

IF9034, IF9035 Dual N-Channel JFET

Features

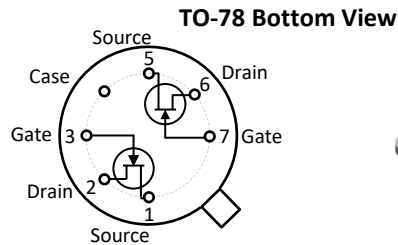
- InterFET [NO903L Geometry](#)
- Low Noise: 0.7 nV/√Hz Typical
- High Gain: 150mS Typical
- Low $R_{ds(on)}$: 6.0 Ohms Typical
- RoHS Compliant
- TH, and Bare Die Package options.

Applications

- Low-Noise, High Gain Amplifiers
- Differential Amplifiers
- Instrumentation Amplifiers
- Acoustic and Vibration Sensors
- Automotive Sensor Gain Stage

Description

The -20V InterFET IF9034 and IF9035 JFET is targeted for ultra low noise high gain differential amplifier designs. The IF903x has a cutoff voltage of less than 2.0V ideal for low voltage applications. The TO-78 package is hermetically sealed and suitable for military applications. Custom specifications, matching, and packaging options are available.



Product Summary

| Parameters | | IF9034,5 Min | Unit |
|---------------|------------------------------------|--------------|------|
| BV_{GS} | Gate to Source Breakdown Voltage | -20 | V |
| I_{DSS} | Drain to Source Saturation Current | 30 | mA |
| $V_{GS(off)}$ | Gate to Source Cutoff Voltage | -0.35 | V |
| G_{FS} | Forward Transconductance | 80 | mS |

Ordering Information Custom Part and Binning Options Available

| Part Number | Description | Case | Packaging |
|------------------------|--|-------|----------------|
| IF9034T78, IF9035T78 | Through-Hole | TO-78 | Bulk |
| IF9034COT; IF9035COT * | Chip Orientated Tray (COT Waffle Pack) | COT | 70/Waffle Pack |
| IF9034CFT; IF9035CFT * | Chip Face-up Tray (CFT Waffle Pack) | CFT | 70/Waffle Pack |

* Bare die packaged options are designed for matched specifications but not 100% tested



Disclaimer: It is the Buyers responsibility for designing, validating and testing the end application under all field use cases and extreme use conditions. Guaranteeing the application meets required standards, regulatory compliance, and all safety and security requirements is the responsibility of the Buyer. These resources are subject to change without notice.

Electrical Characteristics

Maximum Ratings (@ $T_A = 25^\circ\text{C}$, Unless otherwise specified)

| Parameters | Value | Unit |
|--|------------|----------------------|
| V_{RGS} Reverse Gate Source and Gate Drain Voltage | -20 | V |
| I_{FG} Continuous Forward Gate Current | 10 | mA |
| P_D Continuous Device Power Dissipation | 300 | mW |
| P Power Derating | 2.4 | mW/ $^\circ\text{C}$ |
| T_J Operating Junction Temperature | -55 to 125 | $^\circ\text{C}$ |
| T_{STG} Storage Temperature | -65 to 200 | $^\circ\text{C}$ |

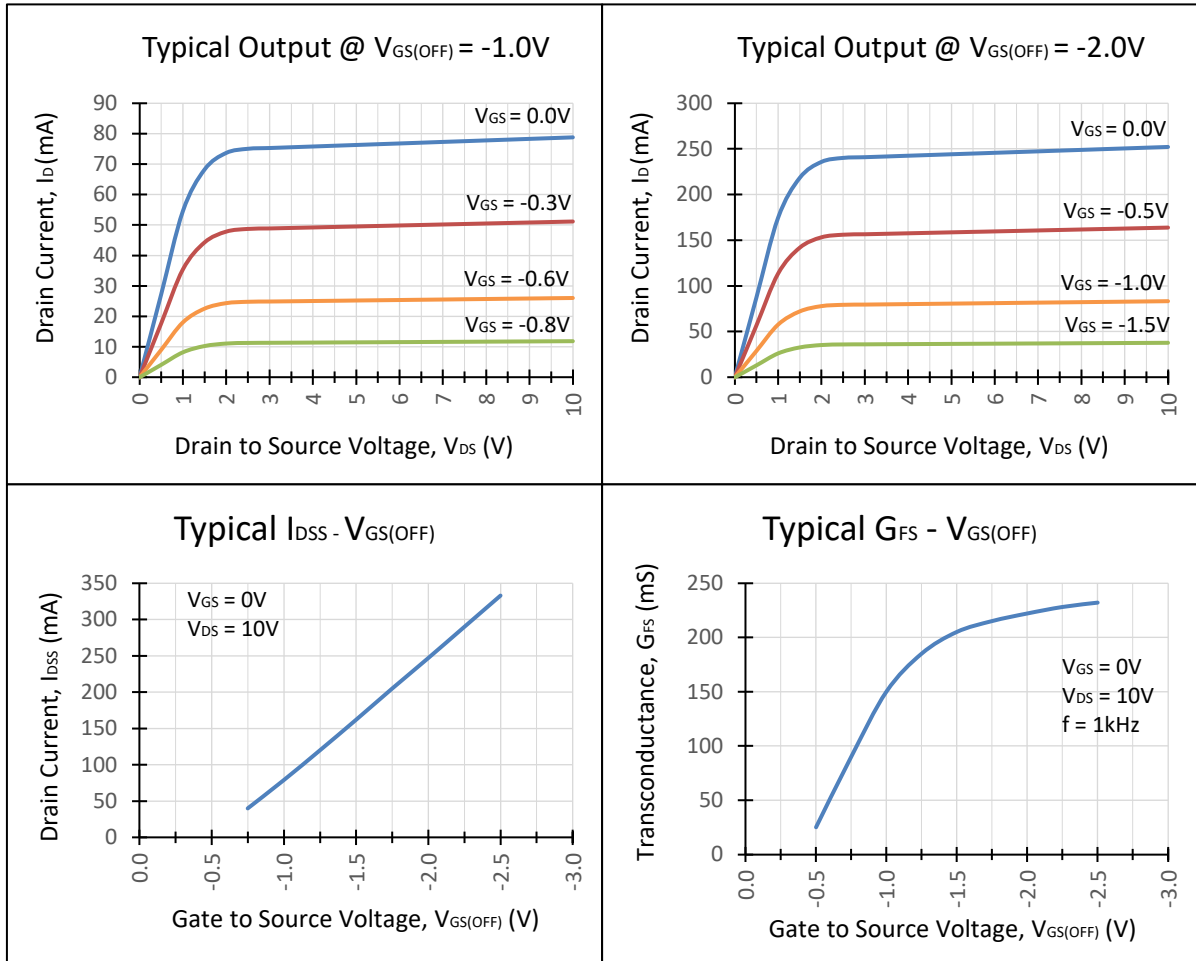
Static Characteristics (@ $T_A = 25^\circ\text{C}$, Unless otherwise specified)

| Parameters | Conditions | Min | Typ | Max | Unit |
|--|---|-------|-----|------|------|
| $V_{(BR)GSS}$ Gate to Source Breakdown Voltage | $V_{DS} = 0V, I_G = -1\mu\text{A}$ | -20 | | | V |
| I_{GSS} Gate to Source Reverse Current | $V_{GS} = -10V, V_{DS} = 0V$ | | | -0.1 | nA |
| $V_{GS(OFF)}$ Gate to Source Cutoff Voltage | $V_{DS} = 10V, I_D = 0.5\text{nA}$ | -0.35 | | -2.0 | V |
| I_{DSS} Drain to Source Saturation Current | $V_{GS} = 0V, V_{DS} = 10V$ (Pulsed) | 30 | 100 | 300 | mA |

Dynamic Characteristics (@ $T_A = 25^\circ\text{C}$, Unless otherwise specified)

| Parameters | Conditions | Min | Typ | Max | Unit |
|--|---|-----|-----|-----------|------------------------|
| G_{FS} Forward Transconductance | $V_{DS} = 10V, V_{GS} = 0V, f = 1\text{kHz}$ | 80 | 150 | | mS |
| C_{iss} Input Capacitance | $V_{DS} = 10V, I_D = 5\text{mA}, f = 1\text{MHz}$ | | | 60 | pF |
| C_{rss} Reverse Transfer Capacitance | $V_{DS} = 10V, I_D = 5\text{mA}, f = 1\text{MHz}$ | | | 20 | pF |
| e_n Equivalent Circuit Input Noise Voltage | $V_{DS} = 4V, I_D = 5\text{mA}, f = 1\text{kHz}$ | | 0.7 | | nV/ $\sqrt{\text{Hz}}$ |
| $ V_{GS1} - V_{GS2} $ Differential Gate Source Voltage | $V_{DS} = 10V$ $I_D = 500\text{pA}$ | | | 50 100 | mV |

Typical IF9034, IF9035 Characteristics



Typical IF9034, IF9035 Characteristics (Continued)

