



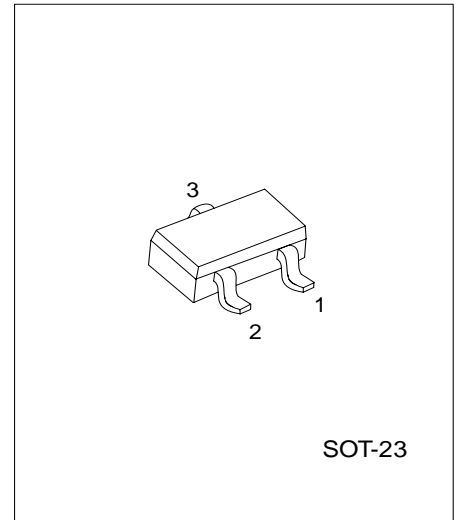
BC817

NPN EPITAXIAL SILICON TRANSISTOR

NPN GENERAL PURPOSE AMPLIFIER

■ Description

The UTC **BC817** is designed for general purpose medium power amplifiers and switches requiring collector currents to 1.2A.



SOT-23

*Pb-free plating product number:BC817L

■ PIN CONFIGURATION

| PIN NO. | PIN NAME |
|---------|-----------|
| 1 | EMITTER |
| 2 | BASE |
| 3 | COLLECTOR |

■ ORDERING INFORMATION

| Order Number | | Package | Packing |
|----------------|-------------------|---------|-------------|
| Normal | Lead Free Plating | | |
| BC817-16-AE3-R | BC817L-16-AE3-R | SOT-23 | Tape & Reel |
| BC817-25-AE3-R | BC817L-25-AE3-R | SOT-23 | Tape & Reel |
| BC817-40-AE3-R | BC817L-40-AE3-R | SOT-23 | Tape & Reel |

■ MARKING

| BC817-16 | BC817-25 | BC817-40 |
|----------|----------|----------|
| | | |

BC817

NPN EPITAXIAL SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATING(Ta=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|--|------------------|------------|-------------|
| Collector-Emitter Voltage | V _{CEO} | 45 | V |
| Collector-Base Voltage | V _{CES} | 50 | V |
| Emitter-Base Voltage | V _{EBO} | 5.0 | V |
| Collector Current -Continuous | I _C | 1.5 | A |
| Power Dissipation Derate above 25°C | P _D | 350 2.8 | mW mW/°C |
| Junction Temperature | T _J | 150 | |
| Storage Temperature | T _{STG} | -40 ~ +150 | |

Note 1. 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.

2. The device is guaranteed to meet performance specification within 0 ~+70 operating temperature range and assured by design from -20 ~+85 .

■ THERMAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

| CHARACTERISTIC | SYMBOL | RATING (Note) | UNIT |
|---|-----------------|---------------|------|
| Thermal Resistance, Junction to Ambient | θ _{JA} | 350 | °C/W |

Note: Device mounted on FR-4 PCB 40mm×40mm×1.5mm.

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

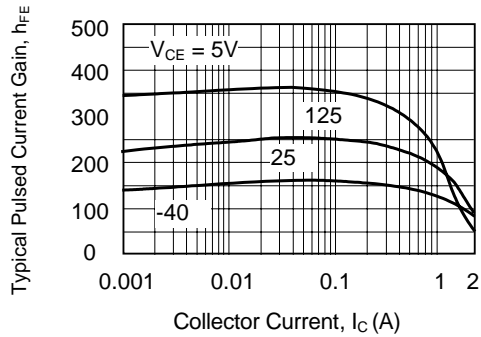
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------------|---|--------------------|-----|----------|----------|
| OFF CHARACTERISTICS | | | | | | |
| Collector-Emitter Breakdown Voltage | V _{(BR)CEO} | I _C =10mA, I _B =0 | 45 | | | V |
| Collector-Base Breakdown Voltage | V _{(BR)CES} | I _C =100μA, I _E =0 | 50 | | | V |
| Emitter-Base Breakdown Voltage | V _{(BR)EBO} | I _E =10μA, I _C =0 | 5 | | | V |
| Collector-Cutoff Current | I _{CBO} | V _{CB} =20V V _{CB} =20V, T _a =150°C | | | 100 5 | nA μA |
| ON CHARACTERISTICS | | | | | | |
| DC Current Gain | h _{FE1} * | I _C =100mA, V _{CE} =1.0V | See Classification | | | |
| | h _{FE2} | I _C =500mA, V _{CE} =1.0V | 40 | | | |
| Collector-Emitter Saturation Voltage | V _{CE(SAT)} | I _C =500mA, I _B =50Ma | | | 0.7 | V |
| Base-Emitter On Voltage | V _{BE(ON)} | I _C =500mA, V _{CE} =1.0V | | | 1.2 | V |

■ CLASSIFICATION OF hFE1*

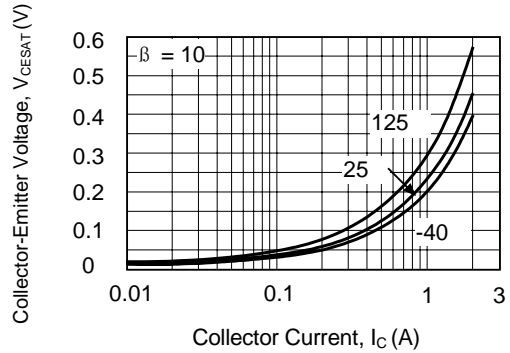
| RANK | BC817-16 | BC817-25 | BC817-40 |
|-------|----------|----------|----------|
| RANGE | 100-250 | 160-400 | 250-600 |

TYPICAL CHARACTERISTICS

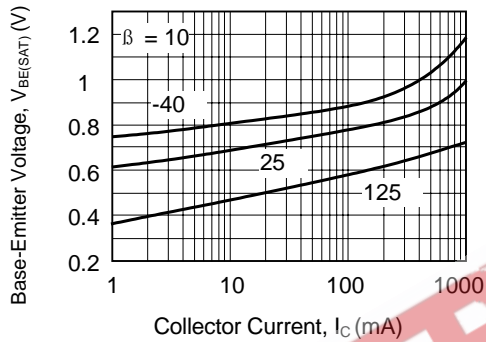
Typical Pulsed Current Gain vs Collector Current



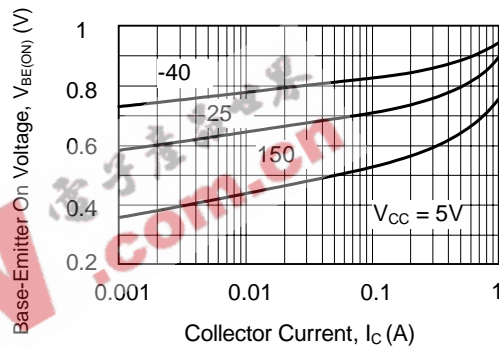
Collector-Emitter Saturation Voltage vs Collector Current



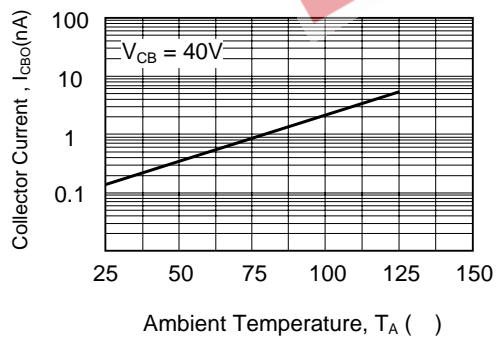
Base-Emitter Saturation Voltage vs Collector Current



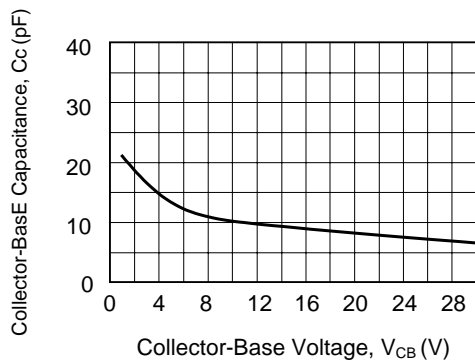
Base-Emitter On Voltage vs Collector Current



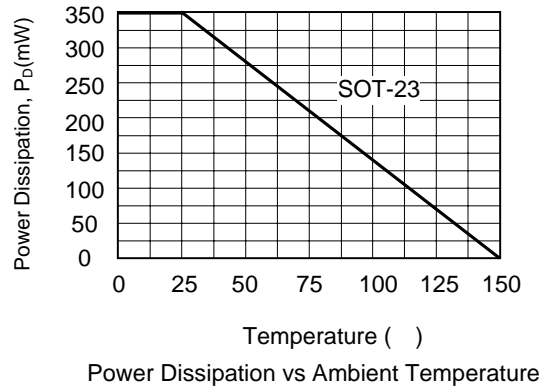
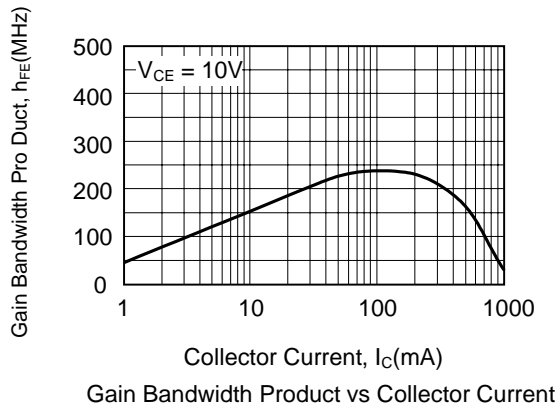
Collector-Cutoff Current vs Ambient Temperature



Collector-Base Capacitance vs Collector-Base Voltage



■ TYPICAL CHARACTERISTICS(cont.)



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