N0450L Process Geometry

Features

- Low Noise: 0.9 nV/√Hz Typical
- Typical Input Capacitance: 35pF
- Typical Breakdown Voltage: -30V
- High Input Impedance
- Small Die: 670um X 670um X 203um
- Bond Pads: 90um X 90um
- Substrate Connected to Gate
- Au Back-Side Finish

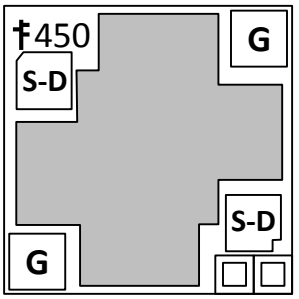
Applications

- Low-Current
- Low Gate Leakage Current
- High Input Impedance
- Low Noise Amplifier
- Audio Amplifiers
- Mid to High-Gain Applications
- Matched Pair Applications
- Custom Part Options

Description

The InterFET N0450L Geometry is ideal for low noise high gain applications.

Geometry Top View



Standard Parts

- 2N6550
- IF4500
- IF4520
- IFN860

Product Summary

Parameters		Min	Typ	Max	Unit
BV_{GSS}	Gate to Source Breakdown Voltage	-25	-30		V
I_{DSS}	Drain to Source Saturation Current	5		750	mA
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-0.5		-10	V
G_{FS}	Forward Transconductance		100		mS

Maximum Ratings (@ T_A = 25°C, Unless otherwise specified)

Parameters		Min	Typ	Max	Unit
V_{RGS}	Reverse Gate to Source or Drain Voltage	-25	-30		V
I_{FG}	Continuous Forward Gate Current			10	mA
T_J	Operating Junction Temperature	-55		150	°C
T_{STG}	Storage Temperature	-65		175	°C

Electrical Characteristics

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

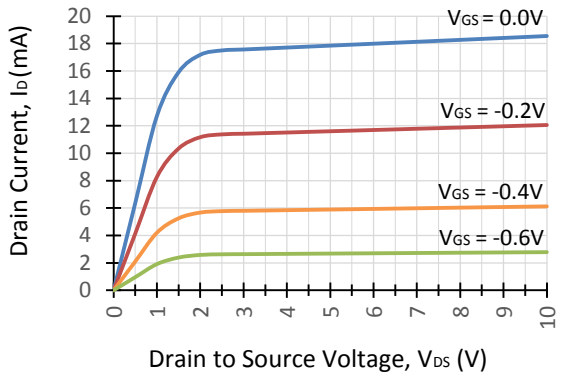
Parameters		Conditions	Min	Typ	Max	Unit
BV_{GSS}	Gate to Source Breakdown Voltage	I_G = -1µA, V_{DS} = 0V	-25	-30		V
I_{GSS}	Gate to Source Reverse Current	V_{GS} = -15V, V_{DS} = 0V		-50		pA
$V_{GS(OFF)}$	Gate to Source Cutoff Voltage	V_{DS} = 15V, I_D = 1nA	-0.5		-10	V
I_{DSS}	Drain to Source Saturation Current	V_{DS} = 15V, V_{GS} = 0V	5		750	mA

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

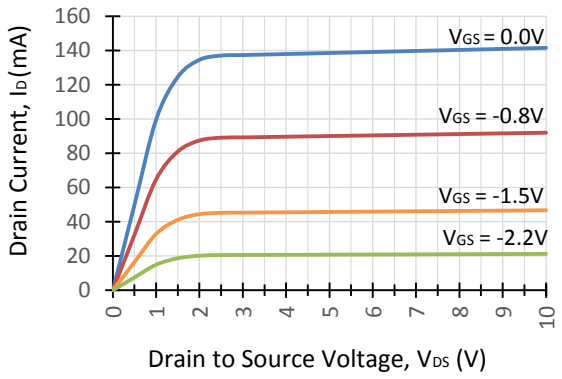
Parameters		Conditions	Min	Typ	Max	Unit
G_{FS}	Forward Transconductance	V_{DS} = 15V, V_{GS} = 0V, f = 1kHz		100		mS
C_{iss}	Input Capacitance	V_{DS} = 0V, V_{GS} = -10V, f = 1MHz		35		pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 0V, V_{GS} = -10V, f = 1MHz		12		pF
e_n	Noise Voltage	V_{DS} = 4V, I_D = 5mA f = 1kHz		0.9		nV/√Hz

Typical N0450L Characteristics

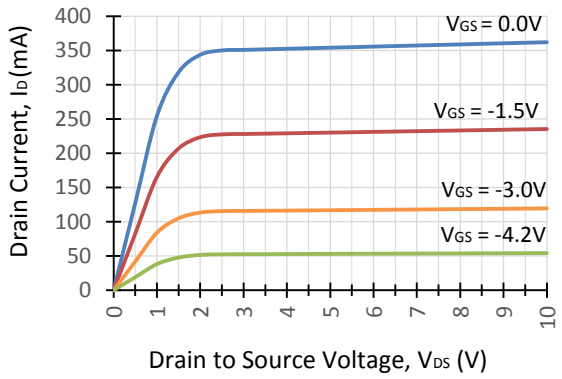
Typical Output @ $V_{GS(OFF)}$ = -0.8V



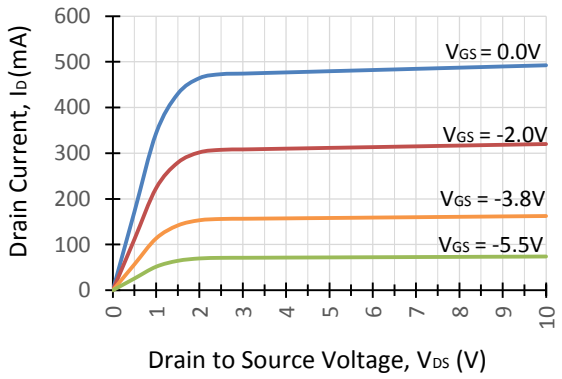
Typical Output @ $V_{GS(OFF)}$ = -2.5V



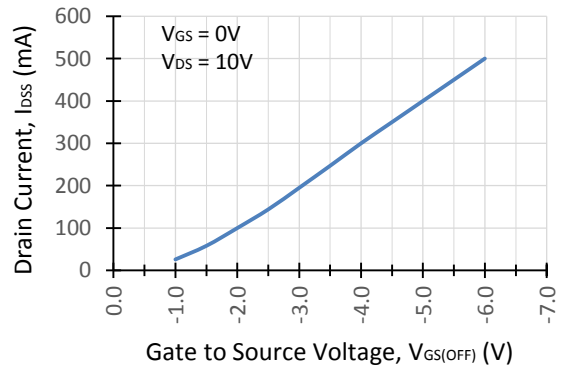
Typical Output @ $V_{GS(OFF)}$ = -4.5V



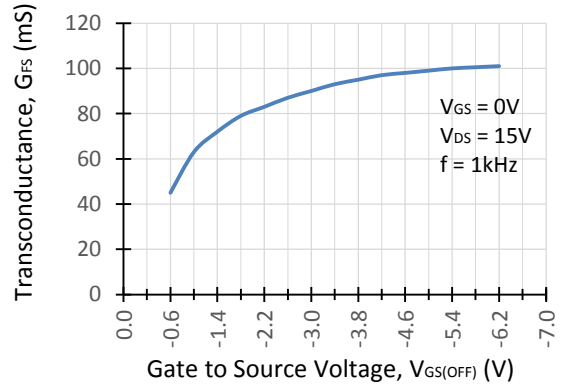
Typical Output @ $V_{GS(OFF)}$ = -6.0V



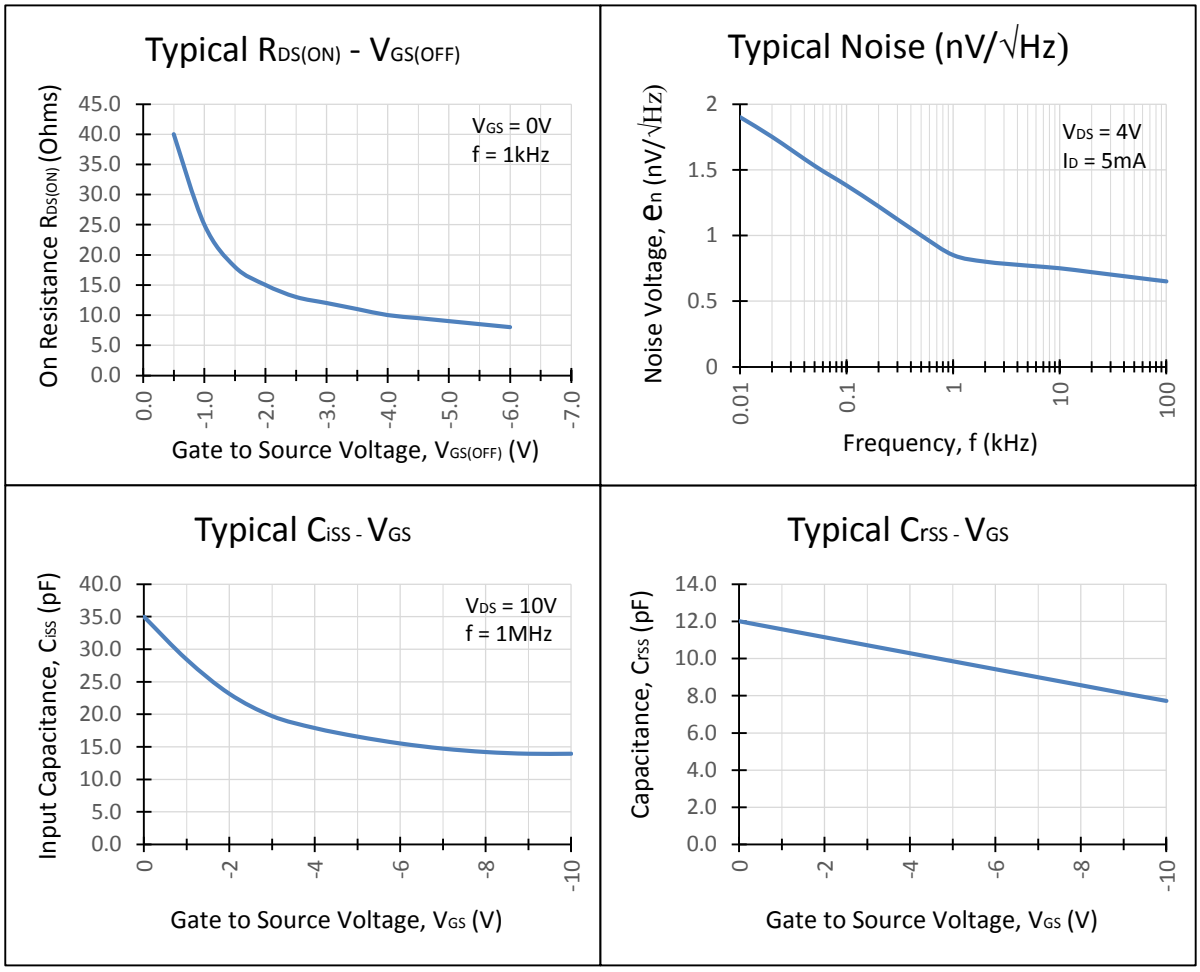
Typical I_{DSS} - $V_{GS(OFF)}$



Typical G_{FS} - $V_{GS(OFF)}$

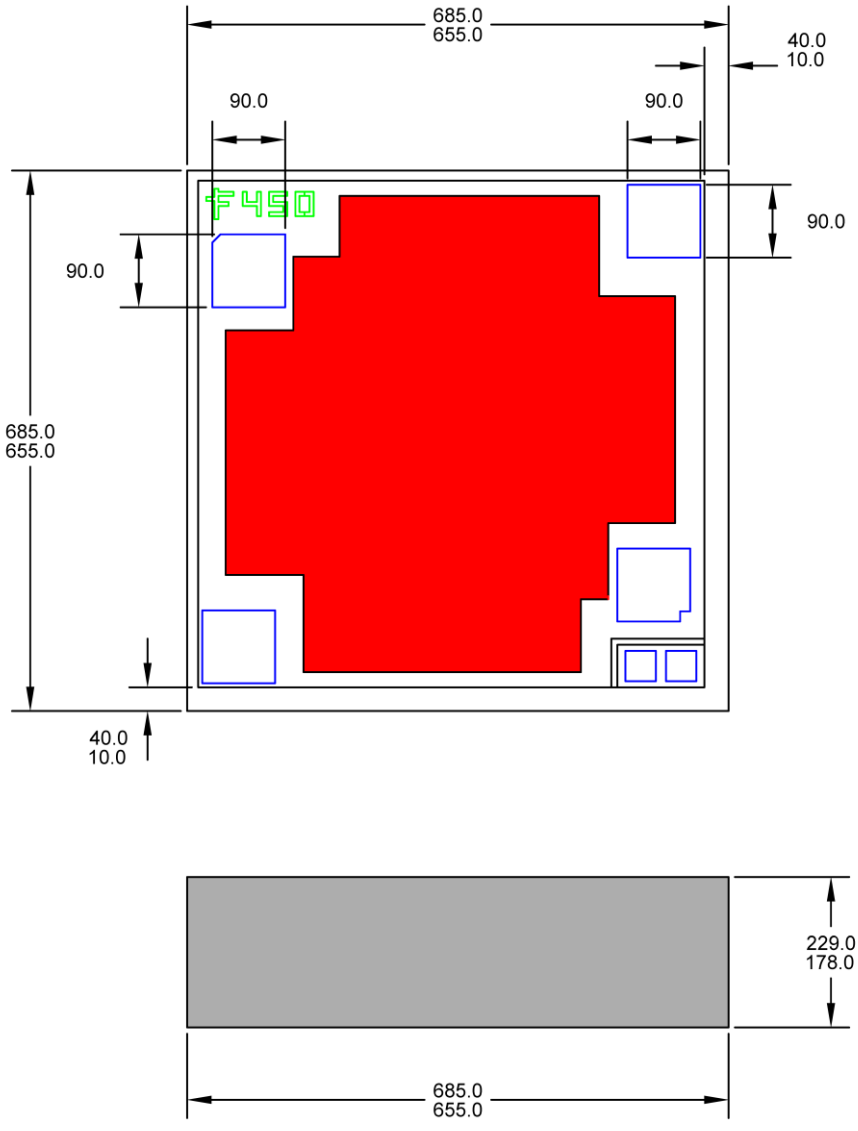


Typical N0450L Characteristics (Continued)



N0450L Die Geometry Mechanical

Raw Die Dimensions



1. All linear dimensions are in micrometers.