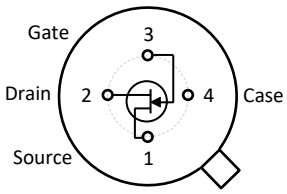
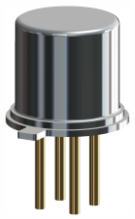
IF4500 N-Channel JFET

Features

- InterFET N0450L Geometry
- Low Noise: 0.9 nV/√Hz Typical
- High Gain: 70mS Typical
- Replacement for IF4510,11
- RoHS Compliant
- SMT, TH, and Bare Die Package options.

TO-72 Bottom View

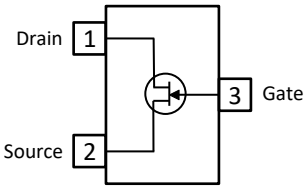


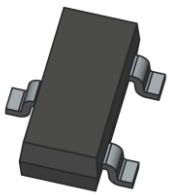


Applications

- Low-Noise, High Gain Amplifiers

SOT23 Top View





Description

The -20V InterFET IF4500 JFET is targeted for low noise high gain amplifier designs. The IF4500 has a cutoff voltage of less than 1.5V ideal for low voltage applications. The TO-72 package is hermetically sealed and suitable for military applications.

Product Summary

Parameters		IF4500 Min	Unit
BV_{GSS}	Gate to Source Breakdown Voltage	-20	V
I_{DSS}	Drain to Source Saturation Current	5	mA
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-0.35	V
G_{FS}	Forward Transconductance	15	mS

Ordering Information Custom Part and Binning Options Available

Part Number	Description	Case	Packaging
IF4500T72	Through-Hole	TO-72	Bulk
IF4500ST3	Surface Mount	SOT23	Bulk
IF4500ST3TR	7" Tape and Reel: Max 3,000 Pieces 13" Tape and Reel: Max 9,000 Pieces	SOT23	Minimum 1,000 Pieces Tape and Reel
IF4500COT	Chip Orientated Tray (COT Waffle Pack)	COT	400/Waffle Pack
IF4500CFT	Chip Face-up Tray (CFT Waffle Pack)	CFT	400/Waffle Pack

Electrical Characteristics

Maximum Ratings (@ T_A = 25°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	225	mW
P	Power Derating	1.8	mW/°C
T_J	Operating Junction Temperature	-55 to 125	°C
T_{STG}	Storage Temperature	-65 to 200	°C

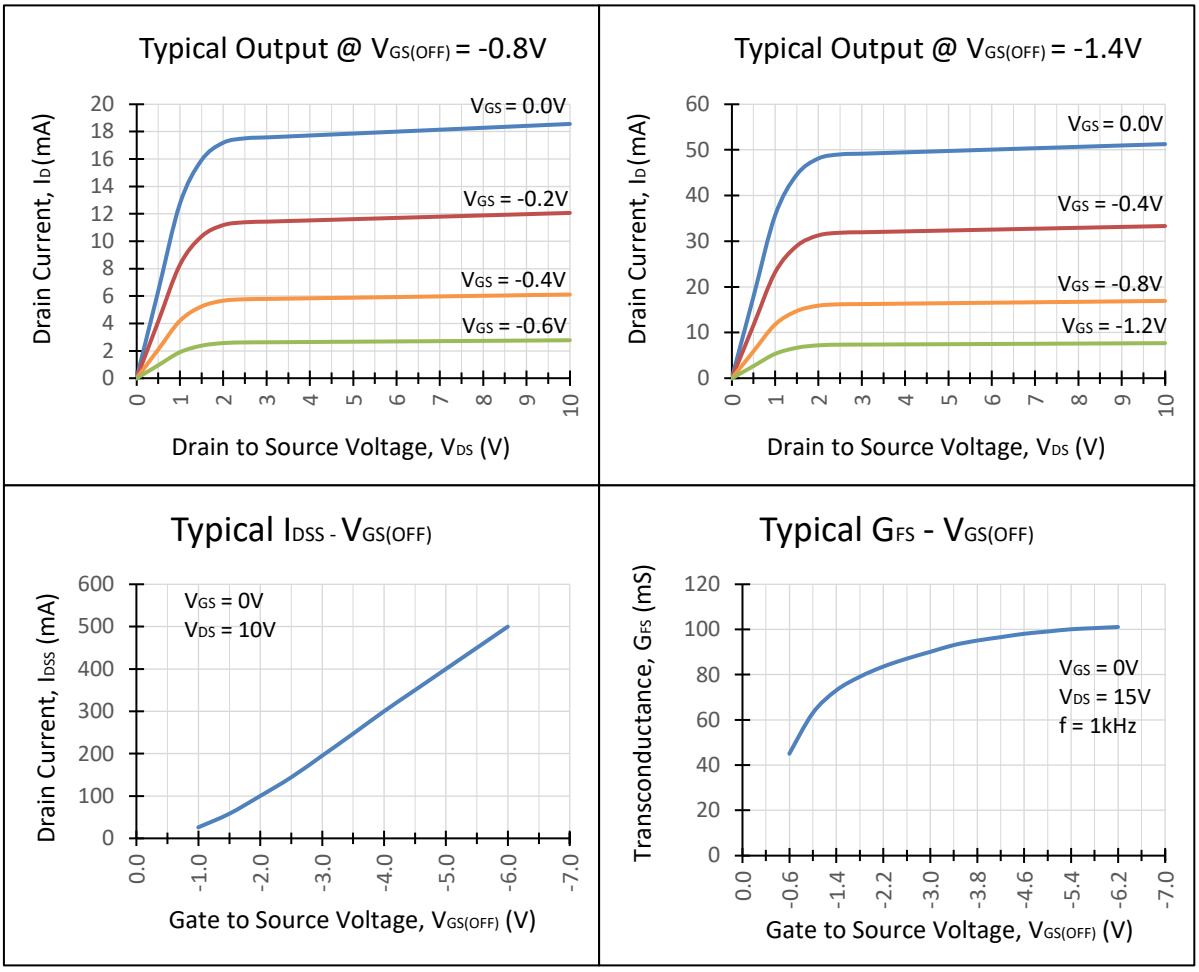
Static Characteristics (@ TA = 25°C, Unless otherwise specified)

Parameters		Conditions	Min	Typ	Max	Unit
$V_{(BR)GSS}$	Gate to Source Breakdown Voltage	V_{DS} = 0V, I_G = -1µA	-20			V
I_{GSS}	Gate to Source Reverse Current	V_{GS} = -20V, V_{DS} = 0V			-0.1	nA
$V_{GS(OFF)}$	Gate to Source Cutoff Voltage	V_{DS} = 15V, I_D = 0.5nA	-0.35		-1.5	V
I_{DSS}	Drain to Source Saturation Current	V_{GS} = 0V, V_{DS} = 15V (Pulsed)	5	30		mA

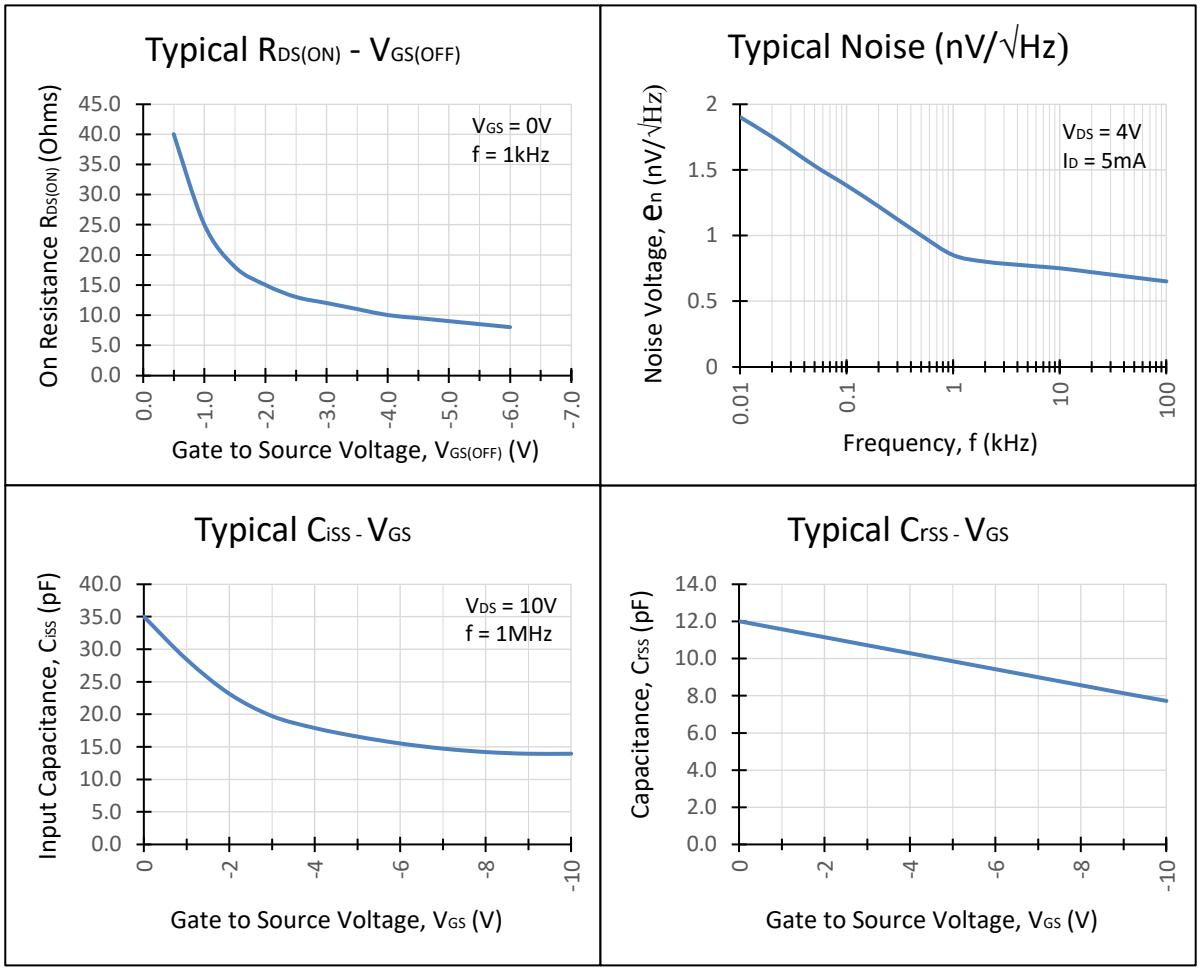
Dynamic Characteristics (@ TA = 25°C, Unless otherwise specified)

Parameters		Conditions	Min	Typ	Max	Unit
G_{FS}	Forward Transconductance	V_{DS} = 15V, I_D = 5mA, f = 1kHz	15	70		mS
C_{iss}	Input Capacitance	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz			35	pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz			8	pF
e_n	Equivalent Circuit Input Noise Voltage	V_{DS} = 4V, I_D = 5mA, f = 1kHz		0.9		nV/√Hz

Typical IF4500 Characteristics

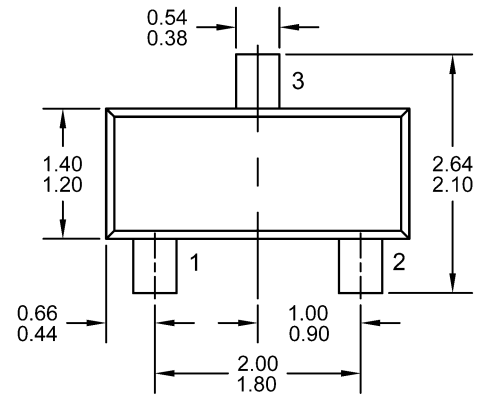


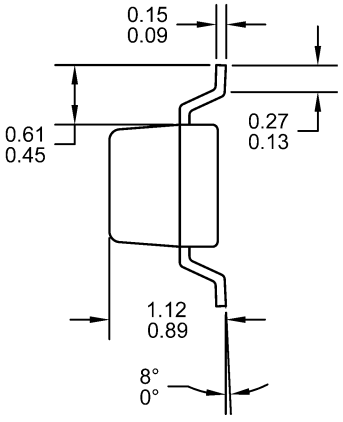
Typical IF4500 Characteristics (Continued)

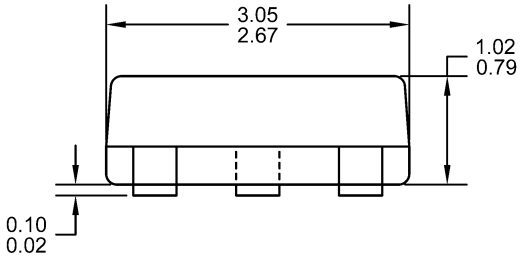


SOT23 (TO-236AB) Mechanical and Layout Data

Package Outline Data

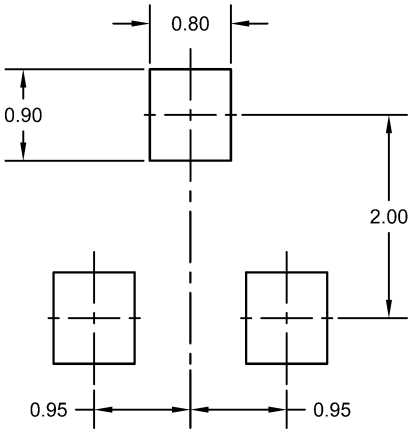






1. All linear dimensions are in millimeters.
2. Package weight approximately 0.12 grams
3. Molded plastic case UL 94V-0 rated
4. For Tape and Reel specifications refer to InterFET CTC-021 Tape and Reel Specification, Document number: IF39002
5. Bulk product is shipped in standard ESD shipping material
6. Refer to JEDEC standards for additional information.

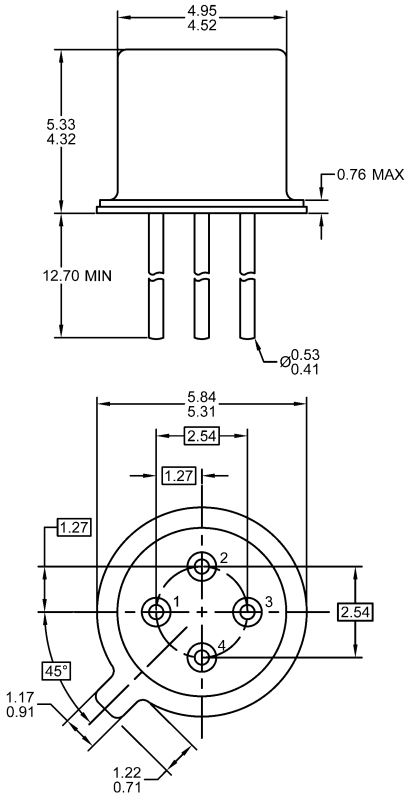
Suggested Pad Layout



1. All linear dimensions are in millimeters.
2. The suggested land pattern dimensions have been provided for reference only. A more robust pattern may be desired for wave soldering.

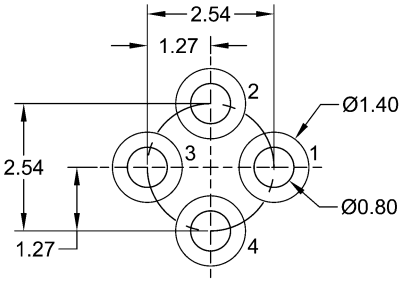
TO-72 Mechanical and Layout Data

Package Outline Data



1. All linear dimensions are in millimeters.
2. Four leaded device. Not all leads are shown in drawing views.
3. Package weight approximately 0.31 grams
4. Bulk product is shipped in standard ESD shipping material
5. Refer to JEDEC standards for additional information.

Suggested Through-Hole Layout



1. All linear dimensions are in millimeters.
2. The suggested land pattern dimensions have been provided as a straight lead reference only. A more robust pattern may be desired for wave soldering and/or bent lead configurations.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

InterFET:

IF4500 IF4501 IF4500TR IF4500ST3 IF4500ST3TR