# BF256A

**BF256A is a Preferred Device**

# JFET - General Purpose

## N–Channel

N–Channel Junction Field Effect Transistor designed for VHF and UHF applications.

- Low Cost TO–92 Type Package
- Forward Transfer Admittance, $Y_{fs}$ = 4.5 mmhos (Min)
- Transfer Capacitance – $C_{rss}$ = 0.7 (Typ)
- Power Gain at f = 800 MHz, Typ. = 11 dB

**MAXIMUM RATINGS**

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Drain–Source Voltage | $V_{DS}$ | 30 | Vdc |
| Drain–Gate Voltage | $V_{DG}$ | 30 | Vdc |
| Gate–Source Voltage | $V_{GS}$ | 30 | Vdc |
| Forward Gate Current | $I_{G(f)}$ | 10 | mAdc |
| Total Device Dissipation<br>@ $T_A$ = 25°C<br>Derate above 25°C | $P_D$ | <br>360<br>2.88 | <br>mW<br>mW/°C |
| Operating and Storage Channel Temperature Range | $T_{channel}$, $T_{stg}$ | –65 to +150 | °C |

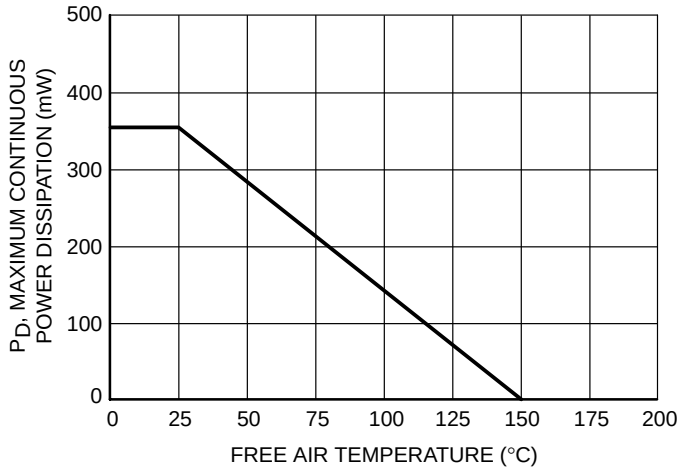
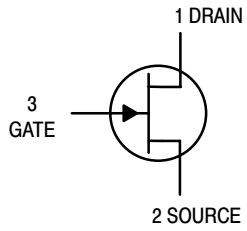
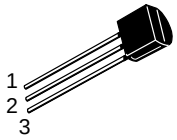



**Figure 1. Power Derating Curve**

**ON Semiconductor™**

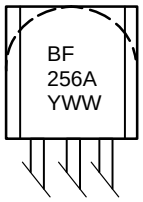
**http://onsemi.com**




**TO–92**
**CASE 29**
**STYLE 5**

**MARKING DIAGRAMS**




Y = Year
WW = Work Week

**ORDERING INFORMATION**

| Device | Package | Shipping |
|---|---|---|
| BF256A | TO–92 | 5000 Units/Box |

**Preferred** devices are recommended choices for future use and best overall value.

**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25°C unless otherwise noted)

| Characteristic | | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | | |
| Gate–Source Breakdown Voltage | ($-I_G$ = –1.0 μAdc, $V_{DS}$ = 0) | $-V_{(BR)GSS}$ | 30 | – | — | Vdc |
| Gate–Source Voltage | ($V_{DS}$ = 15 Vdc, $I_D$ = 200 μA) | $-V_{GS}$ | 0.5 | — | 7.5 | Vdc |
| Gate Reverse Current | ($-V_{GS}$ = 20 Vdc, $V_{DS}$ = 0) | $-I_{GSS}$ | — | — | 5.0 | nAdc |
| **ON CHARACTERISTICS** | | | | | | |
| Zero–Gate–Voltage Drain Current (Note 1.) | ($V_{DS}$ = 15 Vdc, $V_{GS}$ = 0) | $I_{DSS}$ | 3.0 | – | 7.0 | mAdc |
| **SMALL–SIGNAL CHARACTERISTICS** | | | | | | |
| Forward Transfer Admittance | ($V_{DS}$ = 15 Vdc, $V_{GS}$ = 0, f = 1 kHz) | $\|Y_{fs}\|$ | 4.5 | 5.0 | – | mmhos |
| Reverse Transfer Capacitance | ($V_{DS}$ = 20 Vdc, $-V_{GS}$ = 1 Vdc, f = 1 MHz) | $C_{rss}$ | – | 0.7 | – | pF |
| Output Capacitance | ($V_{DS}$ = 20 Vdc, $V_{GS}$ = 0, f = 1 MHz) | $C_{oss}$ | – | 1.0 | – | pF |
| Cut–Off Frequency (Note 2.) | ($V_{DS}$ = 15 Vdc, $V_{GS}$ = 0) | $f_{gfs}$ | – | 1000 | – | MHz |

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle = 2.0%.
2. The frequency at which gfs is 0.7 of its value at 1 KHz.

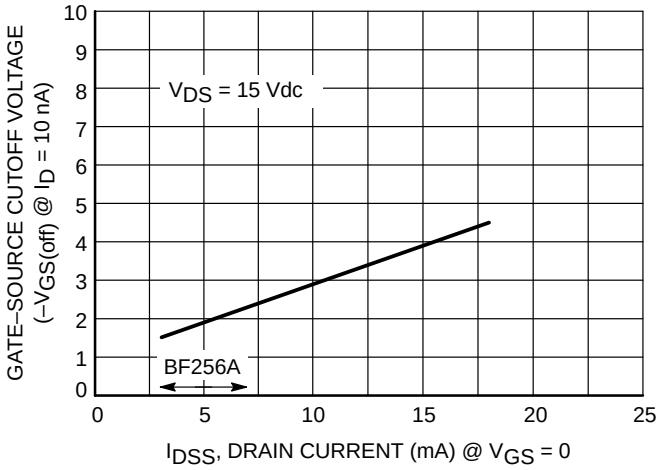



**Figure 2. Correlation Between $-V_{GS(off)}$ and $I_{DSS}$**

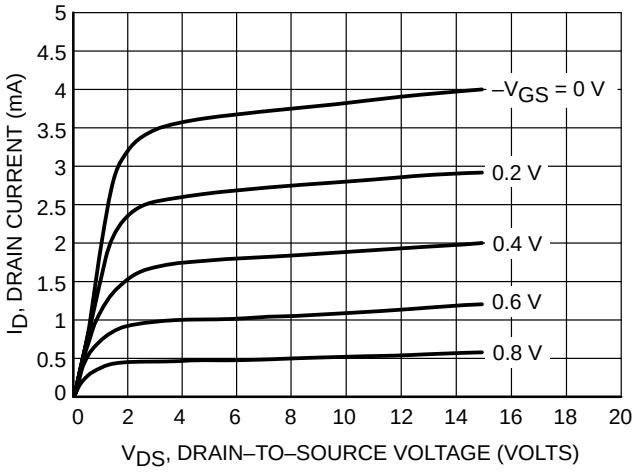



**Figure 3. Drain Current versus Drain–to–Source Voltage**

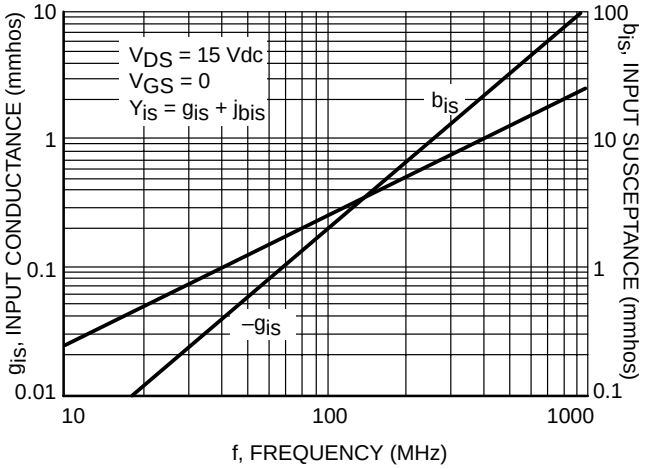



**Figure 4. Input Admittance versus Frequency**

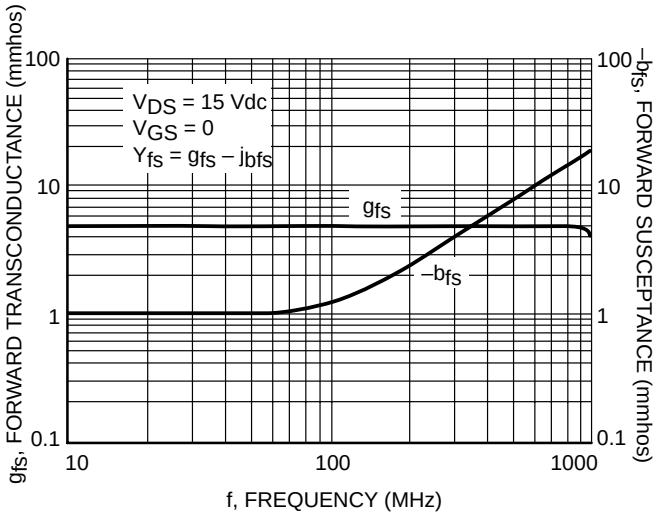



**Figure 5. Forward Transfer Admittance versus Frequency**

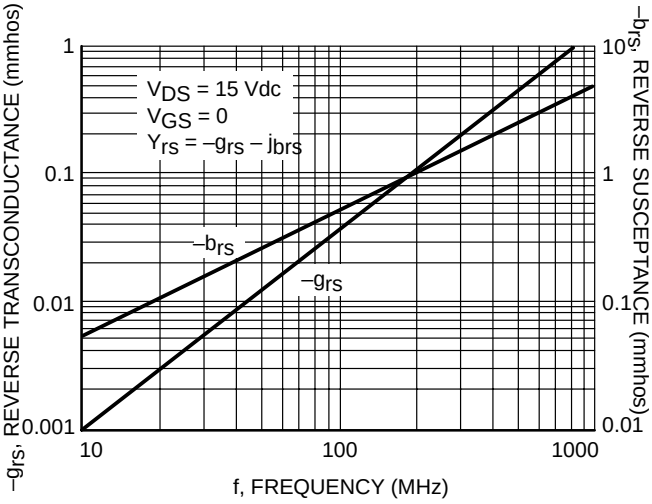



**Figure 6. Reverse Transfer Admittance versus Frequency**

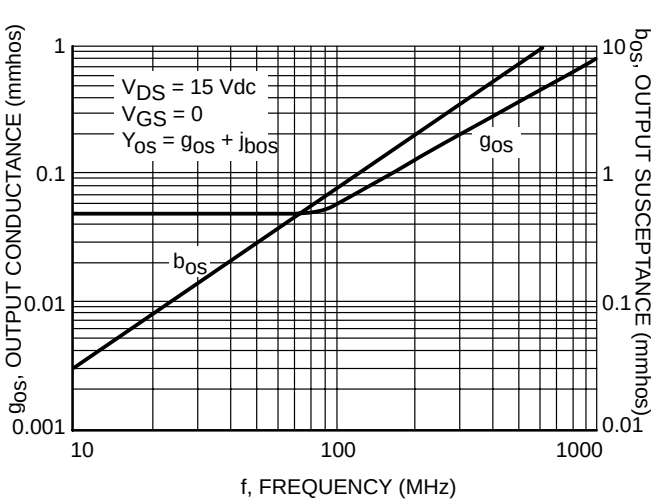



**Figure 7. Output Admittance versus Frequency**

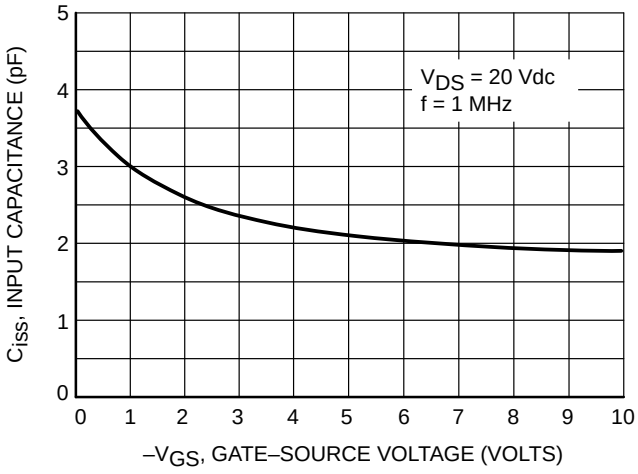



**Figure 8. Input Capacitance versus Gate–Source Voltage**

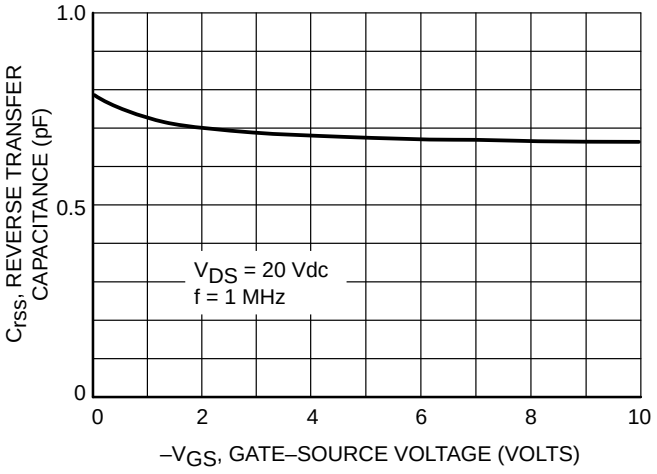
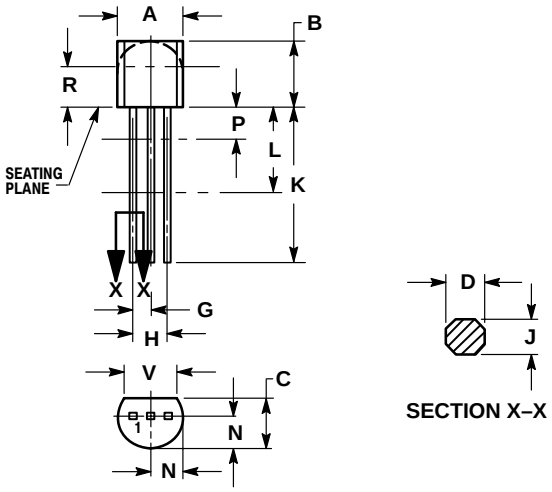



**Figure 9. Reverse Transfer Capacitance versus Gate–Source Voltage**

## PACKAGE DIMENSIONS

**TO–92 (TO–226)**
**CASE 29–11**
**ISSUE AL**




NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| DIM | MIN | MAX | MIN | MAX |
| A | 0.175 | 0.205 | 4.45 | 5.20 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.125 | 0.165 | 3.18 | 4.19 |
| D | 0.016 | 0.021 | 0.407 | 0.533 |
| G | 0.045 | 0.055 | 1.15 | 1.39 |
| H | 0.095 | 0.105 | 2.42 | 2.66 |
| J | 0.015 | 0.020 | 0.39 | 0.50 |
| K | 0.500 | --- | 12.70 | --- |
| L | 0.250 | --- | 6.35 | --- |
| N | 0.080 | 0.105 | 2.04 | 2.66 |
| P | --- | 0.100 | --- | 2.54 |
| R | 0.115 | --- | 2.93 | --- |
| V | 0.135 | --- | 3.43 | --- |



## PUBLICATION ORDERING INFORMATION

**Literature Fulfillment**:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
**Phone**: 303–675–2175 or 800–344–3860 Toll Free USA/Canada
**Fax**: 303–675–2176 or 800–344–3867 Toll Free USA/Canada
**Email**: ONlit@hibbertco.com

**N. American Technical Support**: 800–282–9855 Toll Free USA/Canada

**JAPAN**: ON Semiconductor, Japan Customer Focus Center
4–32–1 Nishi–Gotanda, Shinagawa–ku, Tokyo, Japan 141–0031
**Phone**: 81–3–5740–2700
**Email**: r14525@onsemi.com

**ON Semiconductor Website**: http://onsemi.com

For additional information, please contact your local Sales Representative.