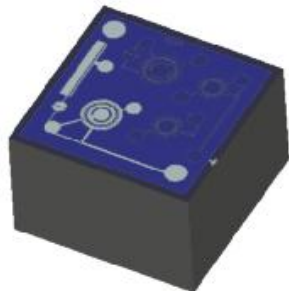


# X-RAY JFETS



Die Size 0.80mm x 0.80mm x 0.50mm

## Applications

### X-ray Detectors

- Si(Li) Detectors
- Si-PIN Detectors
- Silicon Drift Detectors (SDD)

## JFET Ordering Information

Part Number	Packaging
-------------	-----------

Contact Moxtek	TO-72 with can
Contact Moxtek	Nailhead package
Contact Moxtek	Teflon package

*Please contact MOXTEK for price and delivery information. Custom packaging is available.*



452 West 1260 North  
Orem, UT 84057  
P 801.225.0930  
F 801.221.1121

[www.moxtek.com](http://www.moxtek.com)

## MX-30 Ultra Low Noise JFET

The MX-30 ultra low noise JFET is used in a variety of applications including microanalysis, EDXRF, XRD. The MX-30 is a 4 pin N-channel JFET and is guaranteed to have a noise level less than 2.5nV @ 1KHz, 20°C. This JFET has excellent transconductance ( $g_m$ ) and input capacitance ( $C_{gs}$ ) ( $g_m=6mS$ ,  $C_{gs}=0.6pF$ , 20°C).

## Features for Optimal Detector Resolution

Ultra low noise

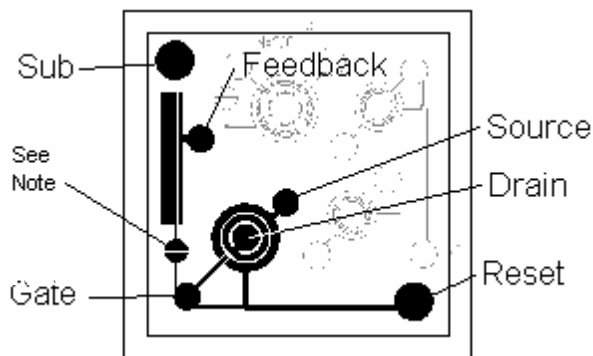
Free of generation recombination noise

Excellent transconductance ( $g_m$ ) and input capacitance ( $C_{gs}$ )

Low leakage current

## Standard Package Includes:

- JFET mounted on a nailhead or TO-72
- Each JFET is tested and guaranteed



The bottom gate on this 4 terminal JFET is the substrate. Feedback capacitance = 0.3pF Feedback connection is custom and is not generally bonded.

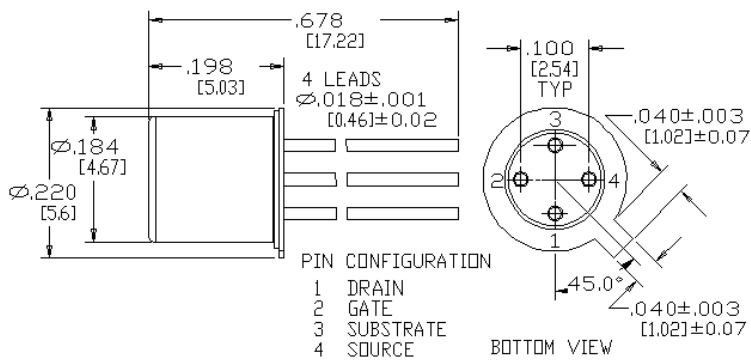
NOTE: This pad needs to be shorted or used as the gate connection when using the feedback capacitor.

Noise Characteristics	Typ nV/ $\sqrt{\text{Hz}}$	Max nV/ $\sqrt{\text{Hz}}$	Test Condition $V_{ds}$	$I_d$	Temp C°
1KHz	2.4		4V	5mA	20
10KHz	2.1		4V	5mA	20
100KHz	2.0		4V	5mA	20
1KHz	2.2	3.0	4V	5mA	-100
10KHz	1.7	2.5	4V	5mA	-100
100KHz	1.6	2.5	4V	5mA	-100

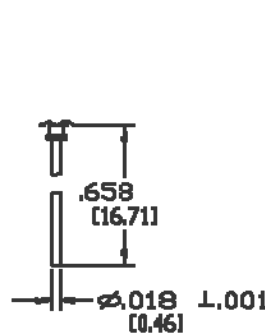
Static Characteristics	Min	Typ	Test Condition
Gate to Source Breakdown ( $BV_{gss}$ )		31V	$V_{ds}=0V, I_g=1\mu A, V_{sub}=0V$
Reverse Leakage Current ( $I_{gss}$ )		0.1pA	$V_{reverse} = -10V$
Gate to Source Cutoff Voltage ( $V_{gs}$ )		10V	$V_{sub}=0V, I_d=1nA$
Drain Saturation Current ( $I_{dss}$ )		20mA	$V_{gs}=0V, V_{ds}=0V$

Dynamic Characteristics	Typ	Test Condition
Transconductance ( $g_m$ )	6mS	$V_{ds}=4V, I_d=5mA, 20^\circ C$
Transconductance ( $g_m$ )	8mS	$V_{ds}=4V, I_d=5mA, -100^\circ C$
Gate to Source Capacitance ( $C_{gs}$ )	0.6pF	$V_{gs}=0V, V_{ds}=4V, I_d=5mA$

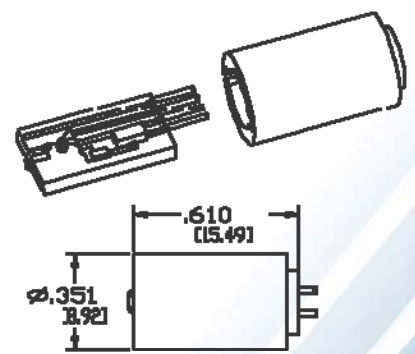
## Available JFET Packages



TO-72 PACKAGE WITH CAN  
(Light Reset Package available)



NAILHEAD WITH  
FLYING LEADS



TEFLON PACKAGE



452 West 1260 North  
Orem, UT 84057  
P 801.225.0930  
F 801.221.1121  
[www.moxtek.com](http://www.moxtek.com)