

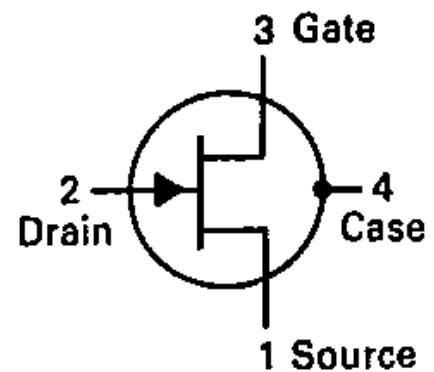
BFW10 – BFW11

N CHANNEL SILICON FETS

DESCRIPTION :

Symmetrical N-CHANNEL silicon planar epitaxial junction field-effect transistors in TO72 metal envelopes with the shield lead connected to the case. They are designed for broad band amplifiers (0 to 300 MHz).

Their very low frequencies makes these devices very suitable for differential amplifiers, electro-medical and nuclear detector preamplifiers.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Ratings | Value | Unit |
|------------|--|------------|-------------|
| V_{DS} | Drain-Source Voltage | 30 | V |
| $-V_{GSO}$ | Gate-Source Voltage (Open Drain) | 30 | V |
| V_{DGO} | Drain-Gate Voltage (Open Source) | 30 | V |
| I_{DS} | Drain Current | 20 | mA |
| I_G | Gate Current | 10 | mA |
| P_{tot} | Total Power Dissipation at $T_{amb} = 25^{\circ}C$ | 250 | mW |
| T_{stg} | Storage Temperature Range | -65 to 175 | $^{\circ}C$ |
| T_j | Junction Temperature | 175 | $^{\circ}C$ |

THERMAL CHARACTERISTICS

| Symbol | Ratings | Value | Unit |
|------------|--------------------------------------|-------|------|
| R_{thJA} | Thermal Resistance, junction-ambient | 590 | K/W |

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ELECTRICAL CHARACTERISTICS

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

| Symbol | Ratings | Test Condition(s) | | Min | Typ | Max | Unit |
|--------------|----------------------------|---|------------------------------|------|-----|-----|---------------|
| $-I_{GSS}$ | Gate Cutoff Current | $-V_{GS} = 20V$ $V_{DS} = 0$ | BFW10 | - | - | 0.1 | nA |
| | | | BFW11 | | | | |
| | | $-V_{GS} = 20V ; V_{DS} = 0$ $T_j = 150^\circ\text{C}$ | BFW10 | - | - | 0.5 | μA |
| | | | BFW11 | | | | |
| I_{DSS} | Drain Current | $V_{DS} = 15V$ $V_{GS} = 0$ | BFW10 | 8 | - | 20 | mA |
| | | | BFW11 | 4 | - | 10 | |
| $-V_{GS}$ | Gate Source Voltage | $V_{DS} = 15V$ | $I_D = 400\mu\text{A}$ BFW10 | 2 | - | 7.5 | V |
| | | | $I_D = 50\mu\text{A}$ BFW11 | 1.25 | - | 4 | |
| $-V_{(P)GS}$ | Gate Source Cutoff Voltage | $V_{DS} = 15V$ $I_D = 0.5\text{nA}$ | BFW10 | - | - | 8 | V |
| | | | BFW11 | - | - | 6 | |

SMALL SIGNAL CHARACTERISTICS

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

| Symbol | Ratings | Test Condition(s) | | Min | Typ | Mx | Unit |
|-----------|----------------------|---|-------|-----|-----|-----|------|
| Y_{fs} | Transfer admittance | $V_{DS} = 15V$ $V_{GS} = 0$ $f = 1\text{kHz}$ | BFW10 | 3.5 | - | 6.5 | mS |
| | | | BFW11 | 3 | - | 6.5 | |
| | | $V_{DS} = 15V$ $V_{GS} = 0$ $f = 200\text{MHz}$ | BFW10 | 3.2 | - | - | |
| | | | BFW11 | | | | |
| Y_{os} | Output admittance | $V_{DS} = 15V$ $V_{GS} = 0$ $f = 1\text{MHz}$ | BFW10 | - | - | 85 | |
| | | | BFW11 | - | - | 50 | |
| C_{is} | Input Capacitance | $V_{DS} = 15V$ $V_{GS} = 0$ $f = 1\text{MHz}$ | BFW10 | - | 4 | 5 | pF |
| | | | BFW11 | | | | |
| C_{rs} | Feedback Capacitance | $V_{DS} = 15V$ $V_{GS} = 0$ $f = 1\text{MHz}$ | BFW10 | - | | | |
| | | | BFW11 | | | | |
| NF | Noise Figure | $V_{DS} = 15V$ $V_{GS} = 0$ | BFW10 | - | - | 2.5 | dB |
| | | | BFW11 | | | | |

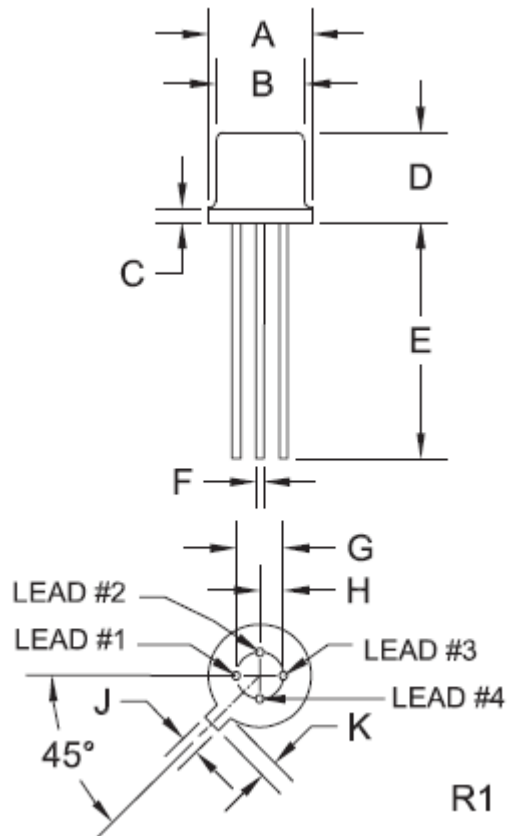


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MECHANICAL DATA CASE TO-72

| DIMENSIONS | | |
|------------|------|------|
| | mm | |
| | min | max |
| A | 5.31 | 5.84 |
| B | 4.45 | 4.95 |
| C | - | 0.76 |
| D | 4.32 | 5.33 |
| E | 12.7 | - |
| F | 0.41 | 0.48 |
| G | 2.54 | |
| H | 1.27 | |
| J | 0.91 | 1.17 |
| K | 0.71 | 1.22 |

| | |
|---------|-----------|
| Pin 1 : | Emitter |
| Pin 2 : | Base |
| Pin 3 : | Collector |
| Pin 4 : | Case |



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