

## N0042Y Process Geometry

### Features

- Typical Input Capacitance: 6pF
- High Breakdown Voltage: -400V Typical
- Small Die: 746um X 746um X 203um
- Bond Pads: 95um Diameter
- Substrate Connected to Gate
- Au Back-Side Finish

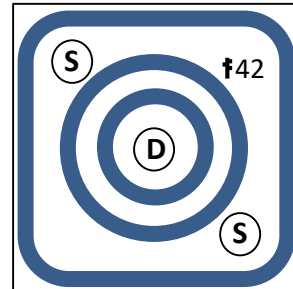
### Applications

- General Purpose Amplifier
- High Breakdown Voltage
- Custom Part Options

### Description

The InterFET N0042Y Geometry is targeted for high voltage applications. The low input capacitance makes it ideal for higher frequency applications.

### Geometry Top View



### Standard Parts

- IFN6449, IFN6450

### Product Summary

| Parameters                                          | Min  | Typ  | Max | Unit |
|-----------------------------------------------------|------|------|-----|------|
| BV <sub>GSS</sub> Gate to Source Breakdown Voltage  | -300 | -400 |     | V    |
| I <sub>DSS</sub> Drain to Source Saturation Current | 2    |      | 10  | mA   |
| V <sub>GS(off)</sub> Gate to Source Cutoff Voltage  | -2   |      | -12 | V    |
| G <sub>FS</sub> Forward Transconductance            |      | 0.8  |     | mS   |

### Maximum Ratings (@ T<sub>A</sub> = 25°C, Unless otherwise specified)

| Parameters                                               | Min  | Typ  | Max | Unit |
|----------------------------------------------------------|------|------|-----|------|
| V <sub>RGS</sub> Reverse Gate to Source or Drain Voltage | -300 | -400 |     | V    |
| I <sub>FG</sub> Continuous Forward Gate Current          |      |      | 10  | mA   |
| T <sub>J</sub> Operating Junction Temperature            | -55  |      | 150 | °C   |
| T <sub>STG</sub> Storage Temperature                     | -65  |      | 175 | °C   |



**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

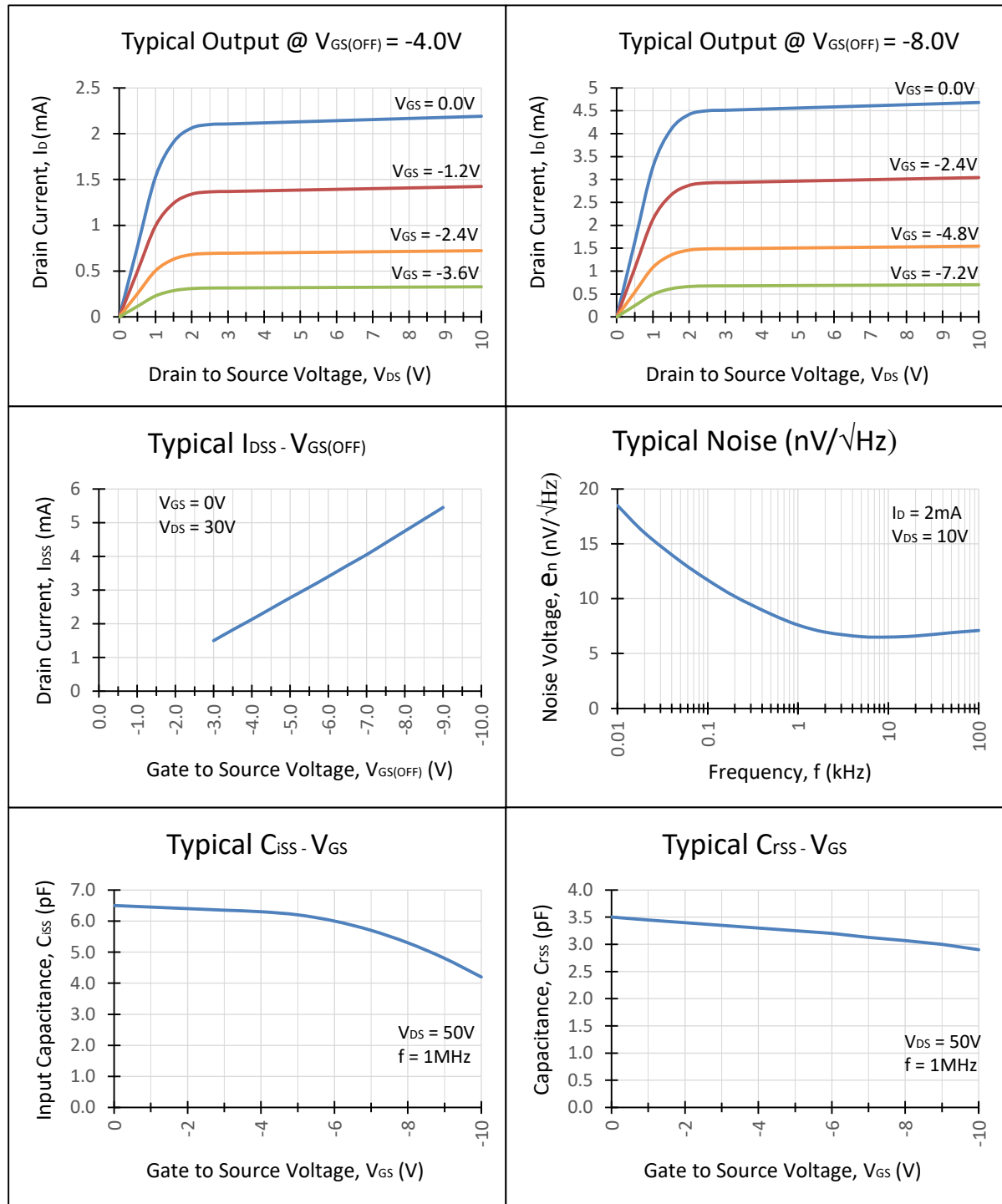
### Static Characteristics (@ TA = 25°C, Unless otherwise specified)

| Parameters           | Conditions                         | Min                                           | Typ  | Max  | Unit |
|----------------------|------------------------------------|-----------------------------------------------|------|------|------|
| BV <sub>GSS</sub>    | Gate to Source Breakdown Voltage   | I <sub>G</sub> = 1μA, V <sub>DS</sub> = 0V    | -300 | -400 | V    |
| I <sub>GSS</sub>     | Gate to Source Reverse Current     | V <sub>GS</sub> = -150V, V <sub>DS</sub> = 0V | -1   | -10  | nA   |
| V <sub>GS(OFF)</sub> | Gate to Source Cutoff Voltage      | V <sub>DS</sub> = 30V, I <sub>D</sub> = 1nA   | -2   | -12  | V    |
| I <sub>DSS</sub>     | Drain to Source Saturation Current | V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V   | 2    | 10   | mA   |

### Dynamic Characteristics (@ TA = 25°C, Unless otherwise specified)

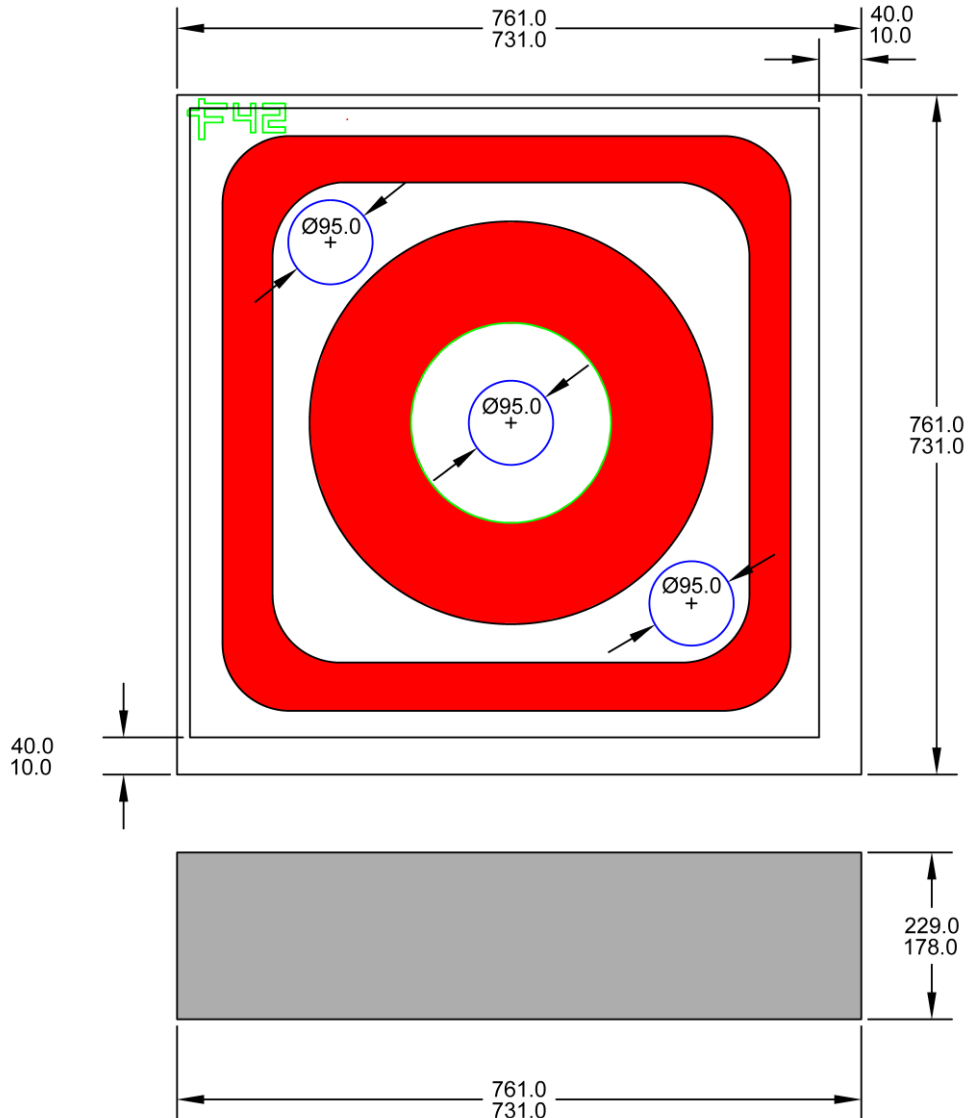
| Parameters       | Conditions                   | Min                                                   | Typ | Max | Unit   |
|------------------|------------------------------|-------------------------------------------------------|-----|-----|--------|
| G <sub>FS</sub>  | Forward Transconductance     | V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V, f = 1kHz | 0.8 |     | mS     |
| C <sub>iss</sub> | Input Capacitance            | V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V, f = 1MHz | 6   | 10  | pF     |
| C <sub>rss</sub> | Reverse Transfer Capacitance | V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V, f = 1MHz | 2   | 5   | pF     |
| e <sub>n</sub>   | Noise Voltage                | V <sub>DS</sub> = 30V, I <sub>D</sub> = 2mA, f = 1kHz | 7.5 |     | nV/√Hz |

## Typical N0042Y Characteristics



## N0042Y Die Geometry Mechanical

### Raw Die Dimensions



1. All linear dimensions are in micrometers.