



FEATURES

- Ideally suited for automatic insertion
- For switching and AF amplifier applications

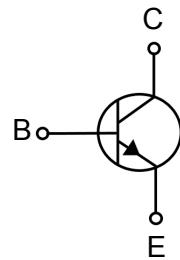


SOT-23

Package Marking and Ordering Information

| Product ID | Pack | Marking | Qty(PCS) |
|-----------------------|--------|---------|----------|
| BC846/BC847 /BC848 | SOT-23 | 1* | 3000 |

*: BC846A= **A**; BC846B= **B**; BC846C= **C**;
BC847A= **E**; BC847B= **F**; BC847C= **G**;
BC848A= **J**; BC848B= **K**; BC848C= **L**;



MAXIMUM RATINGS (Ta=25 unless otherwise noted)

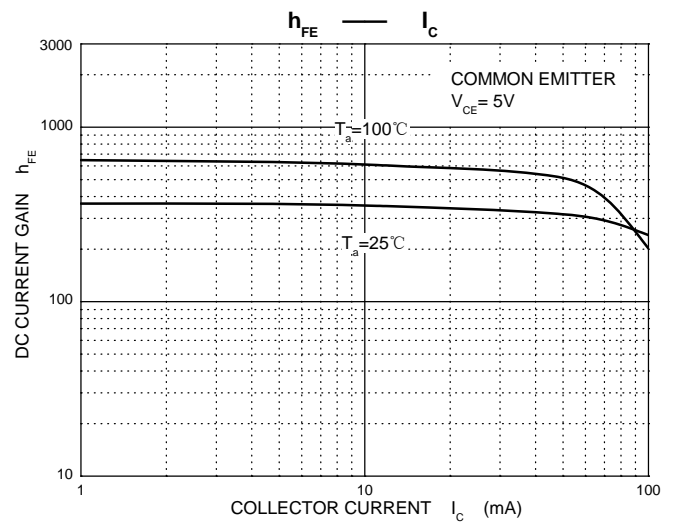
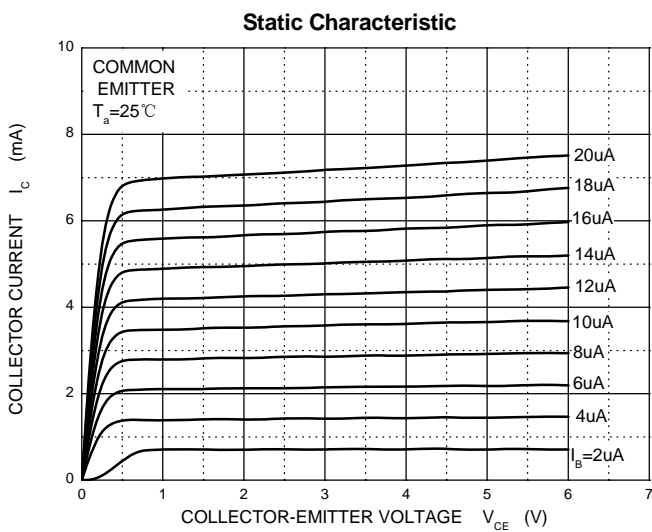
| Symbol | Parameter | Limit | Unit | |
|-----------------|---|----------|---------------|---|
| V_{CBO} | Collector-Base Voltage | BC846 | 80 | V |
| | | BC847 | 50 | |
| | | BC848 | 30 | |
| V_{CEO} | Collector-Emitter Voltage | BC846 | 65 | V |
| | | BC847 | 45 | |
| | | BC848 | 30 | |
| V_{EBO} | Emitter-Base Voltage | 6 | V | |
| I_C | Collector Current | 100 | mA | |
| P_C | Collector Power Dissipation | 200 | mW | |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 625 | $^{\circ}C/W$ | |
| T_j | Junction Temperature | 150 | $^{\circ}C$ | |
| T_{stg} | Storage Temperature | -55~+150 | $^{\circ}C$ | |

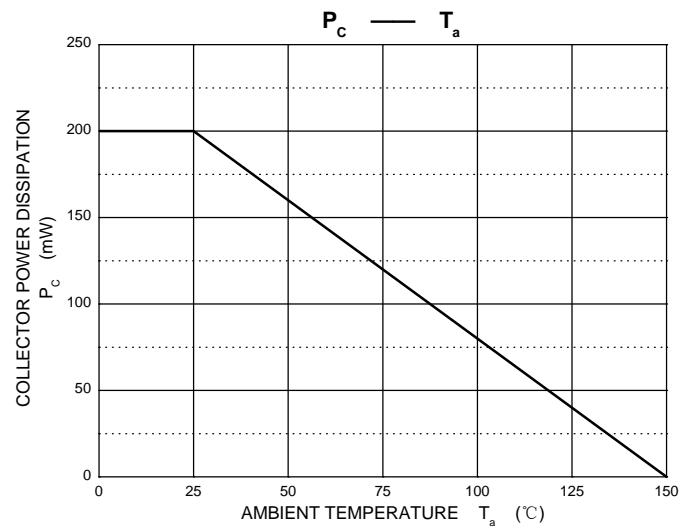
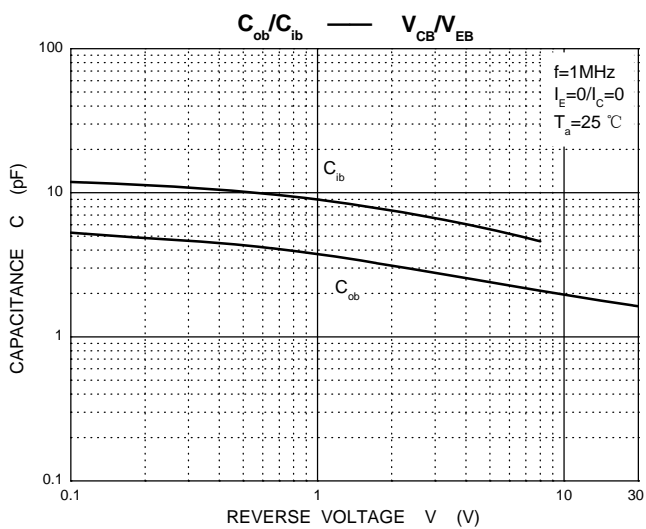
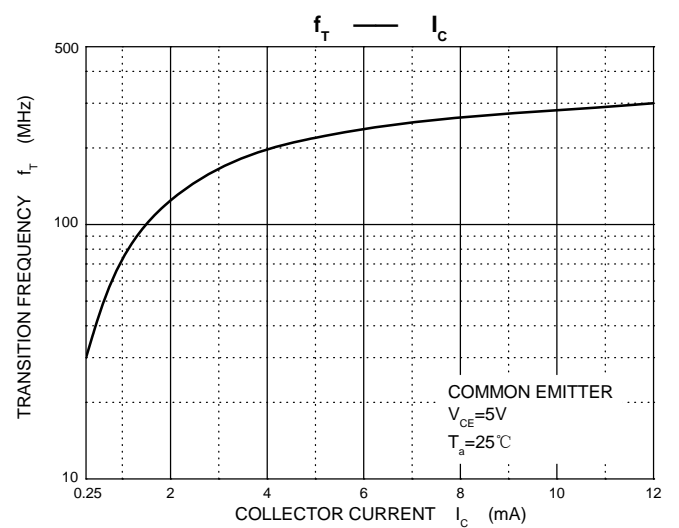
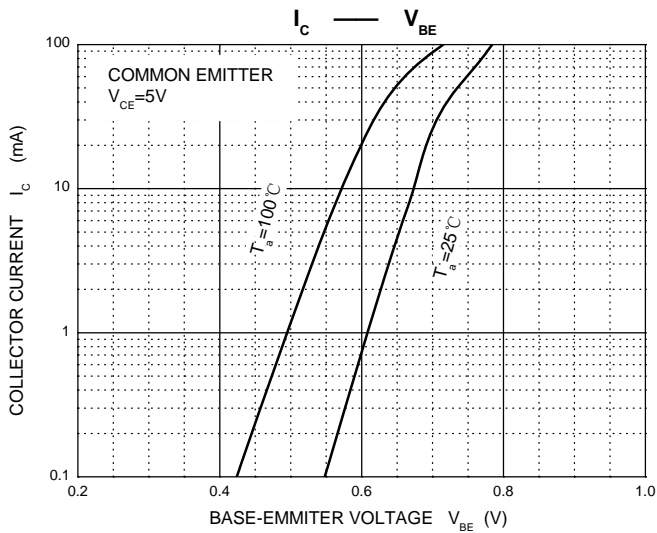
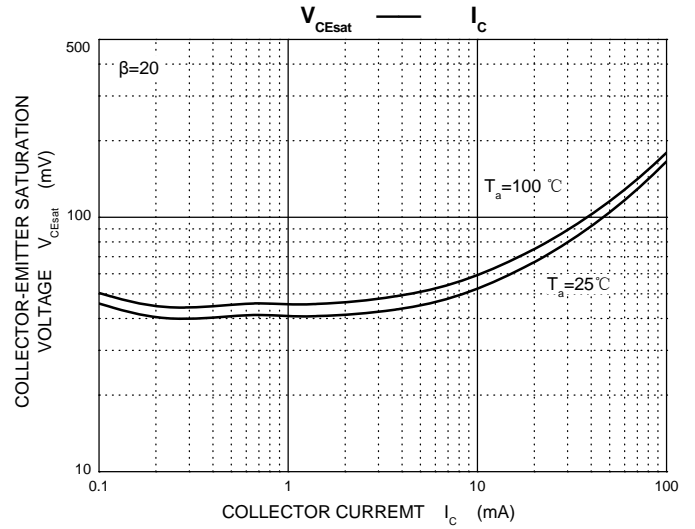
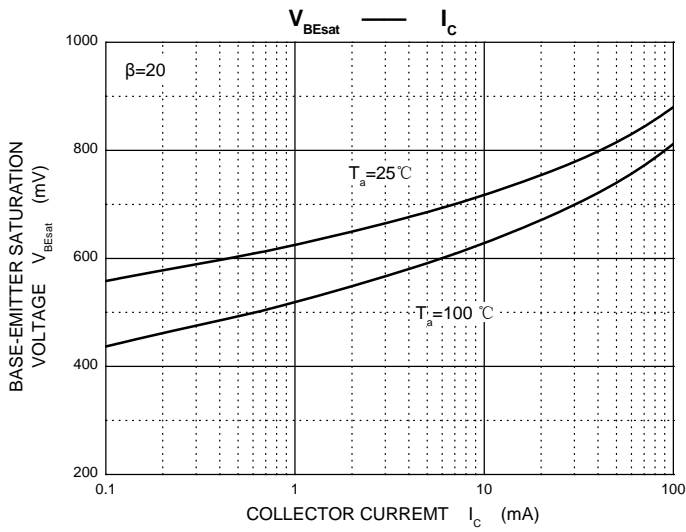


ELECTRICAL CHARACTERISTICS (T_a=25 unless otherwise specified)

| Symbol | Parameter | | Test conditions | Min | Max | Unit |
|----------------------|--------------------------------------|--|---|-------------------|-------------------|------|
| V _{(BR)CBO} | Collector-base breakdown voltage | BC846 BC847 BC848 | I _C =10μA, I _E =0 | 80 50 30 | | V |
| V _{(BR)CEO} | Collector-emitter breakdown voltage | BC846 BC847 BC848 | I _C =10mA, I _B =0 | 65 45 30 | | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | | I _E =10μA, I _C =0 | 6 | | V |
| I _{CBO} | Collector cut-off current | BC846 BC847 BC848 | V _{CB} =70V, I _E =0 V _{CB} =50V, I _E =0 V _{CB} =30V, I _E =0 | | 100 | nA |
| I _{EBO} | Emitter cut-off current | | V _{EB} =5V, I _C =0 | | 100 | nA |
| h _{FE} | DC current gain | BC846A BC847A BC848A BC846B BC847B BC848B BC846C BC847C BC848C | V _{CE} =5V, I _C =2mA | 110 200 420 | 220 450 800 | |
| V _{CE(sat)} | Collector-emitter saturation voltage | | I _C =100mA, I _B =5mA | | 0.5 | V |
| V _{BE(sat)} | Base-emitter saturation voltage | | | | 1.1 | V |
| f _T | Transition frequency | | V _{CE} =5V, I _C =10mA, f=30MHz | 100 | | MHz |
| C _{ob} | Collector output capacitance | | V _{CB} =10V, f= 1MHz | | 4.5 | pF |

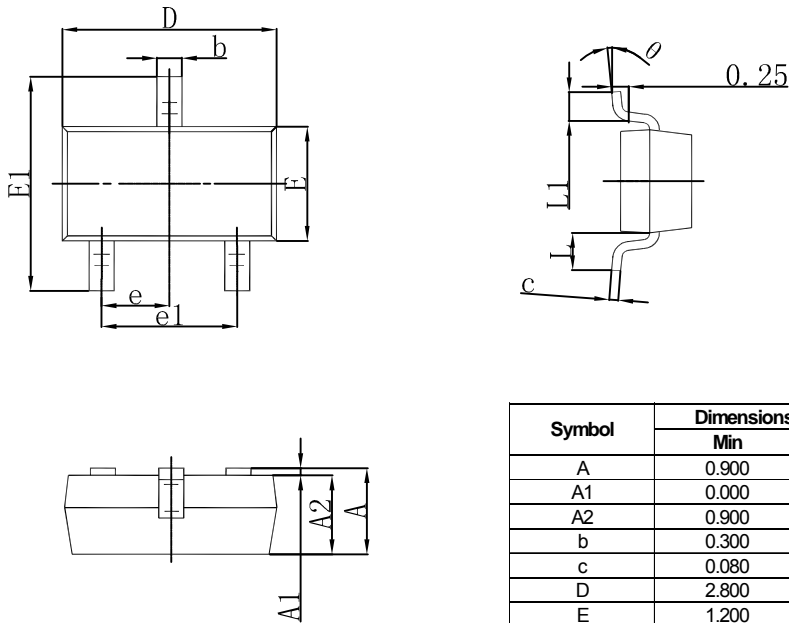
Typical Characteristics





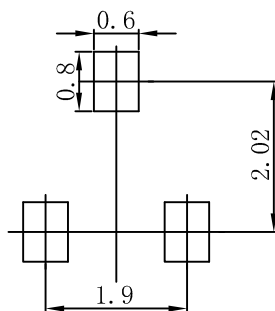


SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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