

NPN TRANSISTOR

FEATURES

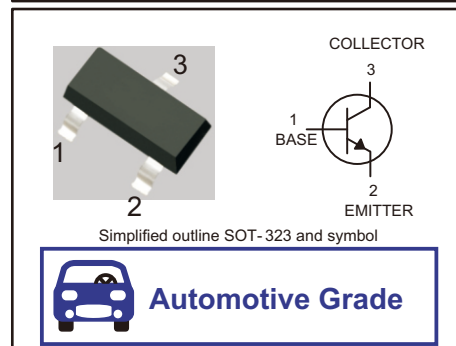
- Ideally suited for automatic insertion
- For switching and AF amplifier applications
- Qualified to AEC-Q101 Standards for High Reliability

CLASSIFICATION OF hFE(1)

| Rank | A | B | C |
|-------|---------|---------|---------|
| Range | 125-250 | 220-475 | 420-800 |

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | BASE |
| 2 | EMITTER |
| 3 | COLLECTOR |



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

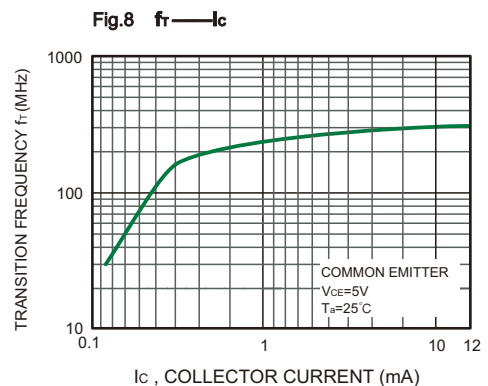
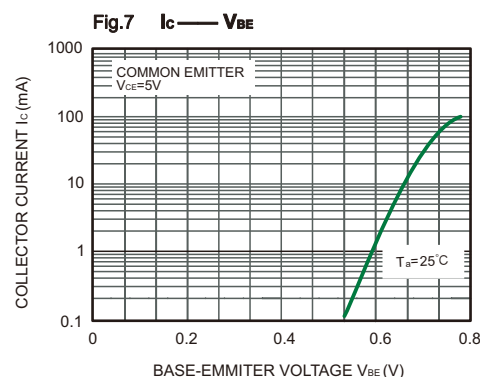
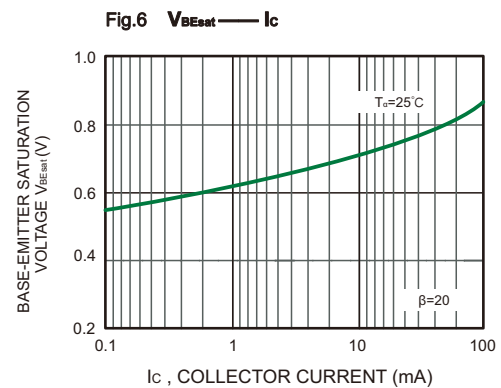
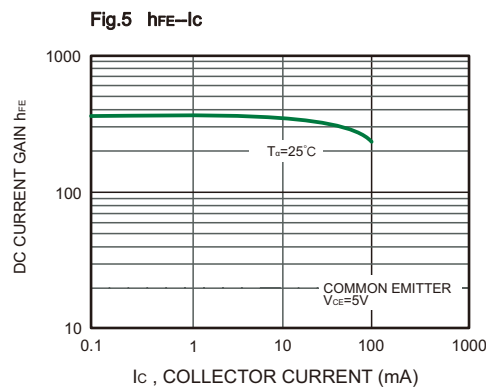
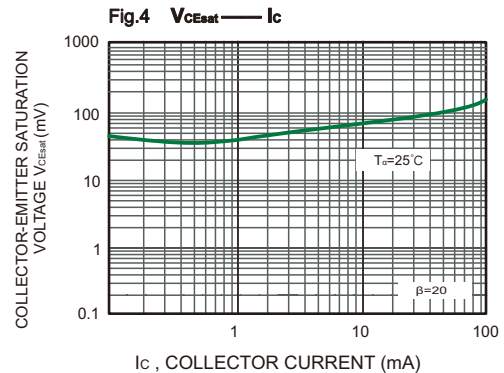
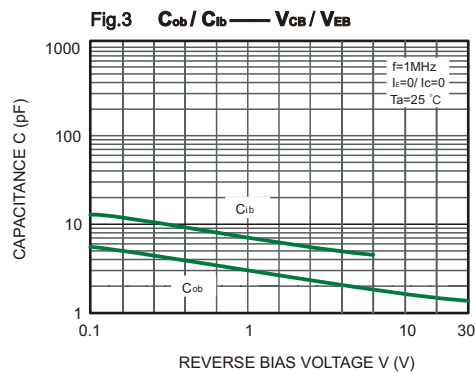
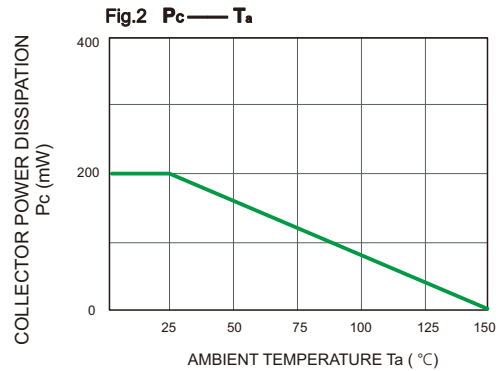
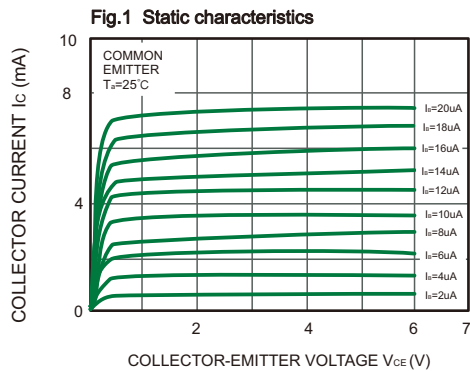
| Parameter | Symbol | Value | Unit |
|---|------------------|----------|------|
| Collector–Base Voltage | BC846 | 80 | V |
| | BC847 | 50 | |
| | BC848 | 30 | |
| Collector–Emitter Voltage | BC846 | 65 | V |
| | BC847 | 45 | |
| | BC848 | 30 | |
| Emitter–Base Voltage | V _{EBO} | 6 | V |
| Collector Current — Continuous | I _c | 100 | mA |
| Collector Power Dissipation | P _c | 200 | mW |
| Thermal Resistance From Junction To Ambient | R _{θJA} | 625 | °C/W |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature | T _{stg} | -55~+150 | °C |

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|---|-----|-----|-----|------|
| Collector-base breakdown voltage | BC846 | I _c = 10μA, I _E = 0 | 80 | | | V |
| | BC847 | | 50 | | | |
| | BC848 | | 30 | | | |
| Collector-emitter breakdown voltage | BC846 | I _c = 10mA, I _B = 0 | 65 | | | V |
| | BC847 | | 45 | | | |
| | BC848 | | 30 | | | |
| Emitter-base breakdown voltage | V _{EBO} | I _E = 10μA, I _c = 0 | 6 | | | V |
| Collector cut-off current | BC846 | V _{CB} = 70V, I _E = 0 V _{CB} = 50V, I _E = 0 V _{CB} = 30V, I _E = 0 | | | 0.1 | μA |
| | BC847 | | | | | |
| | BC848 | | | | | |
| Collector cut-off current | BC846 | V _{CE} = 60V, I _B = 0 V _{CE} = 45V, I _B = 0 V _{CE} = 30V, I _B = 0 | | | 0.1 | μA |
| | BC847 | | | | | |
| | BC848 | | | | | |
| Emitter cut-off current | I _{EBO} | V _{EB} = 5V, I _c = 0 | | | 0.1 | μA |
| DC current gain | h _{FE} | V _{CE} = 5V, I _c = 2mA | 125 | | 800 | |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _c = 100mA, I _B = 5mA | | | 0.5 | V |
| Base-emitter saturation voltage | V _{BE(sat)} | I _c = 100mA, I _B = 5mA | | | 1.1 | V |
| Transition frequency | f _T | V _{CE} = 5V, I _c = 10mA, f = 100MHz | 100 | | | MHz |
| Collector output capacitance | C _{ob} | V _{CB} = 10V, f = 1MHz | | | 4.5 | pF |

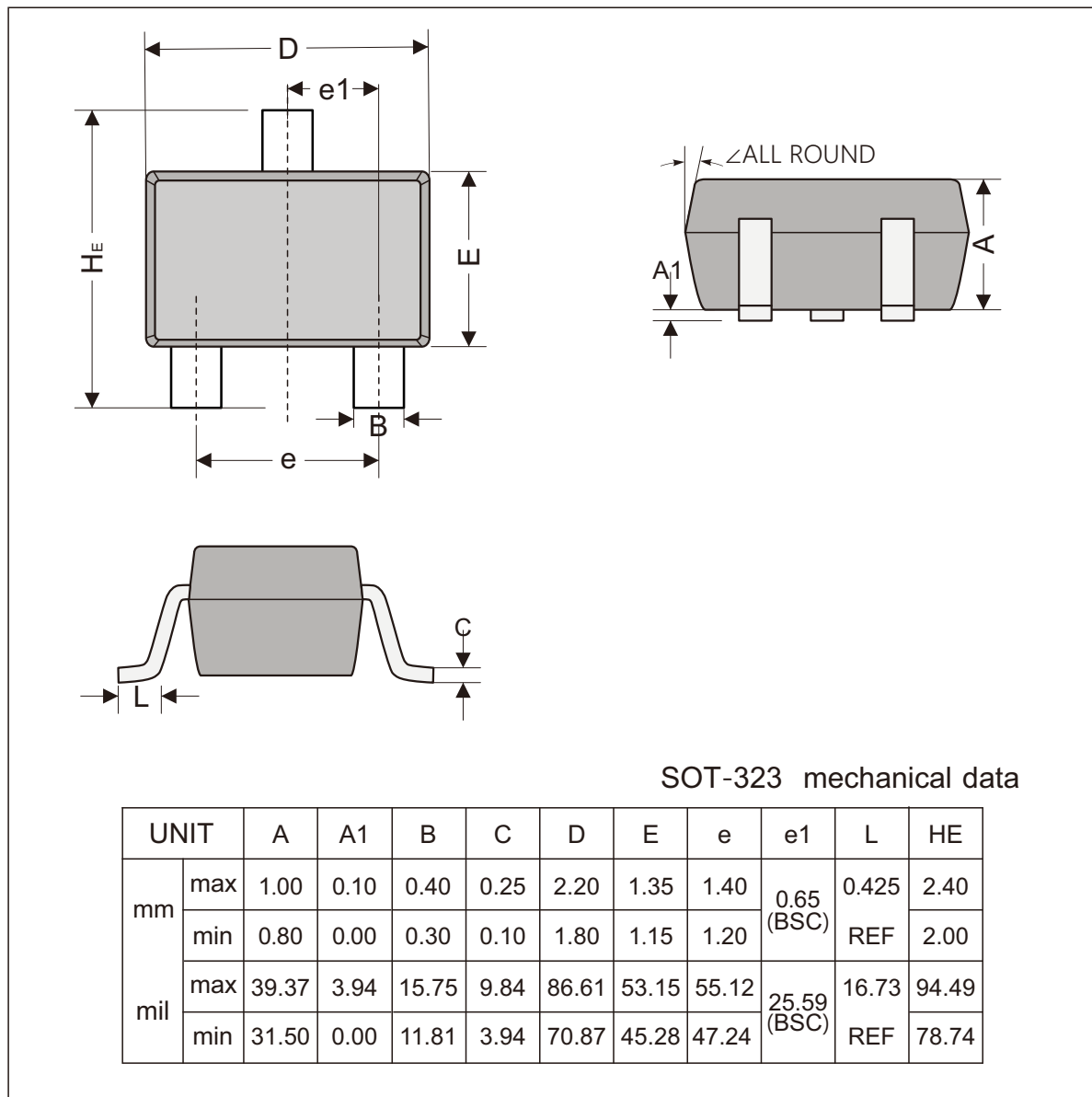


Typical Performance Characteristics

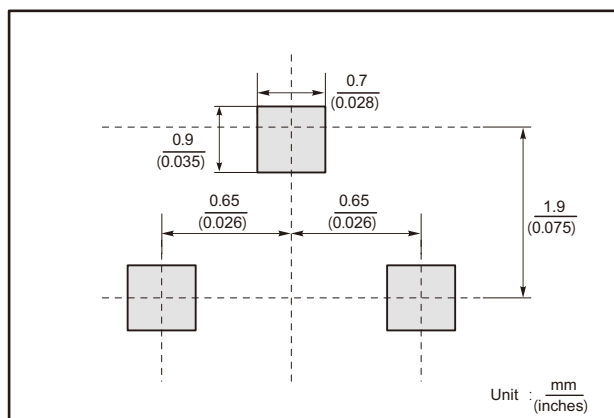




SOT-323 Package Outline Dimensions



The recommended mounting pad size



Marking

| Type number | Marking code |
|-------------|--------------|
| BC846WGA | 46A |
| BC846WGB | 46B |
| BC847WGA | 47A |
| BC847WGB | 47B |
| BC847WGC | 47C |
| BC848WGA | 48A |
| BC848WGB | 48B |
| BC848WGC | 48C |



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