



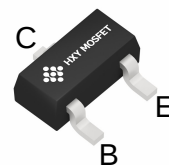
## Features

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

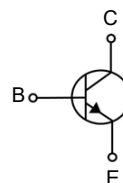
## Package Marking and Ordering Information

| Product ID | Pack   | Marking | Qty(PCS) |
|------------|--------|---------|----------|
| BC848B,215 | SOT-23 | 1B      | 3000     |

1. BASE
2. EMITTER
3. COLLECTOR



**SOT-23**



## Maximum Ratings (Ta=25°C unless otherwise noted)

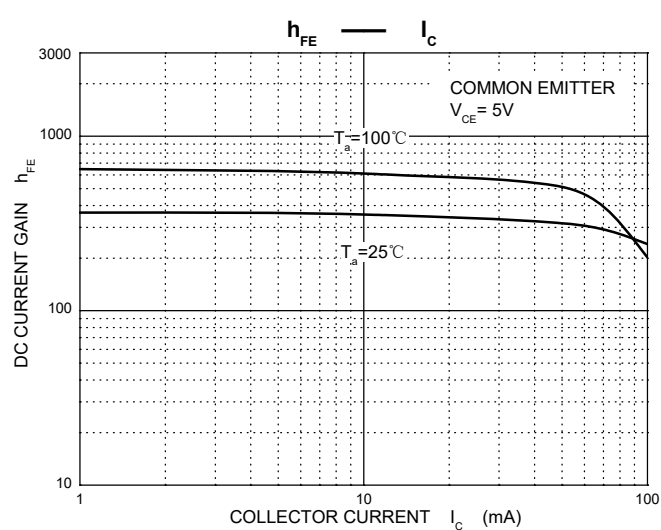
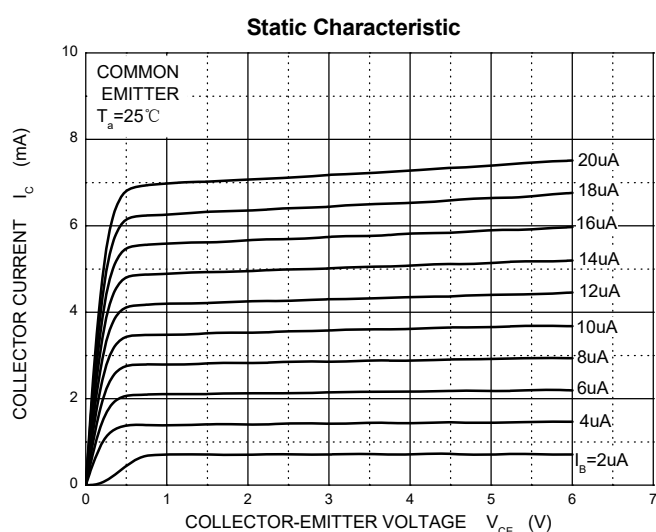
| Symbol          | Parameter                                   | Limit    | Unit |
|-----------------|---------------------------------------------|----------|------|
| $V_{CBO}$       | Collector-Base Voltage                      | 30       | V    |
| $V_{CEO}$       | Collector-Emitter Voltage                   | 30       | V    |
| $V_{EBO}$       | 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   |

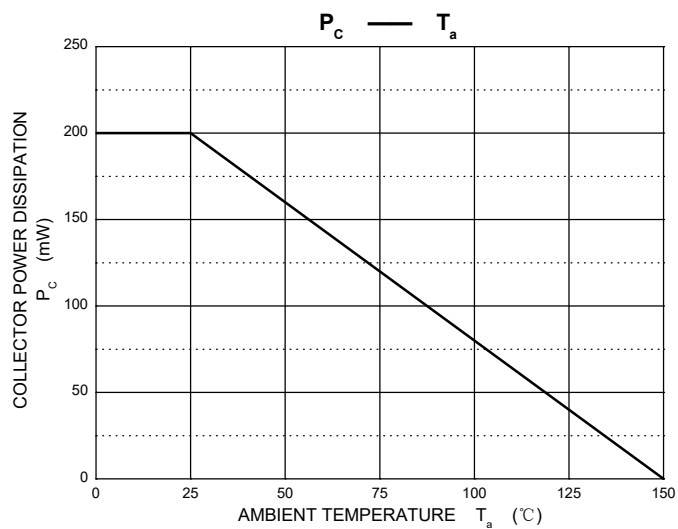
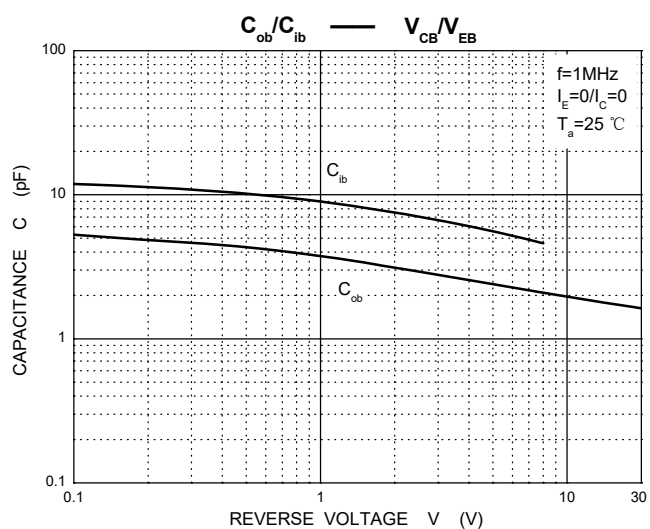
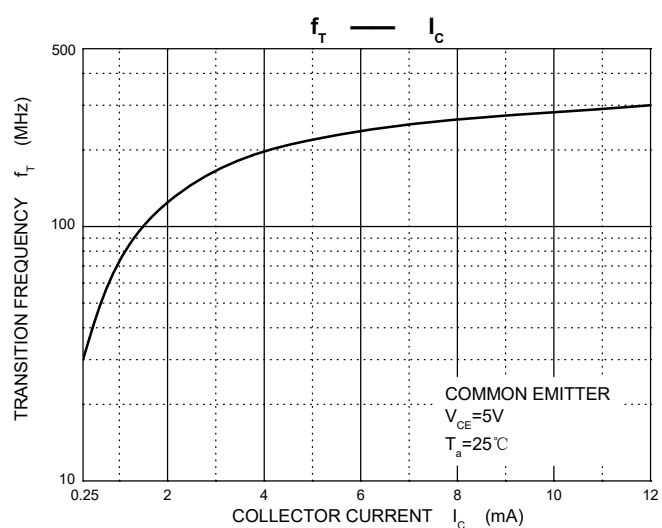
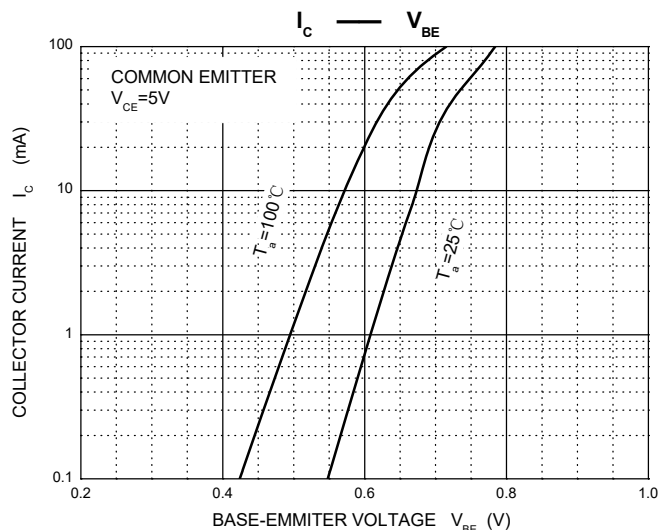
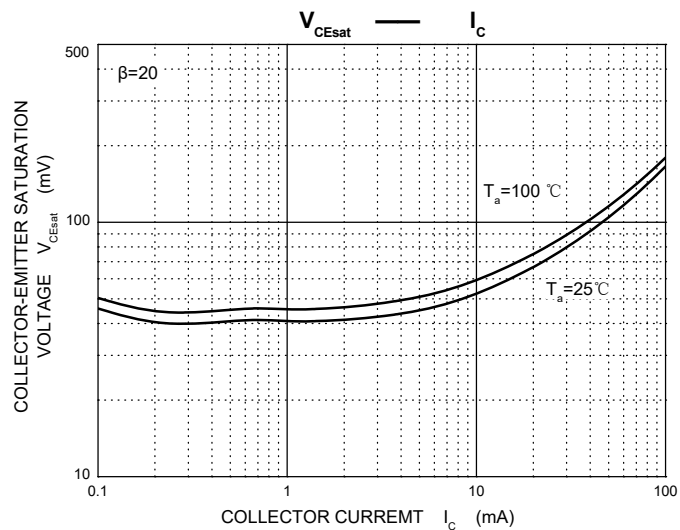
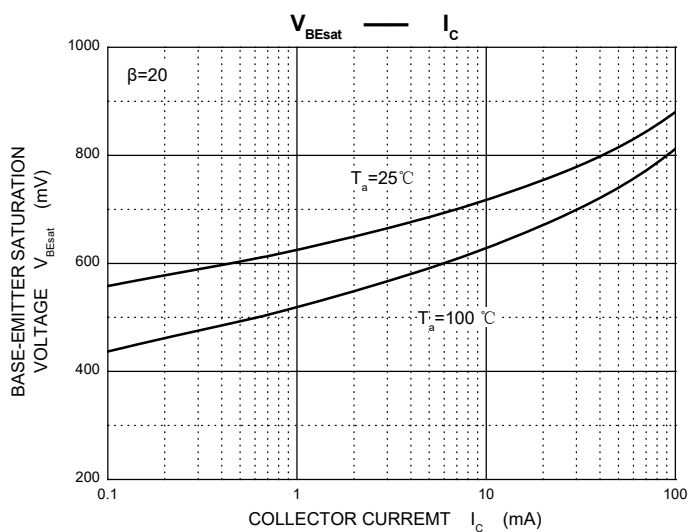


### Electrical Characteristics(Ta=25°C unless otherwise specified)

| Symbol        | Parameter                            | Test conditions                | Min | Max | Unit |
|---------------|--------------------------------------|--------------------------------|-----|-----|------|
| $V_{(BR)CBO}$ | Collector-base breakdown voltage     | $I_C=10\mu A, I_E=0$           | 30  |     | V    |
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C=10mA, I_B=0$              | 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            | $V_{CB}=30V, I_E=0$            |     | 100 | nA   |
| $I_{EBO}$     | Emitter cut-off current              | $V_{EB}=5V, I_C=0$             |     | 100 | nA   |
| $h_{FE}$      | DC current gain                      | $V_{CE}=5V, I_C=2mA$           | 200 | 450 |      |
| $V_{CE(sat)}$ | 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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