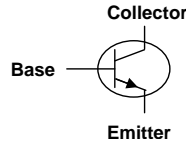
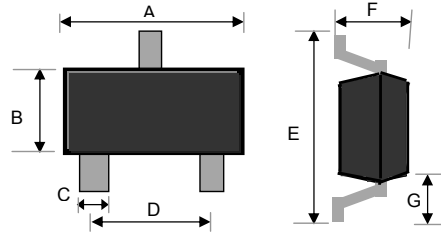


Small Signal Diode



SOT-23



Features

- ↪ Low power loss, high current capability, low V_f
- ↪ Surface device type mounting
- ↪ Moisture sensitivity level 1
- ↪ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ↪ Pb free version and RoHS compliant
- ↪ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

Mechanical Data

- ↪ Case : SOT- 23 small outline plastic package
- ↪ Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ↪ High temperature soldering guaranteed: 260°C/10s
- ↪ Weight : 0.008gram (approximately)

| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 1.50 | 1.70 | 0.059 | 0.067 |
| B | 3.55 | 3.85 | 0.140 | 0.152 |
| C | 0.45 | 0.65 | 0.018 | 0.026 |
| D | 2.60 | 2.80 | 0.102 | 0.11 |
| E | 1.05 | 1.25 | 0.041 | 0.049 |
| F | 0.08 | 0.15 | 0.003 | 0.006 |
| G | 0.02 REF | | 0.50 REF | |

Ordering Information

| Part No. | Package | Packing |
|---------------------|---------|---------------|
| BC817-16/-25/-40 RF | SOT-23 | 3Kpcs/7" Reel |

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

| Type Number | Symbol | BC817-16 | BC817-25 | BC817-40 | Units |
|---|-----------------|--------------|----------|----------|-------|
| Power Dissipation | P_D | 300 | | | mW |
| Collector-Base Voltage | V_{CBO} | 50 | | | V |
| Collector-Emitter Voltage | V_{CEO} | 45 | | | V |
| Emitter-Base Voltage | V_{EBO} | 5 | | | V |
| Collector Current | I_C | 500 | | | mA |
| Thermal Resistance (Junction to Ambient) (Note 1) | $R_{\theta JA}$ | 388 | | | °C/W |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55 to + 150 | | | °C |

Electrical Characteristics

| Type Number | Symbol | BC817-16 | BC817-25 | BC817-40 | Units |
|--|---------------|----------|----------|----------|---------|
| Collector-Base Breakdown Voltage $I_C=10\mu A, I_E=0$ | $V_{(BR)CBO}$ | 50 | | | V |
| Collector-Emitter Breakdown Voltage $I_C=10mA, I_B=0$ | $V_{(BR)CEO}$ | 45 | | | V |
| Emitter-Base Breakdown Voltage $I_E=1\mu A, I_C=0$ | $V_{(BR)EBO}$ | 5 | | | V |
| Collector Cut-off Current $V_{CB}=45V, I_E=0$ | I_{CBO} | 0.1 | | | μA |
| Emitter Cut-off Current $V_{EB}=4V, I_C=0$ | I_{EBO} | 0.1 | | | μA |
| Collector-Emitter saturation voltage $I_C=500mA, I_B=50mA$ | $V_{CE(sat)}$ | 0.7 | | | V |
| Base-Emitter saturation voltage $I_C=500mA, I_B=50mA$ | $V_{BE(sat)}$ | 1.2 | | | V |
| Transition frequency $V_{CE}=5V, I_C=10mA, f=100MHz$ | f_T | 100 | | | MHz |
| Junction Capacitance $V_R=0V, f=1.0MHz$ | C_J | 10 | | | pF |
| DC current gain $V_{CE}=1V, I_C=100mA$ | h_{FE} | 100 | - | 600 | |
| | | >40 | >40 | >40 | |
| DC current gain | h_{FE} | 100-250 | 160-400 | 250-600 | |

Notes: 1. Valid provided that electrodes are kept at ambient temperature

Small Signal Diode

Rating and Sharacteristic Curves

FIG 1 Typical Pulsed Current Gain vs Collector Current

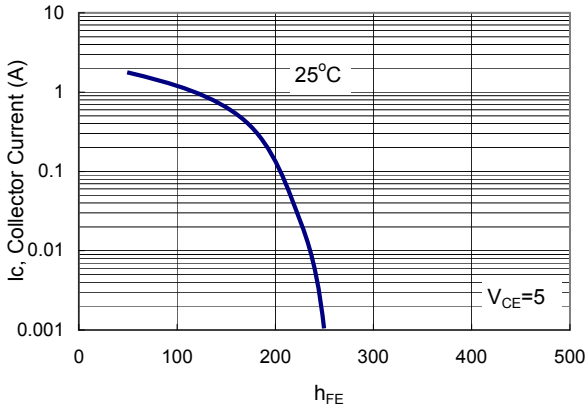


FIG 2 Collector-Emitter Saturation Voltage vs Collector Current

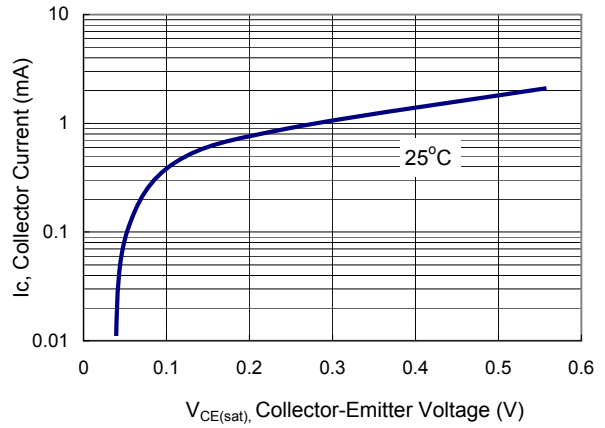


FIG 3 Base-Emitter Saturation Voltage vs Collector Current

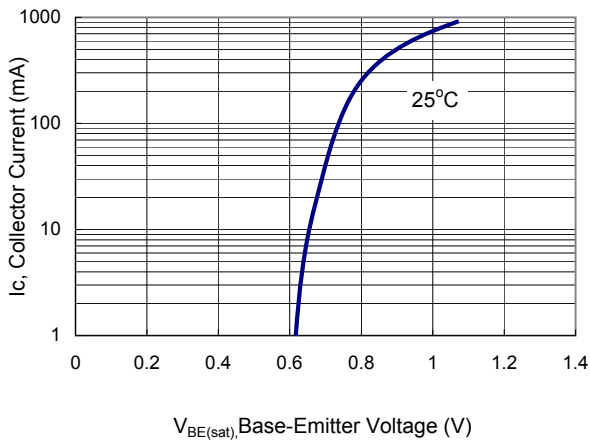


FIG 4 Base-Emitter on Voltage vs Collector Current

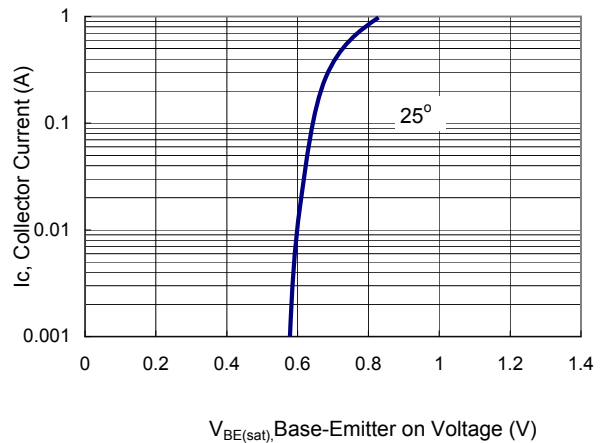


FIG 5 Collector-Base Capacitance vs Collector-Base Voltage

