J232 N-Channel JFET

Features

- InterFET N0016SH Geometry
- Low Noise: 5 nV/√Hz Typical
- Low Ciss: 4pF Typical
- RoHS Compliant
- SMT, TH, and Bare Die Package options.

Applications

- Audio Amplifiers
- Small Signal Amplifier
- Ultrahigh Impedance Pre-Amplifier
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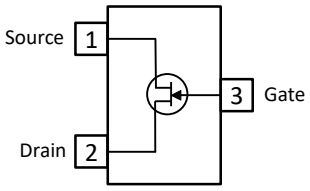
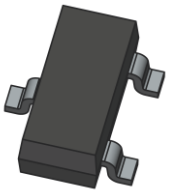
Description

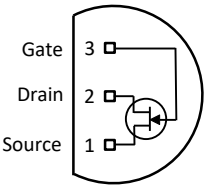
The -40V InterFET J232 JFET is targeted for sensitive amplifier stages for mid-frequencies designs. Gate leakages are typically less than 10pA at room temperatures.

SOT23 Top View





TO-92 Bottom View



Product Summary

Parameters		J232 Min	Unit
BV_{GSS}	Gate to Source Breakdown Voltage	-40	V
I_{DSS}	Drain to Source Saturation Current	5	mA
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-3	V
G_{FS}	Forward Transconductance	2500	µS

Ordering Information Custom Part and Binning Options Available

Part Number	Description	Case	Packaging
J232	Through-Hole	TO-92	Bulk
SMPJ232	Surface Mount	SOT23	Bulk
SMPJ232TR	7" Tape and Reel: Max 3,000 Pieces 13" Tape and Reel: Max 9,000 Pieces	SOT23	Minimum 1,000 Pieces Tape and Reel
J232COT	Chip Orientated Tray (COT Waffle Pack)	COT	400/Waffle Pack
J232CFT	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	50	mA
P_D	Continuous Device Power Dissipation	360	mW
P	Power Derating	3.27	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)

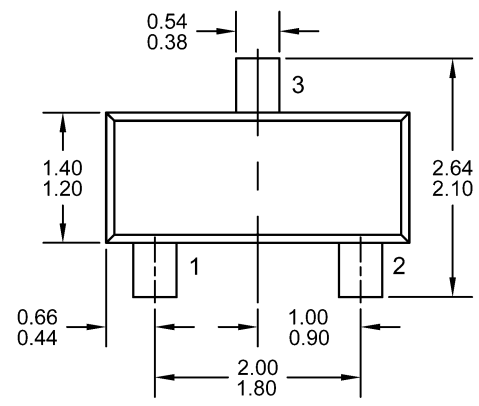
Parameters		Conditions	J232			Unit
			Min	Typ	Max	
$V_{(BR)GSS}$	Gate to Source Breakdown Voltage	V_{DS} = 0V, I_G = -1µA	-40			V
I_{GSS}	Gate to Source Reverse Current	V_{GS} = -30V, V_{DS} = 0V			-250	pA
$V_{GS(OFF)}$	Gate to Source Cutoff Voltage	V_{DS} = 20V, I_D = 1µA	-3		-6	V
I_{DSS}	Drain to Source Saturation Current	V_{GS} = 0V, V_{DS} = 20V (Pulsed)	5		10	mA
I_G	Gate Operating Current	V_{DS} = 20V, I_D = 0V		-2		pA

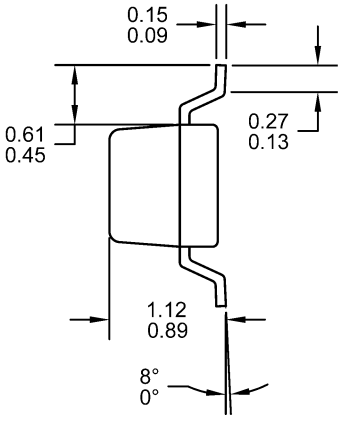
Dynamic Characteristics (@ TA = 25°C, Unless otherwise specified)

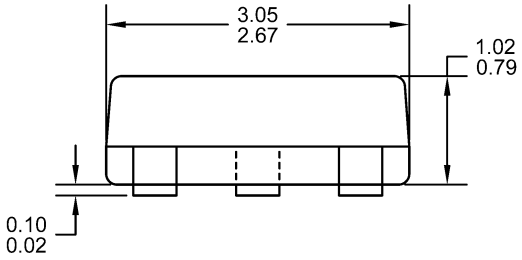
Parameters		Conditions	J232			Unit
			Min	Typ	Max	
G_{FS}	Forward Transconductance	V_{DS} = 20V, V_{GS} = 0V, f = 1kHz	2500		5000	µS
G_{OS}	Output Conductance	V_{DS} = 20V, V_{GS} = 0V, f = 1kHz		5		µS
C_{iss}	Input Capacitance	V_{DS} = 20V, V_{GS} = 0V, f = 1MHz		4		pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 20V, V_{GS} = 0V, f = 1MHz		1		pF
e_n	Noise Voltage	V_{DS} = 10V, V_{GS} = 0V, f = 10Hz V_{DS} = 10V, V_{GS} = 0V, f = 1kHz		20 6	30	nV/√Hz

SOT23 (TO-236AB) Mechanical and Layout Data

Package Outline Data

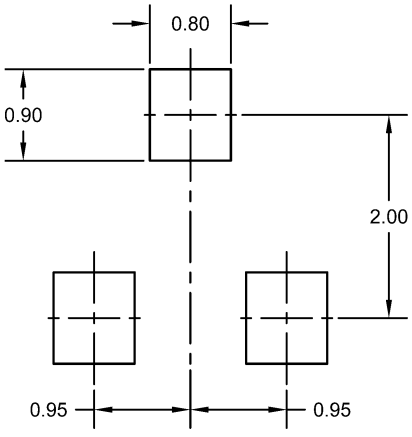






1. All linear dimensions are in millimeters.
2. Package weight approximately 0.12 grams
3. Molded plastic case UL 94V-0 rated
4. For Tape and Reel specifications refer to InterFET CTC-021 Tape and Reel Specification, Document number: IF39002
5. Bulk product is shipped in standard ESD shipping material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

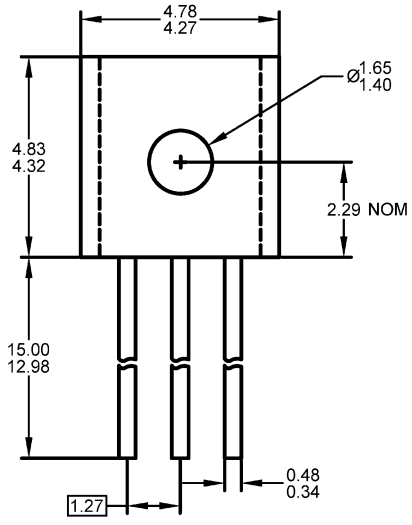
Suggested Pad Layout

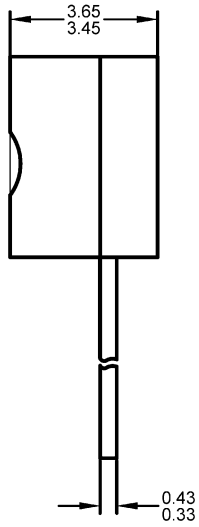


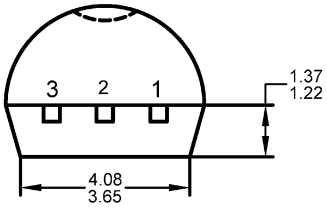
1. All linear dimensions are in millimeters.
2. The suggested land pattern dimensions have been provided for reference only. A more robust pattern may be desired for wave soldering.

TO-92 Mechanical and Layout Data

Package Outline Data

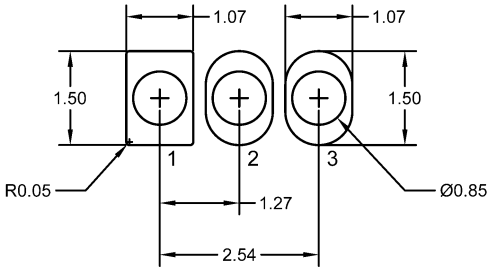






1. All linear dimensions are in millimeters.
2. Package weight approximately 0.19 grams
3. Molded plastic case UL 94V-0 rated
4. Bulk product is shipped in standard ESD shipping material
5. Refer to JEDEC standards for additional information.

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.