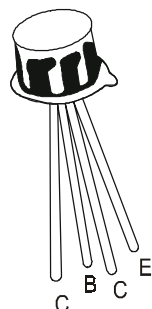


## NPN SILICON PLANAR RF TRANSISTOR

**BF115**



**TO-72  
Metal Can Package**

### ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)

| DESCRIPTION                                    | SYMBOL         | VALUE       | UNIT |
|------------------------------------------------|----------------|-------------|------|
| Collector Base Voltage                         | $V_{CBO}$      | 50          | V    |
| Collector Emitter Voltage                      | $V_{CEO}$      | 30          | V    |
| Emitter Base Voltage                           | $V_{EBO}$      | 5           | V    |
| Collector Current                              | $I_C$          | 30          | mA   |
| Base Current Continuous                        | $I_B$          | 1           | mA   |
| Total Power Dissipation @ Ta=45°C              | $P_D$          | 145         | mW   |
| Operating & Storage Junction Temperature Range | $T_j, T_{stg}$ | -55 to +175 | °C   |

### THERMAL RESISTANCE

|                     |               |     |      |
|---------------------|---------------|-----|------|
| Junction to Ambient | $R_{th(j-a)}$ | 900 | °C/W |
|---------------------|---------------|-----|------|

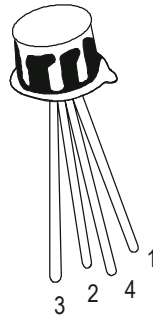
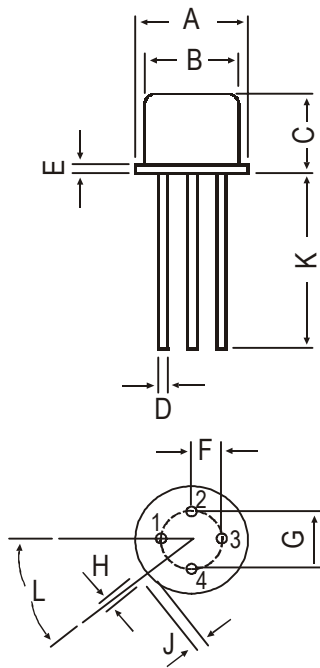
### ELECTRICAL CHARACTERISTICS (Ta=25° C unless specified otherwise )

| DESCRIPTION                         | SYMBOL       | TEST CONDITION                       | VALUE |     |      | UNIT    |
|-------------------------------------|--------------|--------------------------------------|-------|-----|------|---------|
|                                     |              |                                      | MIN   | TYP | MAX  |         |
| Collector Emitter Breakdown Voltage | $BV_{CEO}^*$ | $I_C=2mA, I_B=0$                     | 30    |     |      | V       |
| Collector Base Breakdown Voltage    | $BV_{CBO}$   | $I_C=10\mu A, I_E=0$                 | 50    |     |      | V       |
| Emitter Base Breakdown Voltage      | $BV_{EBO}$   | $I_E=10\mu A, I_C=0$                 | 5     |     |      | V       |
| Collector Cut off Current           | $I_{CBO}$    | $V_{CB}=20V, I_E=0, T_a=175^\circ C$ |       | 0.5 |      | $\mu A$ |
| DC Current Gain                     | $h_{FE}$     | $I_C=1mA, V_{CE}=10V$                | 48    |     | 167  |         |
|                                     |              | $I_C=20mA^*, V_{CE}=2V$              | 40    |     |      |         |
| Base Emitter On Voltage             | $V_{BE(on)}$ | $I_C=1mA, V_{CE}=10V$                | 600   | 700 | 740  | mV      |
|                                     |              | $I_C=20mA, V_{CE}=2V^*$              |       |     | 1000 | mV      |

### DYNAMIC CHARACTERISTICS

|                      |          |                                                 |  |      |     |     |
|----------------------|----------|-------------------------------------------------|--|------|-----|-----|
| Transition Frequency | $f_T$    | $I_C=1.0mA, V_{CE}=10V, f=100MHz$               |  | 230  |     | MHz |
| Feedback Capacitance | $C_{re}$ | $V_{CB}=10V, I_C=1mA, f=0.45MHz$                |  | 0.65 | 0.8 | pF  |
| Noise Figure         | NF       | $V_{CE}=10V, I_C=1mA, R_g=300K\Omega, f=200KHz$ |  | 1.5  |     | dB  |
|                      |          | $f=1MHz$                                        |  | 1.2  |     | dB  |

**Pulse Test: pulse Width  $\leq 300\mu S$ , Duty Cycle  $\leq 2\%$**

**TO-72**  
**Metal Can Package**
**TO-72 Metal Can Package**

**PIN CONFIGURATION**

1. EMITTER
2. BASE
3. COLLECTOR
4. CASE

All dimensions in mm.

| DIM | MIN.   | MAX.   |
|-----|--------|--------|
| A   | 5.24   | 5.84   |
| B   | 4.52   | 4.95   |
| C   | 4.31   | 5.33   |
| D   | 0.40   | 0.53   |
| E   | —      | 0.76   |
| F   | 1.14   | 1.39   |
| G   | 2.28   | 2.97   |
| H   | 0.91   | 1.17   |
| J   | 0.71   | 1.22   |
| K   | 12.70  | —      |
| L   | 12 DEG | 48 DEG |

**Packing Detail**

| PACKAGE | STANDARD PACK |                | INNER CARTON BOX |     | OUTER CARTON BOX  |     |        |
|---------|---------------|----------------|------------------|-----|-------------------|-----|--------|
|         | Details       | Net Weight/Qty | Size             | Qty | Size              | Qty | Gr Wt  |
| TO-72   | 1 K/Polybag   | 325 gm/1K pcs  | 3" x 7.5" x 7.5" | 5K  | 17" x 15" x 13.5" | 80K | 32 kgs |