

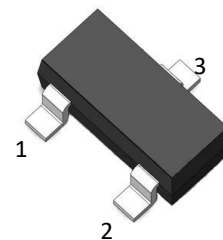
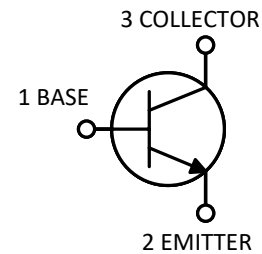
»Features

$V_{CE} = 45V$

$I_C = 0.5A$

$f_T = 100MHz @V_{CE}=5V, I_C=10mA, f=100MHz$

»Pin Configurations



»General Description

- Epitaxial planar die construction
- SOT-23 Plastic Package.

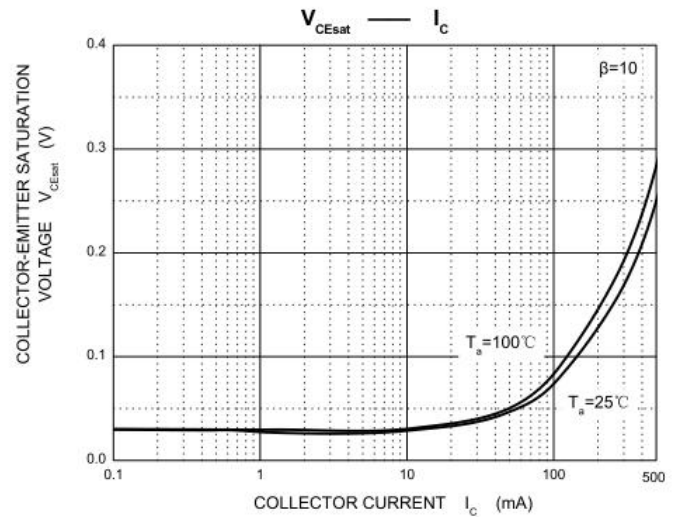
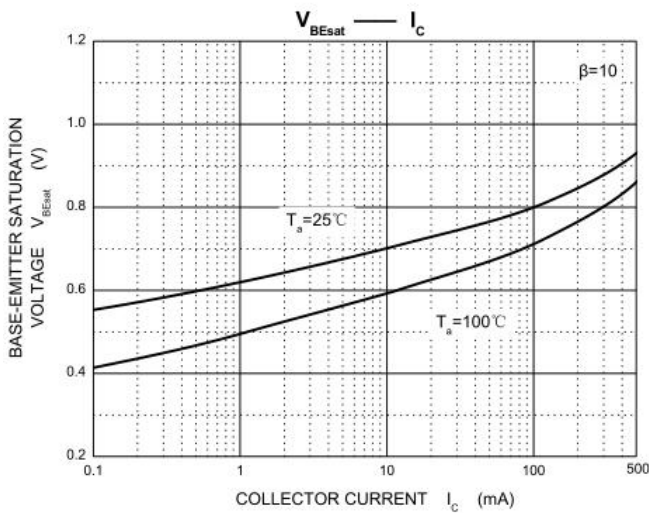
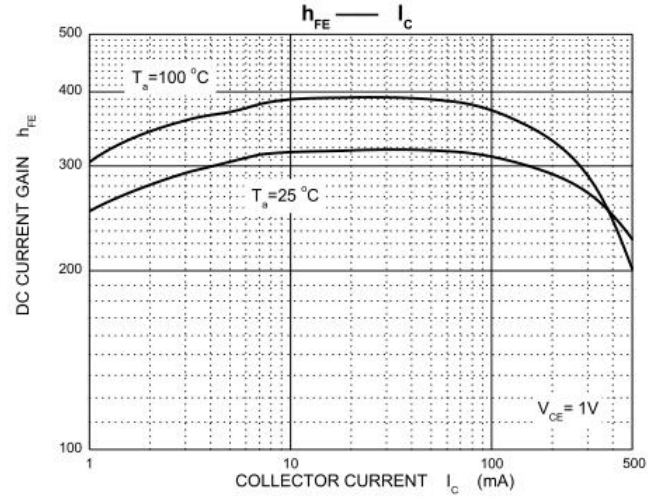
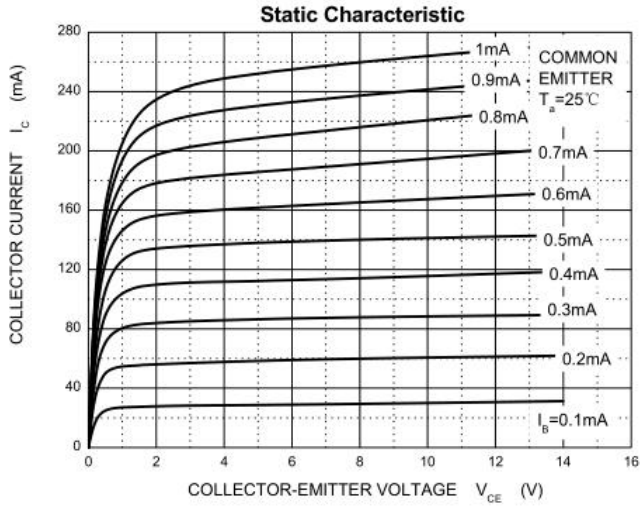
»Absolute Maximum Ratings @ $T_A=25^{\circ}C$  unless otherwise noted

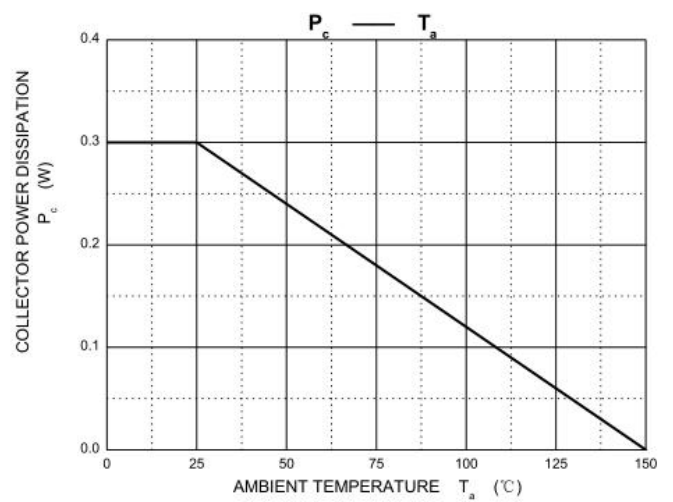
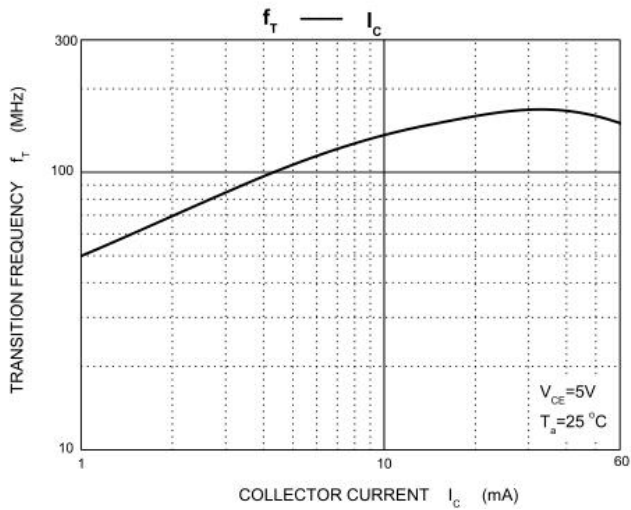
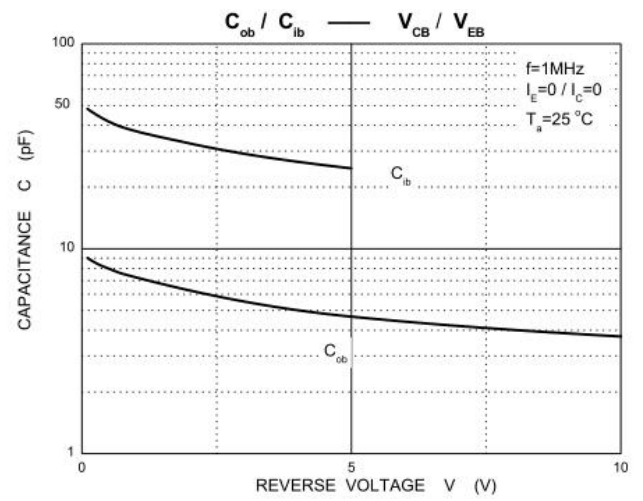
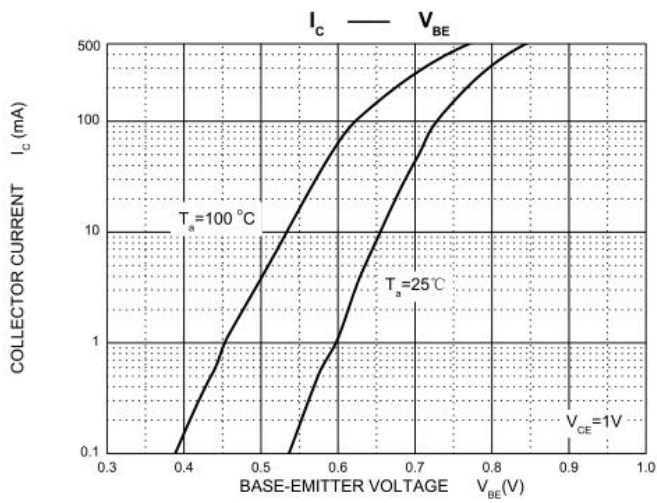
| Symbol          | Parameter  | Value    | Unit          |
|-----------------|--|----------|---------------|
| $V_{CB0}$       | Collector-Base Voltage                           | 50       | V             |
| $V_{CEO}$       | Collector-Emitter Voltage                        | 45       | V             |
| $V_{EBO}$       | Emitter-Base Voltage                             | 5        | V             |
| $I_C$           | Collector Current                                | 0.5      | A             |
| $P_C$           | Collector Power Dissipation                      | 300      | mW            |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 400      | $^{\circ}C/W$ |
| $T_J, T_{stg}$  | Operation Junction And Storage Temperature Range | -55~+150 | $^{\circ}C$   |

»Electrical Characteristics @ $T_A=25^{\circ}C$  unless otherwise noted

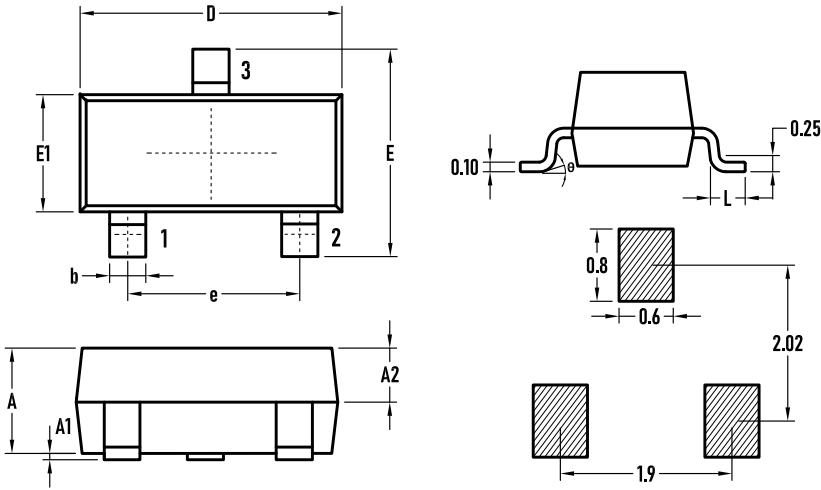
| Symbol        | Parameter                            | Test conditions                 | Min | Typ | Max | Unit |
|---------------|--------------------------------------|---------------------------------|-----|-----|-----|------|
| $V_{(BR)CB0}$ | Collector-base breakdown voltage     | $I_C=10\mu A, I_E=0$            | 50  |     |     | V    |
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C=10mA, I_B=0$               | 45  |     |     | V    |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage       | $I_E=1\mu A, I_C=0$             | 5   |     |     | V    |
| $I_{CBO}$     | Collector cut-off current            | $V_{CB}=45V, I_E=0$             |     |     | 100 | nA   |
| $I_{EBO}$     | Emitter cut-off current              | $V_{EB}=4V, I_C=0$              |     |     | 100 | nA   |
| $h_{FE(1)}$   | DC current gain(1)                   | $V_{CE}=1V, I_C=100mA$          | 100 |     | 600 |      |
| $h_{FE(2)}$   | DC current gain(2)                   | $V_{CE}=1V, I_C=500mA$          | 40  |     |     |      |
| $V_{CE(sat)}$ | Collector-emitter saturation voltage | $I_C=500mA, I_B=50mA$           |     |     | 0.7 | V    |
| $V_{BE(sat)}$ | Base-emitter saturation voltage      |                                 |     |     | 1.2 | V    |
| $C_{ob}$      | Collector capacitance                | $V_{CB}=10V, f=1MHz$            |     | 10  |     | pF   |
| $f_T$         | Transition frequency                 | $V_{CE}=5V, I_C=10mA, f=100MHz$ | 100 |     |     | MHz  |

»Typical Performance Characteristics (( $T_J = 25\text{ }^\circ\text{C}$ , unless otherwise noted))





»Package Information-SOT23



| SYMBOL   | MILLIMETER |      |      |
|----------|------------|------|------|
|          | MIN.       | Typ  | MAX  |
| A        | 0.90       | 1.00 | 1.10 |
| A1       | 0.02       | 0.06 | 0.10 |
| A2       | –          | 0.60 | –    |
| D        | 2.85       | 2.90 | 2.95 |
| b        | 0.37       | 0.40 | 0.43 |
| E        | 2.35       | 2.40 | 2.45 |
| E1       | 1.25       | 1.30 | 1.35 |
| e        | 1.85       | 1.90 | 1.95 |
| L        | 0.35       | 0.40 | 0.48 |
| $\theta$ | 0          | –    | 6°   |

»Marking

| Part No. | BC817-16 | BC817-25 | BC817-40 |
|----------|----------|----------|----------|
| $h_{FE}$ | 100~250  | 160~400  | 250~600  |
| Marking  |          |          |          |

»Ordering information

| Order code | Package | Base qty | Deliverymode  |
|------------|---------|----------|---------------|
| BC817      | SOT-23  | 3K       | Tape and reel |

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