

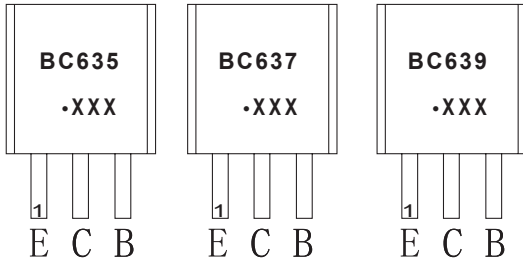
TO-92 Plastic-Encapsulate Transistors

BC635 / BC637 / BC639 TRANSISTOR (NPN)

FEATURES

High current transistors

MARKING



BC635,BC637,BC639=Device code

Solid dot=Green molding compound device,
if none,the normal device

XXX=Code

ORDERING INFORMATION

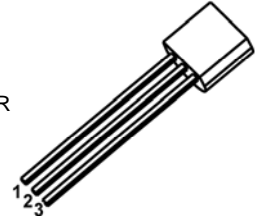
| Part Number | Package | Packing Method | Pack Quantity |
|-------------|---------|----------------|---------------|
| BC635 | TO-92 | Bulk | 1000pcs/Bag |
| BC635-TA | TO-92 | Tape | 2000pcs/Box |
| BC637 | TO-92 | Bulk | 1000pcs/Bag |
| BC637-TA | TO-92 | Tape | 2000pcs/Box |
| BC639 | TO-92 | Bulk | 1000pcs/Bag |
| BC639-TA | TO-92 | Tape | 2000pcs/Box |

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

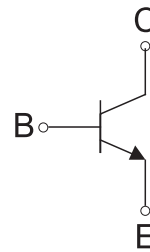
| Symbol | Parameter | Value | Unit |
|----------------------------------|--|----------|------|
| V _{CB0} | Collector-Emitter Voltage | BC635 | 45 |
| | | BC637 | 60 |
| | | BC639 | 100 |
| V _{CE0} | Collector-Emitter Voltage | BC635 | 45 |
| | | BC637 | 60 |
| | | BC639 | 80 |
| V _{EB0} | Emitter-Base Voltage | 5 | V |
| I _c | Collector Current -Continuous | 1 | A |
| P _c | Collector Power Dissipation | 0.83 | W |
| T _J ,T _{stg} | Operation Junction and Storage Temperature Range | -55~+150 | °C |

TO-92

1. EMITTER
2. COLLECTOR
3. BASE



Equivalent Circuit

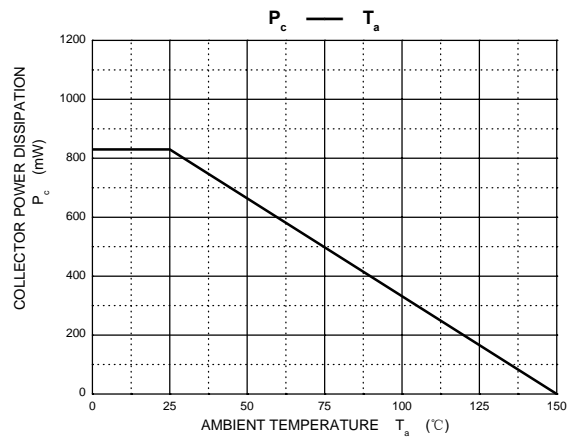
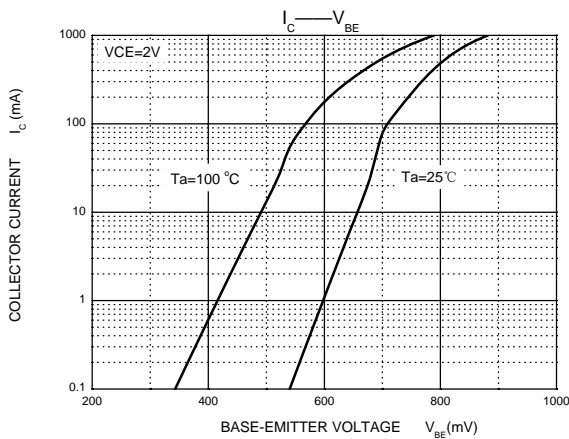
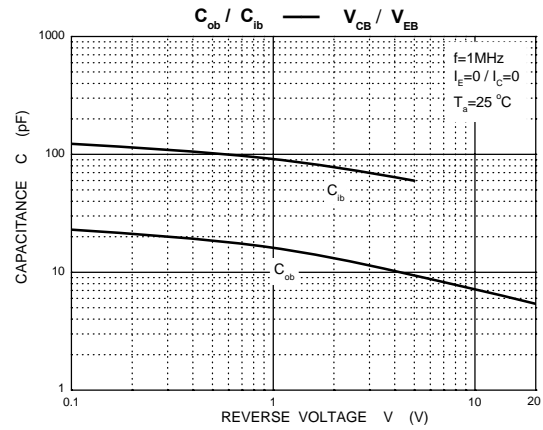
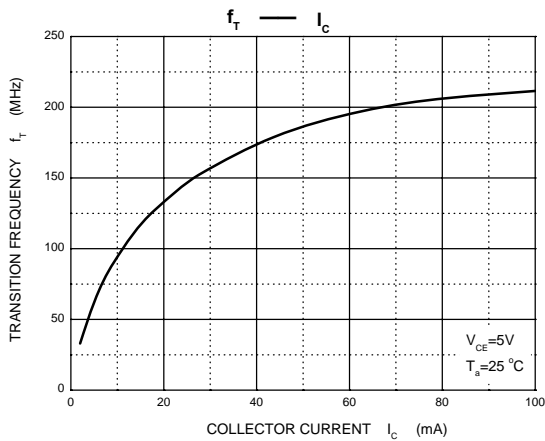
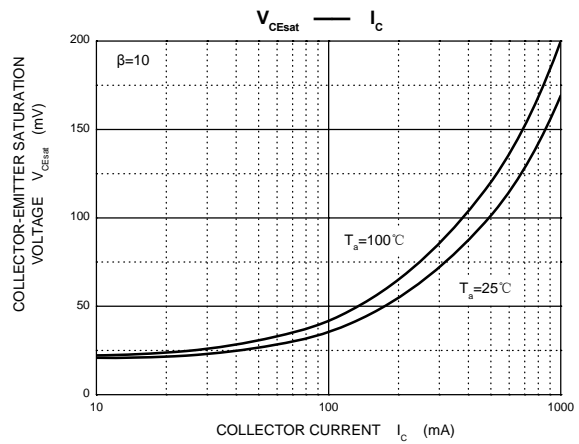
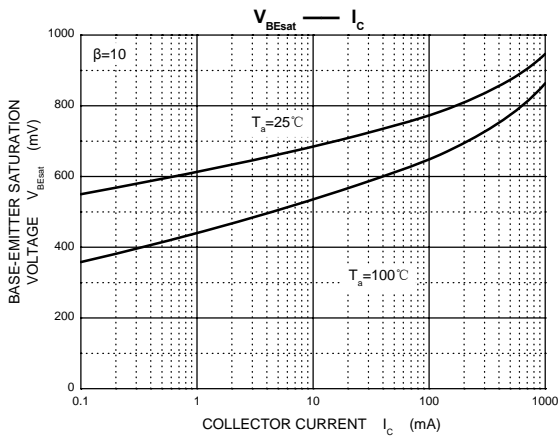
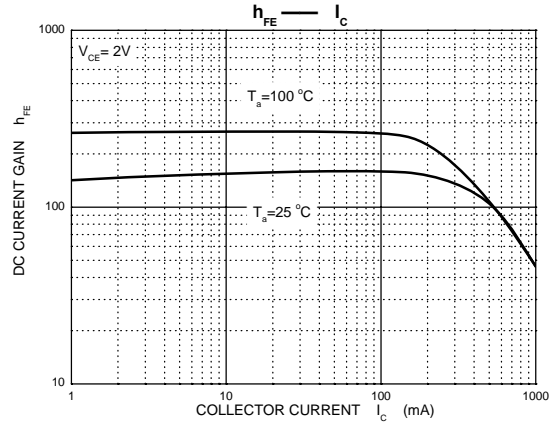
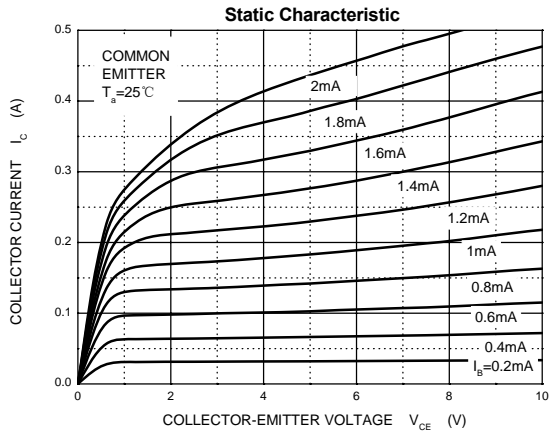


ELECTRICAL CHARACTERISTICS

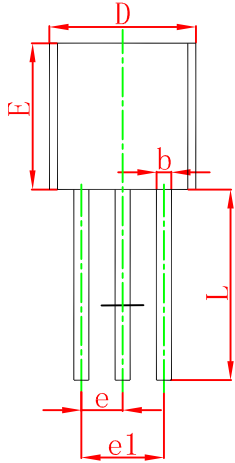
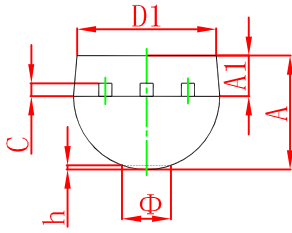
$T_a=25^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=10\text{mA}, I_B=0$ BC635 | 45 | | | V |
| | | BC637 | 60 | | | V |
| | | BC639 | 80 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=30\text{V}, I_E=0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5\text{V}, I_B=0$ | | | 0.1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=2\text{V}, I_C=5\text{mA}$ | 25 | | | |
| | $h_{FE(2)}$ | $V_{CE}=2\text{V}, I_C=150\text{mA}$ BC635 | 40 | | 250 | |
| | | BC637-10/BC639-10 | 63 | | 160 | |
| | | BC637-16/BC639-16 | 100 | | 250 | |
| | $h_{FE(3)}$ | $V_{CE}=2\text{V}, I_C=500\text{mA}$ | 25 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 0.5 | V |
| Base-emitter voltage | V_{BE} | $V_{CE}=2\text{V}, I_C=500\text{mA}$ | | | 1 | V |
| Transition frequency | f_T | $V_{CE}=5\text{V}, I_C=10\text{mA}, f=50\text{MHz}$ | | 100 | | MHz |

Typical Characteristics

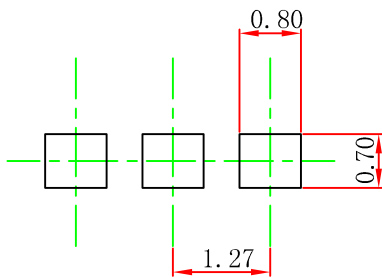


TO-92 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 3.300 | 3.700 | 0.130 | 0.146 |
| A1 | 1.100 | 1.400 | 0.043 | 0.055 |
| b | 0.380 | 0.550 | 0.015 | 0.022 |
| c | 0.360 | 0.510 | 0.014 | 0.020 |
| D | 4.300 | 4.700 | 0.169 | 0.185 |
| D1 | 3.430 | | 0.135 | |
| E | 4.300 | 4.700 | 0.169 | 0.185 |
| e | 1.270 TYP | | 0.050 TYP | |
| e1 | 2.440 | 2.640 | 0.096 | 0.104 |
| L | 14.100 | 14.500 | 0.555 | 0.571 |
| Φ | | 1.600 | | 0.063 |
| h | 0.000 | 0.380 | 0.000 | 0.015 |

TO-92 Suggested Pad Layout



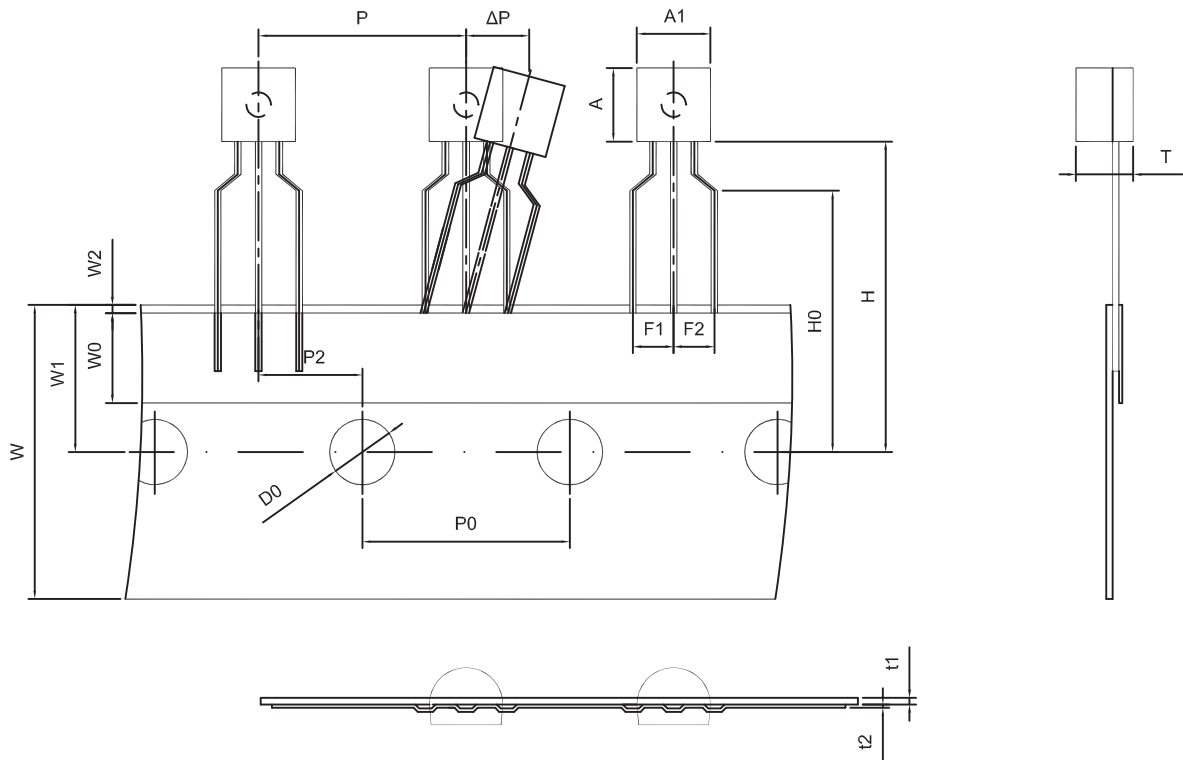
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

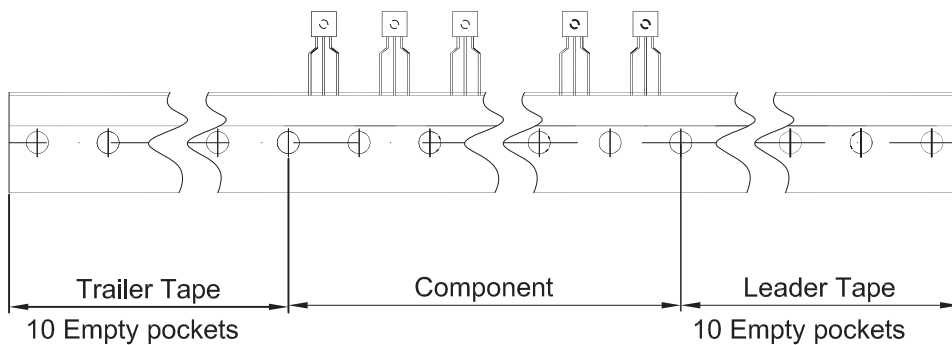
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TO-92 PACKAGE TAPING DIMENSION



Dimensions are in millimeter

| | | | | | | | | |
|-----|-----|----------|------|------|------|-----|-----|------|
| A1 | A | T | P | P0 | P2 | F1 | F2 | W |
| 4.5 | 4.5 | 3.5 | 12.7 | 12.7 | 6.35 | 2.5 | 2.5 | 18.0 |
| W0 | W1 | W2 | H | H0 | D0 | t1 | t2 | ΔP |
| 6.0 | 9.0 | 1.0 MAX. | 19.0 | 16.0 | 4.0 | 0.4 | 0.2 | 0 |



| | | | | |
|---------|----------|--------------|------------|-----------------|
| Package | Box | Box Size(mm) | Carton | Carton Size(mm) |
| TO-92 | 2000 pcs | 333×162×43 | 20,000 pcs | 350×340×250 |

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