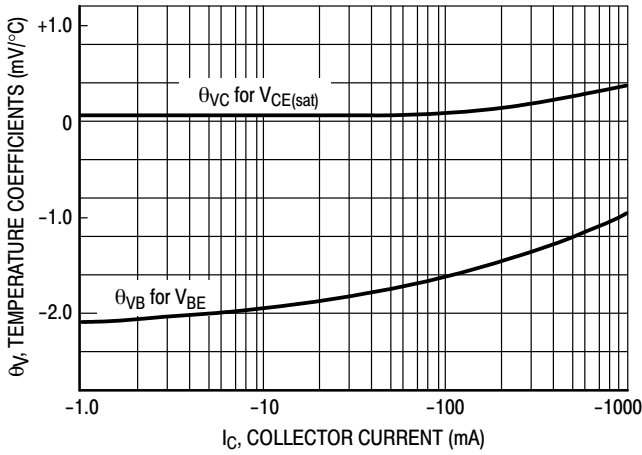


Figure 15. Temperature Coefficients

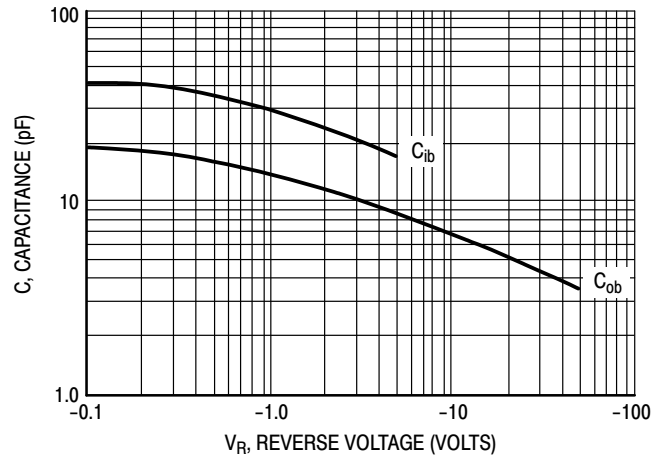


Figure 16. Capacitances

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-40LT1

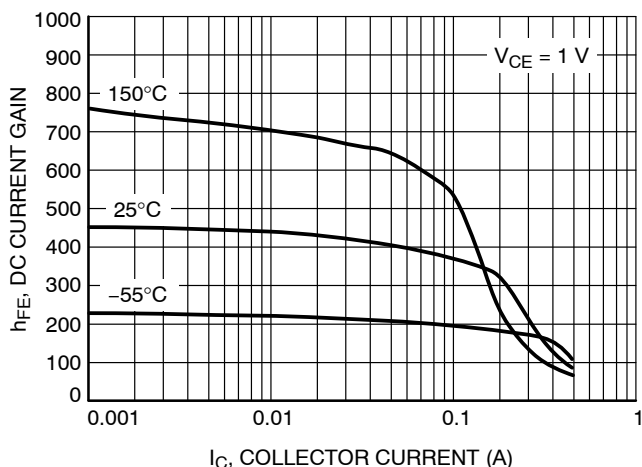


Figure 17. DC Current Gain vs. Collector Current

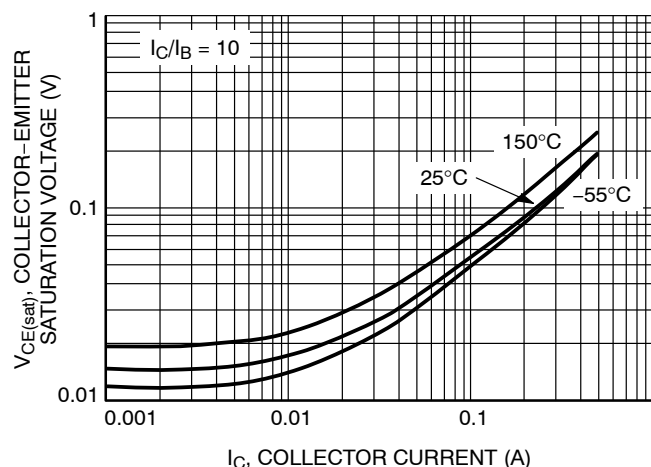


Figure 18. Collector Emitter Saturation Voltage vs. Collector Current

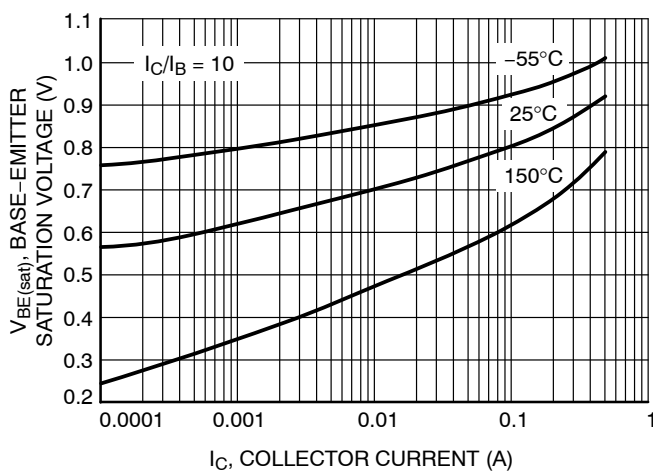


Figure 19. Base Emitter Saturation Voltage vs. Collector Current

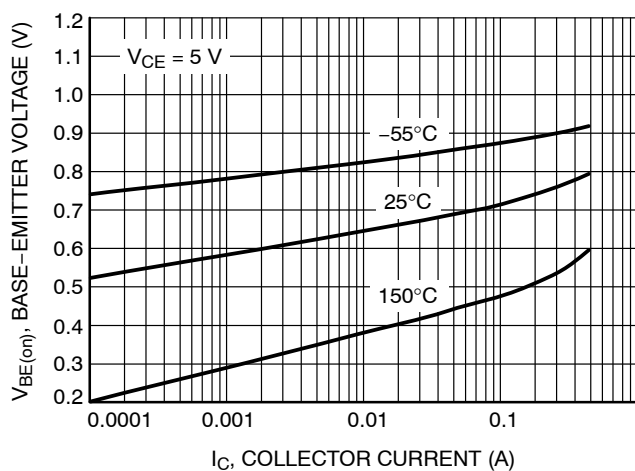


Figure 20. Base Emitter Voltage vs. Collector Current

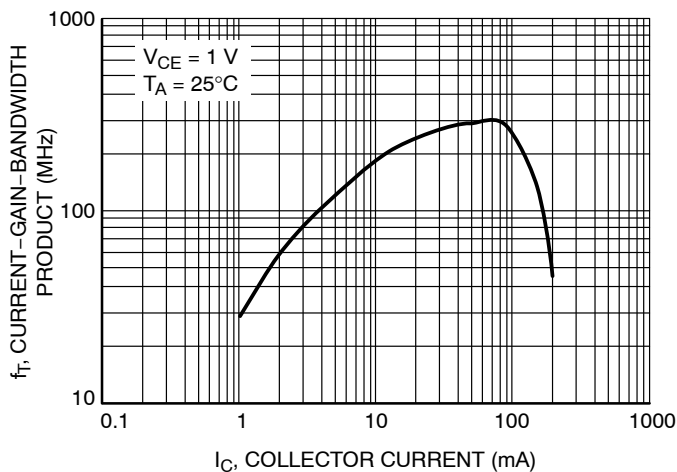


Figure 21. Current Gain Bandwidth Product vs. Collector Current

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-40LT1

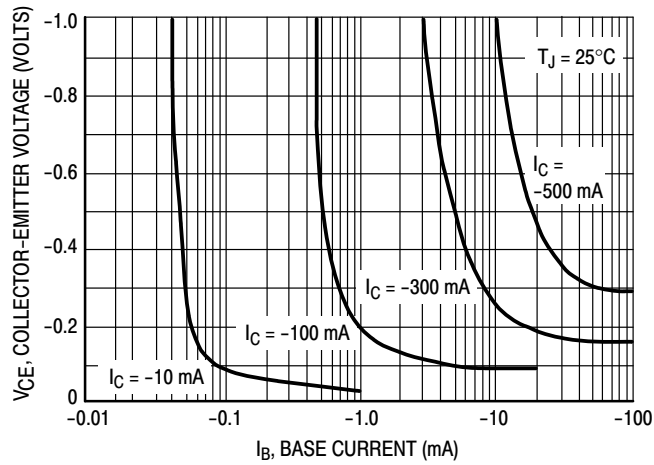


Figure 22. Saturation Region

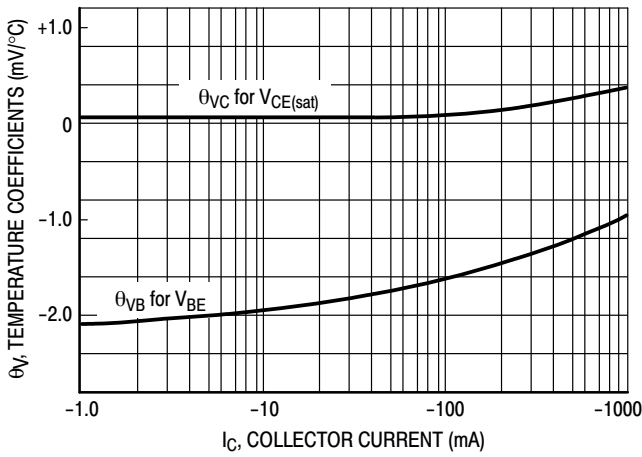


Figure 23. Temperature Coefficients

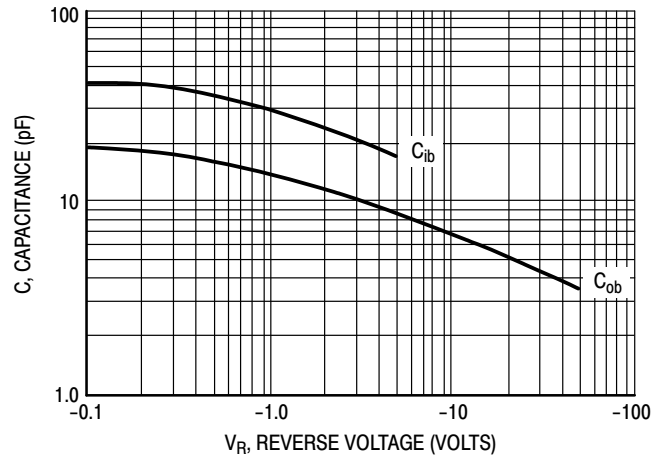


Figure 24. Capacitances

BC807-16L, BC807-25L, BC807-40L

TYPICAL CHARACTERISTICS – BC807-16LT1, BC807-25LT1, BC807-40LT1

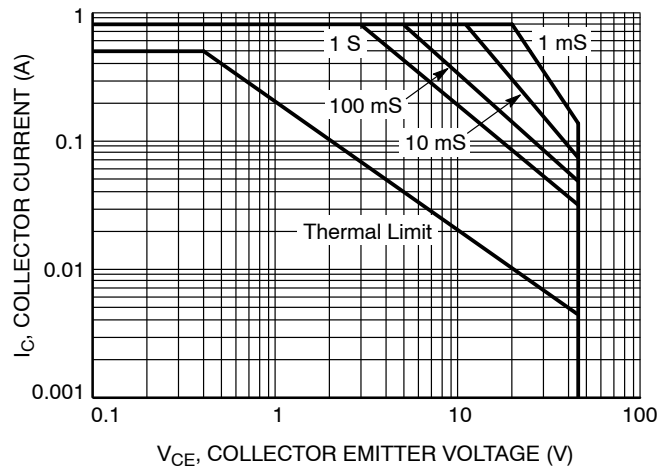


Figure 25. Safe Operating Area

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