

NPN General Purpose Transistor

BC848BW / BC848B / BC848C

●Features

- 1) V_{CE0} minimum is 30V ($I_C=1mA$)
- 2) Complements the BC858B / BC858BW.

●Package, marking and packaging specifications

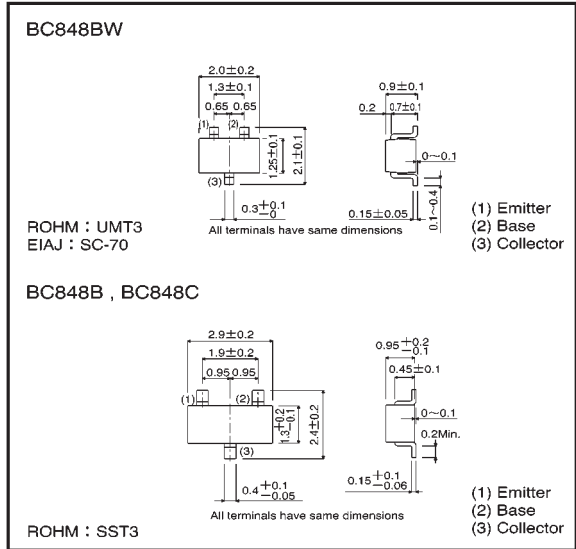
| Part No. | BC848BW | BC848B | BC848C |
|------------------------------|---------|--------|--------|
| Packaging type | UMT3 | SST3 | SST3 |
| Marking | G1K | G1K | G1L |
| Code | T106 | T116 | T116 |
| Basic ordering unit (pieces) | 3000 | 3000 | 3000 |

●Absolute maximum ratings ($T_a=25^{\circ}C$)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|-----------|-----------------|-------------|
| Collector-base voltage | V_{CBO} | 30 | V |
| Collector-emitter voltage | V_{CEO} | 30 | V |
| Emitter-base voltage | V_{EB0} | 5 | V |
| Collector current | I_C | 0.1 | A |
| Collector power dissipation | P_C | 0.2 | W |
| | | 0.35 | |
| Junction temperature | T_J | 150 | $^{\circ}C$ |
| Storage temperature | T_{stg} | $-55 \sim +150$ | $^{\circ}C$ |

* When mounted on a 7 x 5 x 0.6 mm ceramic board.

●External dimensions (Units : mm)



●Electrical characteristics ($T_a=25^{\circ}C$)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|------|---------|----------------------------------|
| Collector-base breakdown voltage | BV_{CBO} | 30 | — | — | V | $I_C=50 \mu A$ |
| Collector-emitter breakdown voltage | BV_{CEO} | 30 | — | — | V | $I_C=1mA$ |
| Emitter-base breakdown voltage | BV_{EB0} | 5 | — | — | V | $I_E=50 \mu A$ |
| Collector cutoff current | I_{CBO} | — | — | 15 | μA | $V_{CB}=30V$ |
| | | — | — | 5 | | $V_{CB}=30V, T_a=150^{\circ}C$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | — | 0.25 | V | $I_C/I_E=10mA/0.5mA$ |
| | | — | — | 0.6 | | $I_C/I_E=100mA/5mA$ |
| Base-emitter saturation voltage | $V_{BE(on)}$ | 0.58 | — | 0.77 | V | $V_{CE}/I_C=5V/10mA$ |
| DC current transfer ratio | h_{FE} | 200 | — | 450 | — | $V_{CE}/I_C=5V/2mA$ (BC848B/BW) |
| | | 420 | — | 800 | | $V_{CE}/I_C=5V/2mA$ (BC848C) |
| Transition frequency | f_T | — | 200 | — | MHz | $V_{CE}=5V, I_E=-20mA, f=100MHz$ |
| Collector output capacitance | C_{ob} | — | 3 | — | pF | $V_{CB}=10V, I_E=0, f=1MHz$ |
| Collector output capacitance | C_{ib} | — | 8 | — | pF | $V_{EB}=0.5V, I_E=0, f=1MHz$ |

(SPEC-C22)

●Electrical characteristic curves

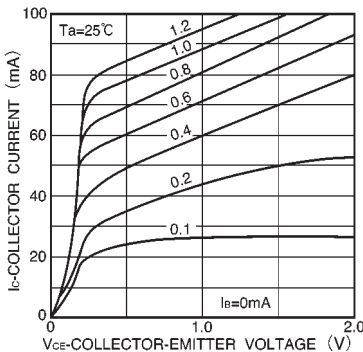


Fig.1 Grounded emitter output characteristics (I)

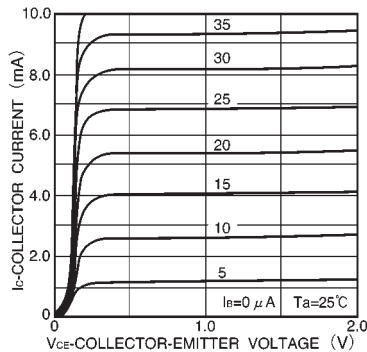


Fig.2 Grounded emitter output characteristics (II)

(SPEC-C22)

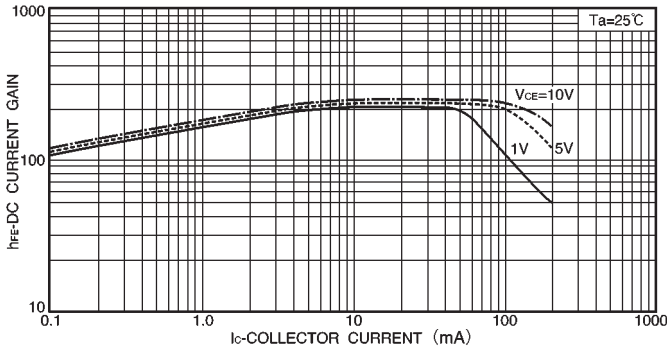


Fig.3 DC current gain vs. collector current (I)

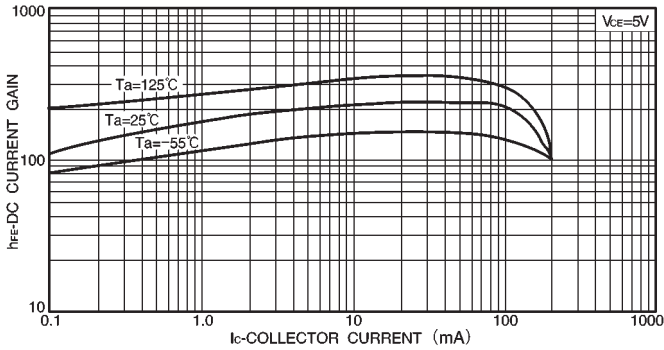


Fig.4 DC current gain vs. collector current (II)

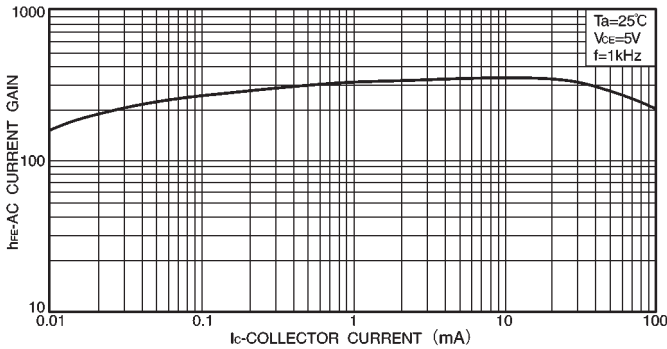


Fig.5 AC current gain vs. collector current

●Electrical characteristic curves

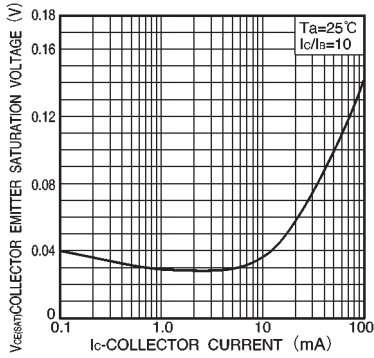


Fig.6 Collector-emitter saturation voltage vs. collector current

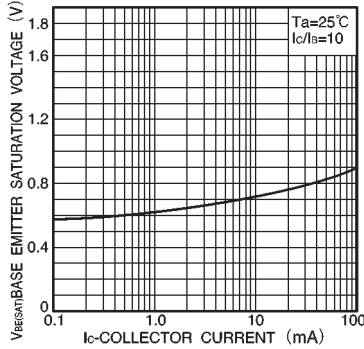


Fig.7 Base-emitter saturation voltage vs. collector current

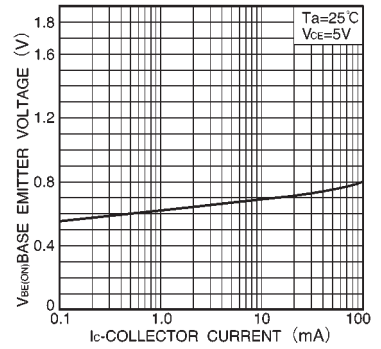


Fig.8 Grounded emitter propagation characteristics

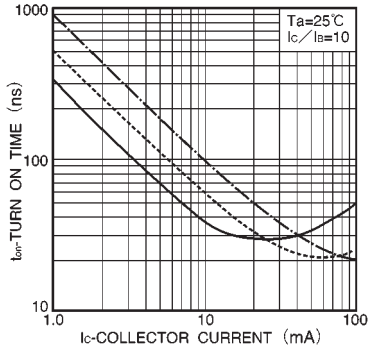


Fig.9 Turn-on time vs. collector current

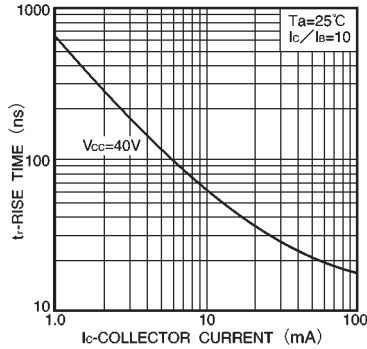


Fig.10 Rise time vs. collector current

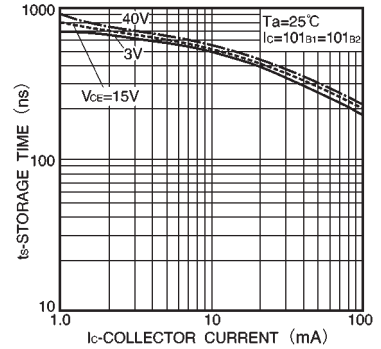


Fig.11 Storage time vs. collector current

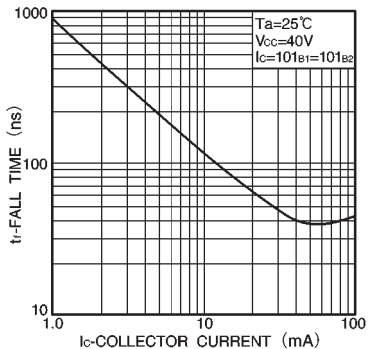


Fig.12 Fall time vs. collector current

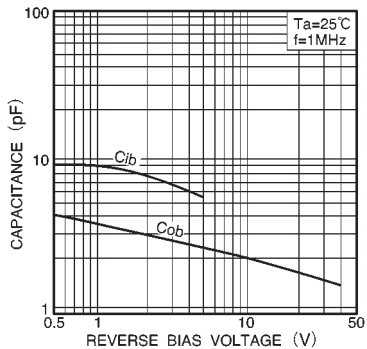


Fig.13 Input/output capacitance vs. voltage

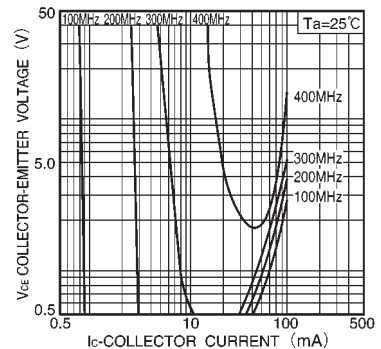


Fig.14 Gain bandwidth product

●Electrical characteristic curves

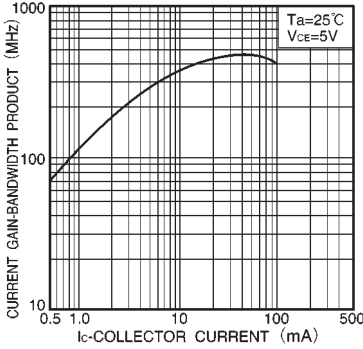


Fig.15 Gain bandwidth product vs. collector current

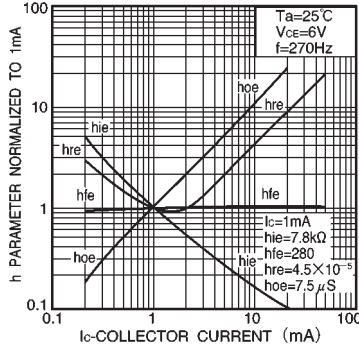


Fig.16 h parameter vs. collector current

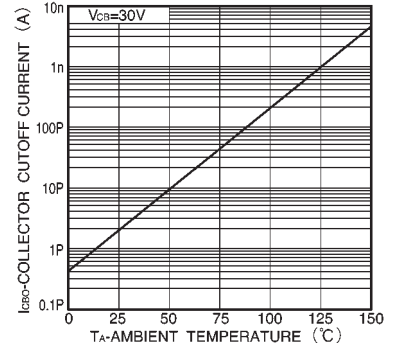


Fig.17 Collector cutoff current

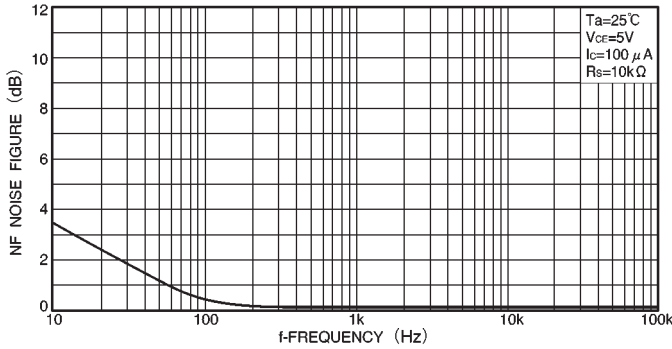


Fig.18 Noise vs. collector current

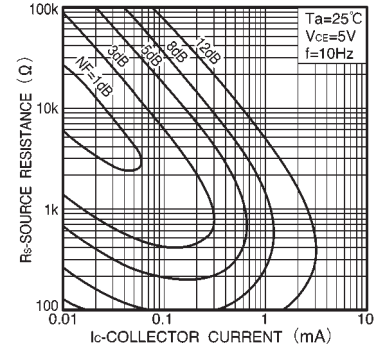


Fig.19 Noise characteristics (I)

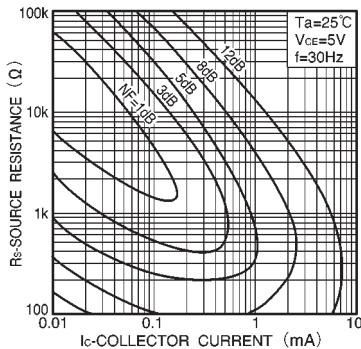


Fig.20 Noise characteristics (II)

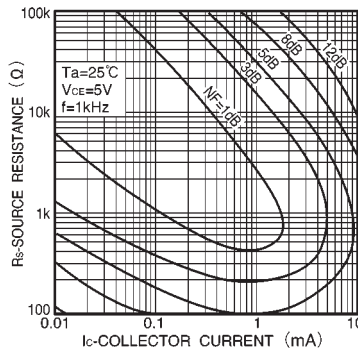


Fig.21 Noise characteristics (III)

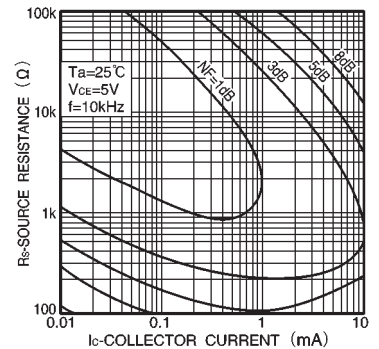


Fig.22 Noise characteristics (IV)