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FAIRCHILD
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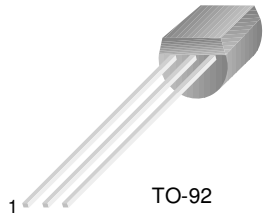
# BF240

## NPN RF Transistor




TO-92

1. Collector 2. Emitter 3. Base

## Absolute Maximum Ratings* $T_a$=25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CEO}$ | Collector-Emitter Voltage | 40 | V |
| $V_{CBO}$ | Collector-Base Voltage | 40 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 4.0 | V |
| $I_C$ | Collector Current - Continuous | 50 | mA |
| $T_J$, $T_{STG}$ | Operating and Storage Junction Temperature Range | - 55 ~ 150 | °C |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**NOTES:**
1) These ratings are based on a maximum junction temperature of 150 degrees C.
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

## Electrical Characteristics $T_a$=25°C unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|---|---|---|---|---|---|
| **Off Characteristics** | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage * | $I_C$ = 1.0mA, $I_B$ = 0 | 40 | | V |
| $V_{(BR)CBO}$ | Collector-Base BreakdownVoltage | $I_C$ = 100µA, $I_E$ = 0 | 40 | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$ = 10µA, $I_C$ = 0 | 4.0 | | V |
| $I_{CBO}$ | Collector Cut-off Current | $V_{CB}$ = 20V, $I_E$ = 0 | | 100 | nA |
| **On Characteristics** | | | | | |
| $h_{FE}$ | DC Current Gain | $I_C$ = 1mA, $V_{CE}$ = 10V | 65 | 225 | |
| $V_{CE}$(sat) | Collector-Emitter Saturation Voltage | $I_C$ = 1mA, $I_B$ = 0.1mA | | 0.65 | V |
| $V_{BE}$(sat) | Base-Emitter Saturation Voltage | $I_C$ = 1mA, $I_B$ = 0.1mA | | 0.74 | V |
| **Small Signal Characteristics** | | | | | |
| $f_T$ | Current gain Bandwidth Product | $I_C$ = 7.0mA, $V_{CE}$ = 10V, f = 100MHz | | 1100 | MHz |
| $C_{re}$ | Common-Emitter Ruerse Transfer Capacitance | $V_{CB}$ = 10V, $I_E$ = 0, f = 1.0MHz | | 0.34 | pF |

* Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 2.0%

## Thermal Characteristics $T_A$=25°C unless otherwise noted

| Symbol | Parameter | Max. | Units |
|---|---|---|---|
| $P_D$ | Total Device Dissipation<br>Derate above 25°C | 350<br>2.8 | mW<br>mW/°C |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 125 | °C/W |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 357 | °C/W |

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## Package Dimensions

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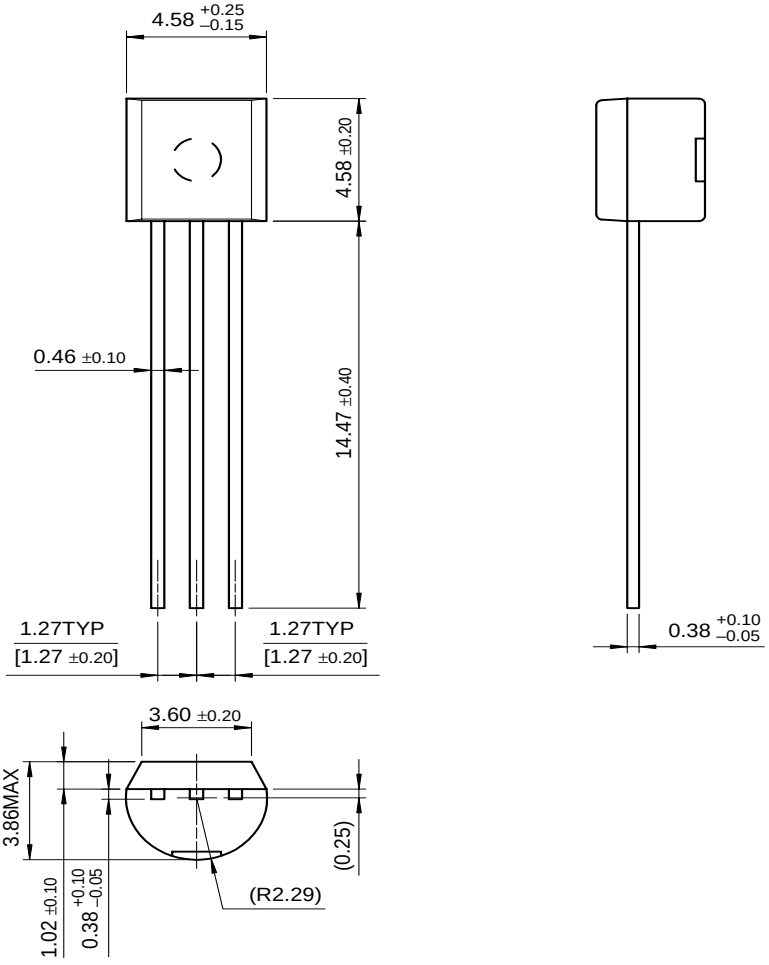


Dimensions in Millimeters

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