



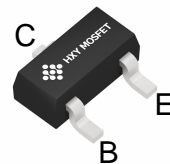
Features

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

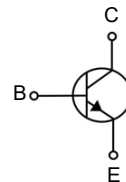
Package Marking and Ordering Information

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

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



SOT-23



Maximum Ratings (Ta=25 unless otherwise noted)

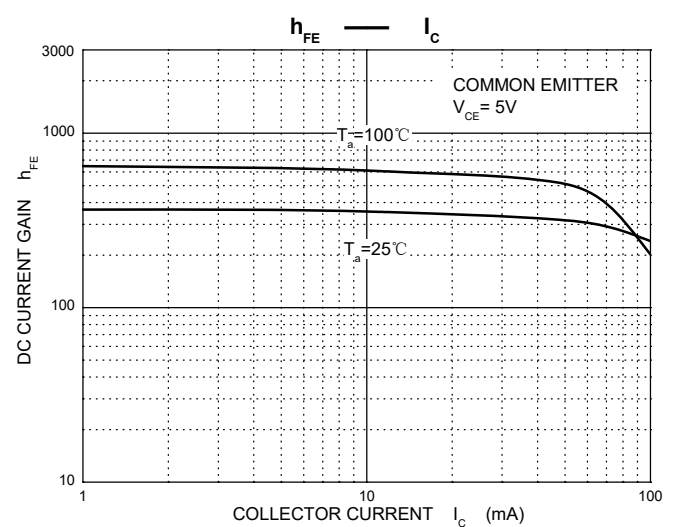
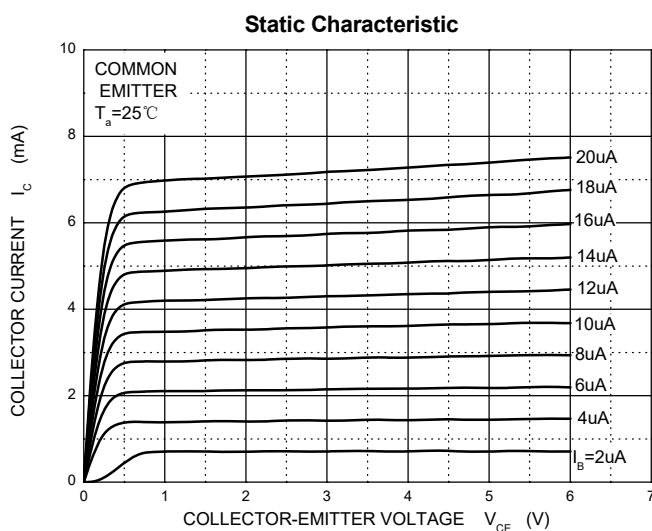
| Symbol | Parameter | Limit | Unit |
|-----------------|---|----------|------|
| V_{CBO} | Collector-Base Voltage BC846 | 80 | V |
| | BC847 | 50 | |
| | BC848 | 30 | |
| V_{CEO} | Collector-Emitter Voltage BC846 | 65 | V |
| | BC847 | 45 | |
| | BC848 | 30 | |
| V_{EBO} | Emitter-Base Voltage | 6 |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

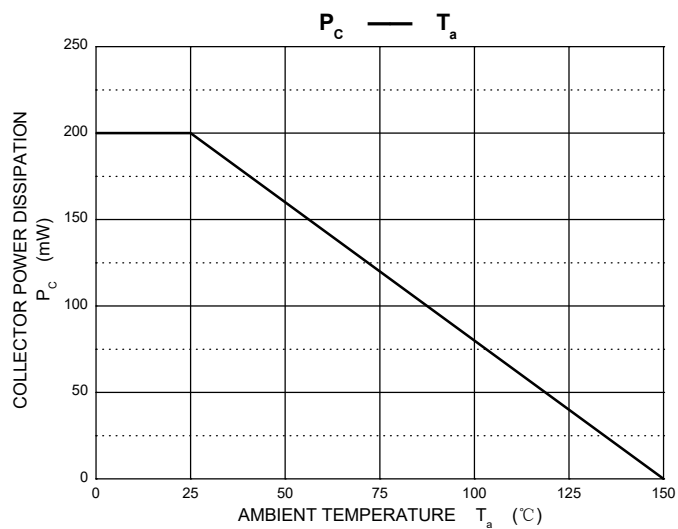
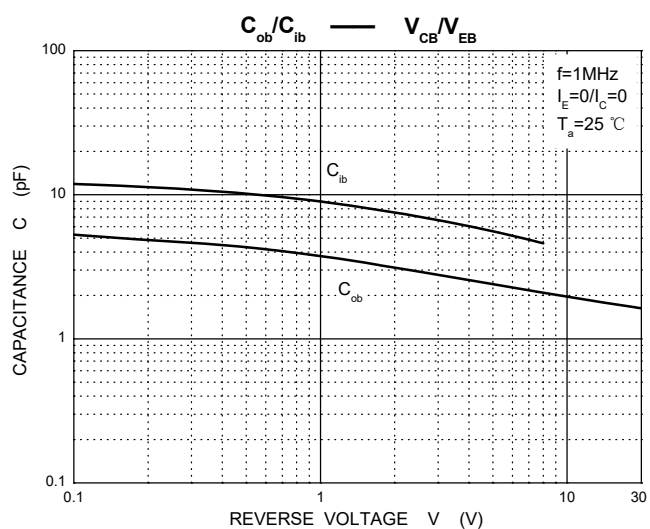
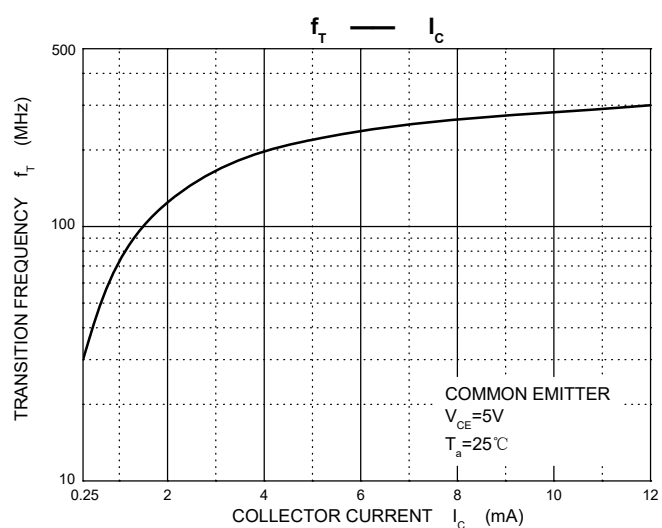
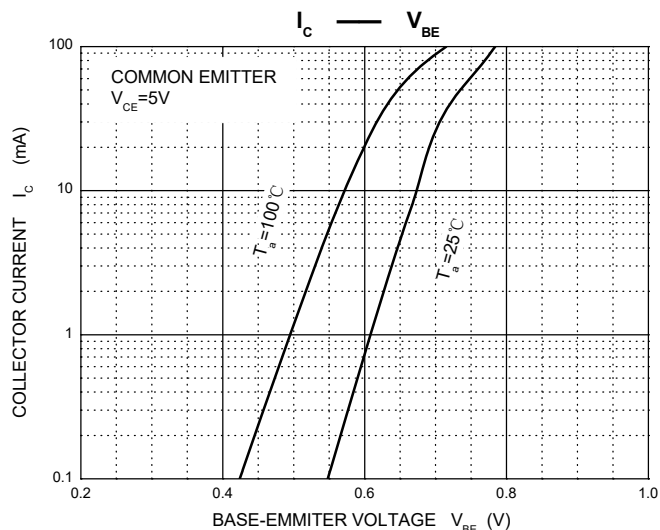
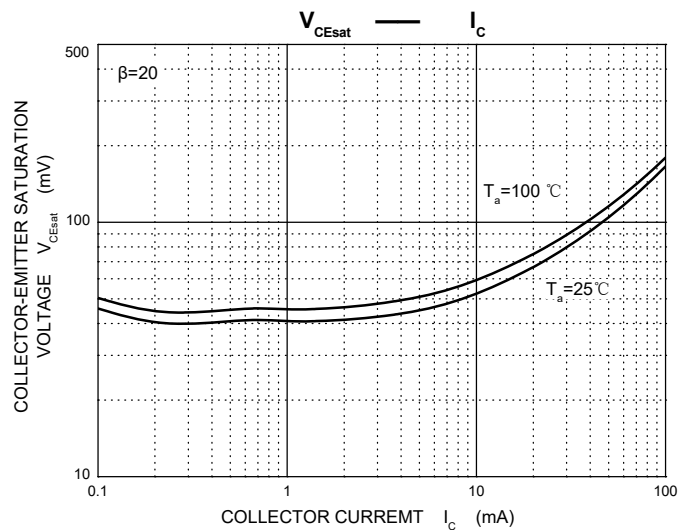
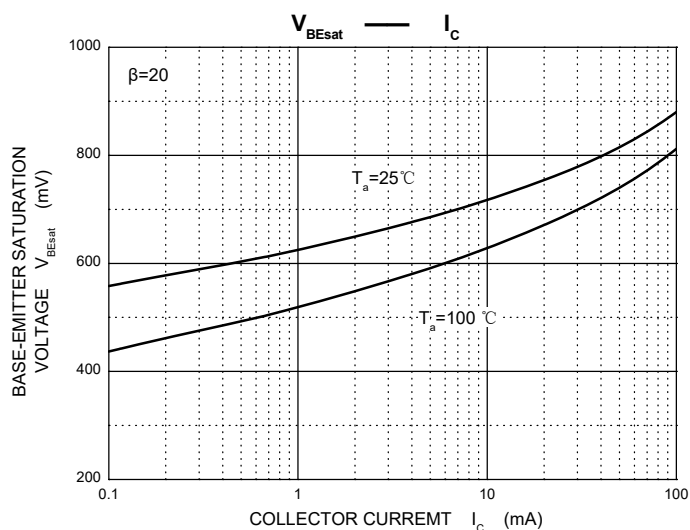


Electrical Characteristics (Ta=25 unless otherwise specified)

| Symbol | Parameter | | Test conditions | Min | Max | Unit |
|---------------|--------------------------------------|--|---|-------------------|-------------------|------|
| $V_{(BR)CBO}$ | Collector-base breakdown voltage | BC846 BC847 BC848 | $I_C=10\mu A, I_E=0$ | 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 | | $I_E=10\mu A, I_C=0$ | 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 |
| Cob | Collector output capacitance | | $V_{CB}=10V, f=1MHz$ | | 4.5 | pF |

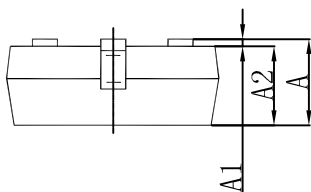
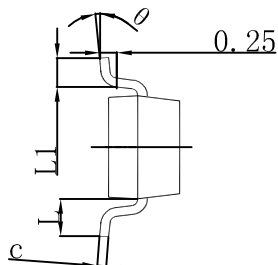
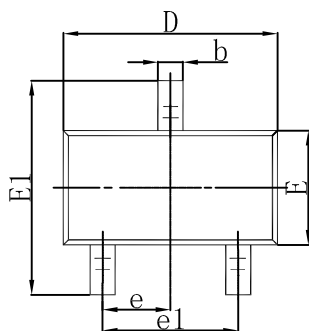
Typical Characteristics





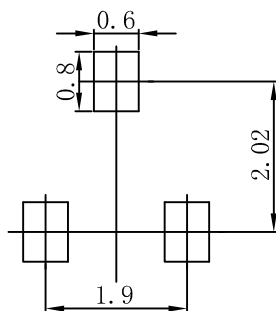


SOT-23 Package Outline Dimensions



| 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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