IF4520 N-Channel JFET

Features

- InterFET N0450S Geometry
- Low Noise: 1.0 nV/√Hz Typical
- Replacement for SNJ450113
- RoHS Compliant
- SMT, TH, and Bare Die Package options.

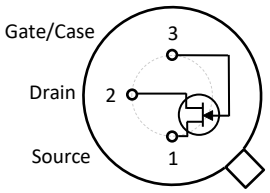
Applications

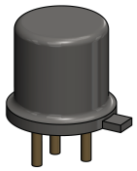
- Low R(ON) Switch
- Low-Noise, High Gain Amplifier

Description

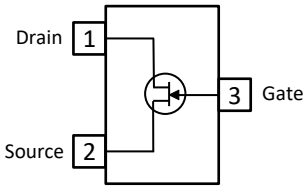
The -40V InterFET IF4520 is a higher voltage version of the low noise high gain IF4500 JFET. The TO-72 package is hermetically sealed and suitable for military applications.

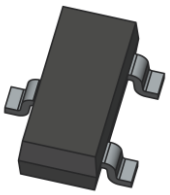
TO-18 Bottom View





SOT23 Top View





Product Summary

Parameters		IF4520 Min	Unit
BV_{GSS}	Gate to Source Breakdown Voltage	-40	V
I_{DSS}	Drain to Source Saturation Current	8	mA
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-0.3	V
G_{FS}	Forward Transconductance	20 (Typ)	mS

Ordering Information Custom Part and Binning Options Available

Part Number	Description	Case	Packaging
IF4520T18	Through-Hole	TO-18	Bulk
IF4520ST3	Surface Mount	SOT23	Bulk
IF4520ST3TR	7" Tape and Reel: Max 3,000 Pieces 13" Tape and Reel: Max 9,000 Pieces	SOT23	Minimum 1,000 Pieces Tape and Reel
IF4520COT	Chip Orientated Tray (COT Waffle Pack)	COT	400/Waffle Pack
IF4520CFT	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	-40	V
I_{FG}	Continuous Forward Gate Current	10	mA
P_D	Continuous Device Power Dissipation	300	mW
P	Power Derating	2.8	mW/°C
T_J	Operating Junction Temperature	-55 to 150	°C
T_{STG}	Storage Temperature	-65 to 175	°C

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

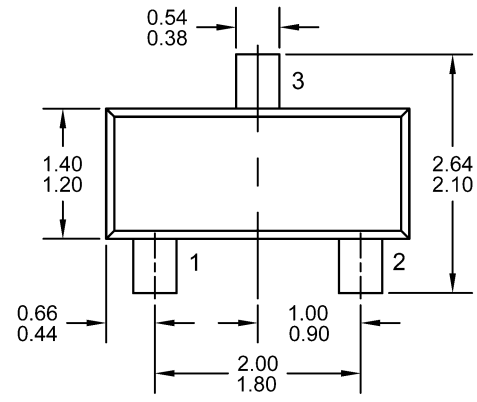
Parameters		Conditions	IF4520			Unit
			Min	Typ	Max	
$V_{(BR)GSS}$	Gate to Source Breakdown Voltage	V_{DS} = 0V, I_G = -1µA	-40	-45		V
I_{GSS}	Gate to Source Reverse Current	V_{GS} = -10V, V_{DS} = 0V		-50	-1000	pA
$V_{GS(OFF)}$	Gate to Source Cutoff Voltage	V_{DS} = 10V, I_D = 1nA	-0.3			V
I_{DSS}	Drain to Source Saturation Current	V_{GS} = 0V, V_{DS} = 15V (Pulsed)	8		20	mA

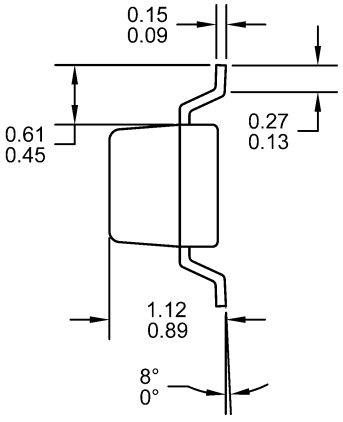
Dynamic Characteristics (@ TA = 25°C, Unless otherwise specified)

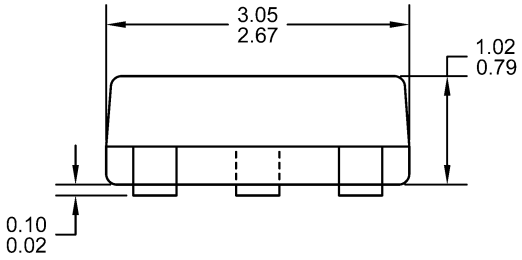
Parameters		Conditions	IF4520			Unit
			Min	Typ	Max	
G_{FS}	Forward Transconductance	V_{DS} = 15V, V_{GS} = 0V, f = 1kHz		20	30	mS
C_{iss}	Input Capacitance	V_{DS} = 0V, V_{GS} = -10V, f = 1MHz			75	pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 0V, V_{GS} = -10V, f = 1MHz		15		pF

SOT23 (TO-236AB) Mechanical and Layout Data

Package Outline Data

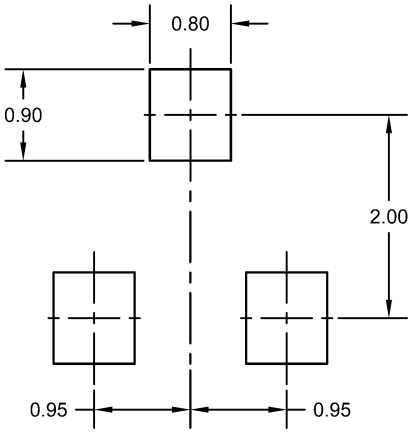






1. All linear dimensions are in millimeters.
2. Package weight approximately 0.12 grams
3. Molded plastic case UL 94V-0 rated
4. For Tape and Reel specifications refer to InterFET CTC-021 Tape and Reel Specification, Document number: IF39002
5. Bulk product is shipped in standard ESD shipping material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

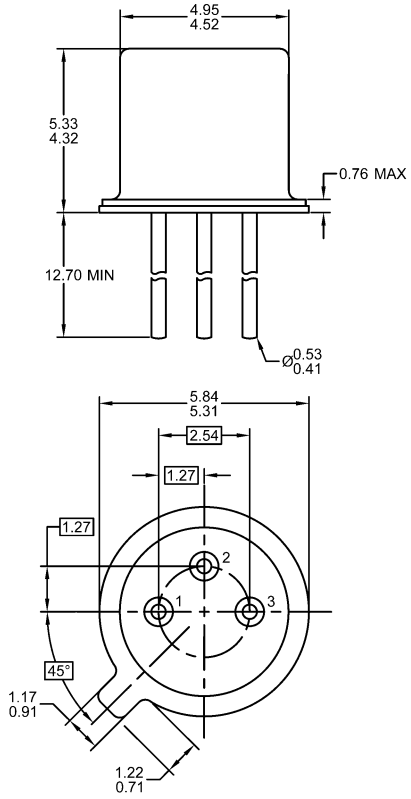
Suggested Pad Layout



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.

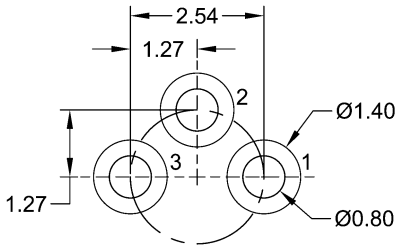
TO-18 Mechanical and Layout Data

Package Outline Data



1. All linear dimensions are in millimeters.
2. Package weight approximately 0.29 grams
3. Bulk product is shipped in standard ESD shipping material
4. 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.