

## IFN6449, IFN6450 N-Channel JFET

### Features

- InterFET [N0042SY Geometry](#)
- High Voltage
- Low Input Capacitance: 3pF Maximum
- RoHS Compliant
- SMT, TH, and Bare Die Package options.

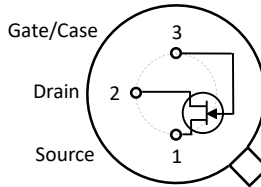
### Applications

- High Voltage

### Description

The -300V InterFET IFN6449 and IFN6450 are targeted for high voltage applications. The TO-39 package is hermetically sealed and suitable for military applications.

TO-39 Bottom View



### Product Summary

| Parameters    |                                    | IFN6449 Min | IFN6450 Min | Unit |
|---------------|------------------------------------|-------------|-------------|------|
| $BV_{GSS}$    | Gate to Source Breakdown Voltage   | -100        | -100        | V    |
| $I_{DSS}$     | Drain to Source Saturation Current | 2           | 2           | mA   |
| $V_{GS(off)}$ | Gate to Source Cutoff Voltage      | -2          | -2          | V    |
| $G_{FS}$      | Forward Transconductance           | 0.5         | 0.5         | mS   |

### Ordering Information Custom Part and Binning Options Available

| Part Number            | Description                            | Case  | Packaging       |
|------------------------|--|-------|-----------------|
| IFN6449; IFN6450       | Through-Hole                           | TO-39 | Bulk            |
| IFN6449COT; IFN6450COT | Chip Orientated Tray (COT Waffle Pack) | COT   | 400/Waffle Pack |
| IFN6449CFT; IFN6450CFT | Chip Face-up Tray (CFT Waffle Pack)    | CFT   | 400/Waffle Pack |



**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 Drain Voltage      | -300; -200 | V                    |
| $I_{FG}$ Continuous Forward Gate Current  | 10         | mA                   |
| $P_D$ Continuous Device Power Dissipation | 800        | mW                   |
| P Power Derating                          | 6.4        | 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  | IFN6449 |     | IFN6450 |              | Unit                |
|--|---|---------|-----|---------|--------------|---------------------|
|  |   | Min     | Max | Min     | Max          |                     |
| $V_{(BR)GSS}$ Gate to Source Breakdown Voltage | $I_G = -10\mu\text{A}$ , $I_D = 0\text{A}$  | -100    |     | -100    |              | V                   |
| $V_{(BR)GDO}$ Gate Drain Breakdown Voltage     | $I_G = -10\mu\text{A}$ , $I_S = 0\text{A}$  | -300    |     | -200    |              | V                   |
| $I_{GSS}$ Gate to Source Reverse Current       | $V_{GS} = -80\text{V}$ , $V_{DS} = 0\text{V}$ , $T_A = 25^\circ\text{C}$<br>$V_{GS} = -80\text{V}$ , $V_{DS} = 0\text{V}$ , $T_A = 150^\circ\text{C}$ |         |     |         | -100<br>-100 | nA<br>$\mu\text{A}$ |
| $V_{GS(OFF)}$ Gate to Source Cutoff Voltage    | $V_{DS} = 30\text{V}$ , $I_D = 4\text{nA}$  | -2      | -15 | -2      | -15          | V                   |
| $I_{DSS}$ Drain to Source Saturation Current   | $V_{GS} = 0\text{V}$ , $V_{DS} = 30\text{V}$ (Pulsed)   | 2       | 10  | 2       | 10           | mA                  |

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

| Parameters                             | Conditions   | IFN6449 |     | IFN6450 |     | Unit          |
|--|--|---------|-----|---------|-----|---------------|
|  |  | Min     | Max | Min     | Max |               |
| $G_{FS}$ Forward Transconductance      | $V_{DS} = 30\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{kHz}$ | 0.5     | 3   | 0.5     | 3   | mS            |
| $G_{OS}$ Output Conductance            | $V_{DS} = 30\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{kHz}$ |         | 100 |         | 100 | $\mu\text{S}$ |
| $C_{ISS}$ Input Capacitance            | $V_{DS} = 30\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{MHz}$ |         | 3   |         | 3   | pF            |
| $C_{RSS}$ Reverse Transfer Capacitance | $V_{DS} = 30\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{MHz}$ |         | 0.6 |         | 0.6 | pF            |