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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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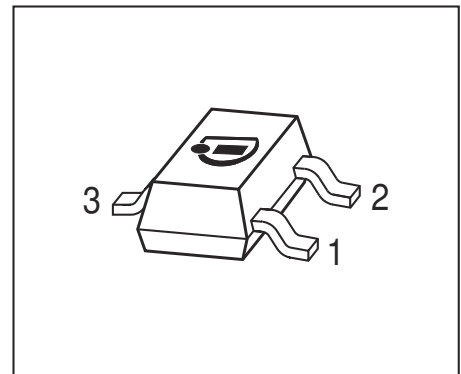
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NPN Silicon RF Transistor

- Especially suitable for TV-Sat and UHF tuners
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



ESD (Electrostatic discharge) sensitive device, observe handling precaution!

| Type | Marking | Pin Configuration | | | Package |
|-------|---------|-------------------|-------|-------|---------|
| BF775 | LOs | 1 = B | 2 = E | 3 = C | SOT23 |

Maximum Ratings

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------|------|
| Collector-emitter voltage | V_{CEO} | 15 | V |
| Collector-emitter voltage | V_{CES} | 20 | |
| Collector-base voltage | V_{CBO} | 20 | |
| Emitter-base voltage | V_{EBO} | 2.5 | |
| Collector current | I_C | 45 | mA |
| Base current | I_B | 4 | |
| Total power dissipation ²⁾ $T_S \leq 48^\circ\text{C}$ | P_{tot} | 280 | mW |
| Junction temperature | T_j | 150 | °C |
| Ambient temperature | T_A | -65 ... 150 | |
| Storage temperature | T_{stg} | -65 ... 150 | |

Thermal Resistance

| Parameter | Symbol | Value | Unit |
|--|------------|------------|------|
| Junction - soldering point ³⁾ | R_{thJS} | ≤ 365 | K/W |

¹Pb-containing package may be available upon special request

² T_S is measured on the collector lead at the soldering point to the pcb

³For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

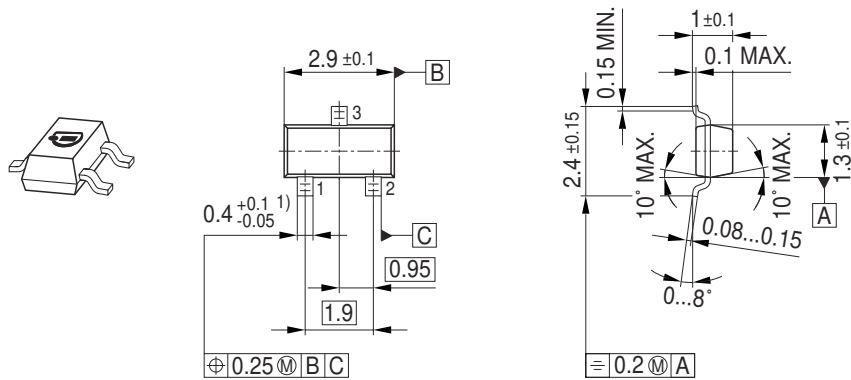
| Parameter | Symbol | Values | | | Unit |
|---|---------------|--------|------|------|---------------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Collector-emitter breakdown voltage $I_C = 1 \text{ mA}, I_B = 0$ | $V_{(BR)CEO}$ | 15 | - | - | V |
| Collector-emitter cutoff current $V_{CE} = 20 \text{ V}, V_{BE} = 0$ | I_{CES} | - | - | 10 | μA |
| Collector-base cutoff current $V_{CB} = 10 \text{ V}, I_E = 0$ | I_{CBO} | - | - | 100 | nA |
| Emitter-base cutoff current $V_{EB} = 2.5 \text{ V}, I_C = 0$ | I_{EBO} | - | - | 100 | μA |
| DC current gain- $I_C = 15 \text{ mA}, V_{CE} = 8 \text{ V}, \text{ pulse measured}$ | h_{FE} | 70 | 100 | 140 | - |

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|---|---------------|--------|------|------|------|
| | | min. | typ. | max. | |
| AC Characteristics (verified by random sampling) | | | | | |
| Transition frequency $I_C = 15\text{ mA}$, $V_{CE} = 8\text{ V}$, $f = 500\text{ MHz}$ | f_T | 3.5 | 5 | - | GHz |
| Collector-base capacitance $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$, $V_{BE} = 0$, emitter grounded | C_{cb} | - | 0.39 | 0.55 | pF |
| Collector emitter capacitance $V_{CE} = 10\text{ V}$, $f = 1\text{ MHz}$, $V_{BE} = 0$, base grounded | C_{ce} | - | 0.23 | - | |
| Emitter-base capacitance $V_{EB} = 0.5\text{ V}$, $f = 1\text{ MHz}$, $V_{CB} = 0$, collector grounded | C_{eb} | - | 0.64 | - | |
| Noise figure $I_C = 2\text{ mA}$, $V_{CE} = 6\text{ V}$, $Z_S = Z_{Sopt}$, $f = 900\text{ MHz}$ $f = 1.8\text{ GHz}$ | F | - | 1.4 | - | dB |
| | | - | 2 | - | |
| Power gain, maximum available ¹⁾ $I_C = 15\text{ mA}$, $V_{CE} = 8\text{ V}$, $Z_S = Z_{Sopt}$, $Z_L = Z_{Lopt}$, $f = 900\text{ MHz}$ $f = 1.8\text{ GHz}$ | G_{ma} | - | 16 | - | |
| | | - | 10.5 | - | |
| Transducer gain $I_C = 15\text{ mA}$, $V_{CE} = 8\text{ V}$, $Z_S = Z_L = 50\Omega$, $f = 900\text{ MHz}$ $f = 1.8\text{ GHz}$ | $ S_{21e} ^2$ | - | 13 | - | dB |
| | | - | 7.5 | - | |

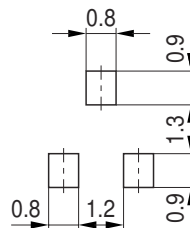
$$^1G_{ma} = |S_{21}/S_{12}| (k - (k^2 - 1)^{1/2})$$

Package Outline

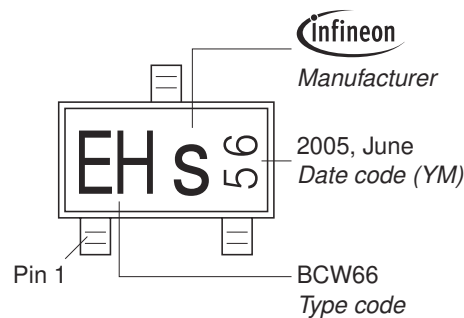


1) Lead width can be 0.6 max. in dambar area

Foot Print

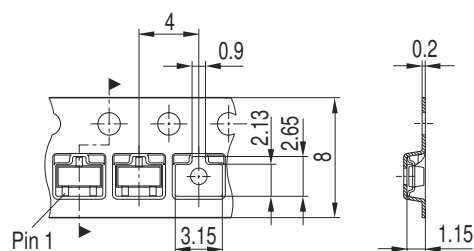


Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



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