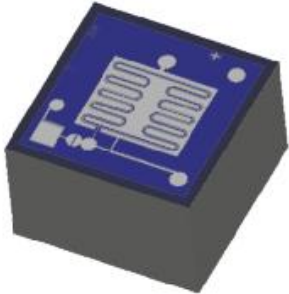


X-RAY JFETS



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 |
|-------------|-----------|
|-------------|-----------|

| | |
|----------------|------------------|
| FET00039 | 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

MX-16 Ultra Low Noise JFET

The MX-16 ultra low noise JFET is used in a variety of applications including microanalysis, EDXRF, XRD. The MX-16 is a 4 pin N-channel JFET and is guaranteed to have a noise level less than 1.5nV @ 1KHz, 20°C. This JFET has excellent transconductance (g_m) and input capacitance (C_{gs}) ($g_m=28mS$, $C_{gs}=4pF$, 20°C).

Features for Optimal Detector Resolution

Ultra low noise

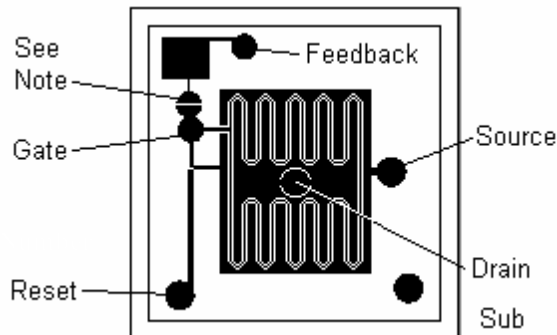
Free of generation recombination noise

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 connection is custom and is not generally bonded.

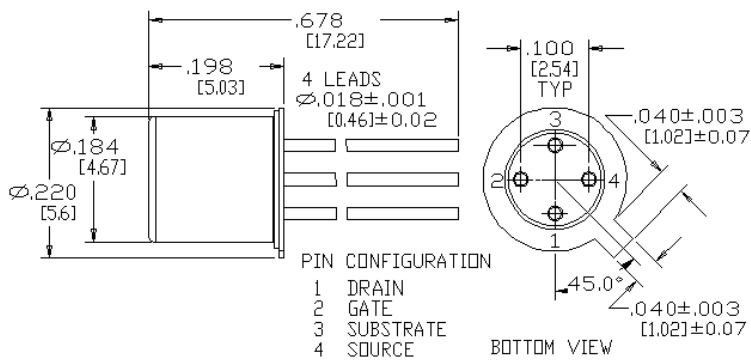
NOTE: This pad needs to be shorted or used as the gate connection when using the feedback capacitor.

| Noise Characteristics | Typ nV/ $\sqrt{\text{Hz}}$ | Max nV/ $\sqrt{\text{Hz}}$ | Test Condition V_{ds} | I_d | Temp C° |
|-----------------------|-------------------------------|-------------------------------|----------------------------|-------|------------|
| 1KHz | 1.1 | | 4V | 5mA | 20 |
| 10KHz | 0.8 | | 4V | 5mA | 20 |
| 100KHz | 0.8 | | 4V | 5mA | 20 |
| 1KHz | 0.9 | 1.3 | 4V | 5mA | -100 |
| 10KHz | 0.6 | 1.0 | 4V | 5mA | -100 |
| 100KHz | 0.6 | 1.0 | 4V | 5mA | -100 |

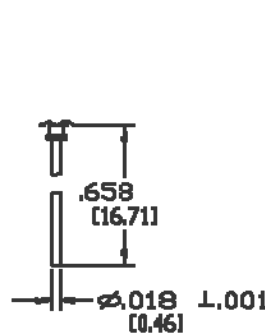
| Static Characteristics | Min | Typ | Test Condition |
|--|-------|-------|-------------------------------------|
| Gate to Source Breakdown (BV_{gss}) | 20V | 26V | $V_{ds}=0V, I_g=1\mu A, V_{sub}=0V$ |
| Reverse Leakage Current (I_{gss}) | | 0.4pA | $V_{reverse} = -10V$ |
| Gate to Source Cutoff Voltage (V_{gs}) | 10V | | $V_{sub}=0V, I_d=1nA$ |
| Drain Saturation Current (I_{dss}) | 300mA | | $V_{gs}=0V, V_{ds}=0V$ |

| Dynamic Characteristics | Typ | Test Condition |
|---|------|------------------------------------|
| Transconductance (g_m) | 28mS | $V_{ds}=4V, I_d=5mA, 20^\circ C$ |
| Transconductance (g_m) | 40mS | $V_{ds}=4V, I_d=5mA, -100^\circ C$ |
| Gate to Source Capacitance (C_{gs}) | 4pF | $V_{gs}=0V, V_{ds}=4V, I_d=5mA$ |

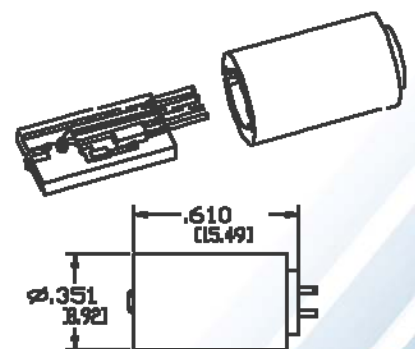
Available JFET Packages



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



NAILHEAD WITH FLYING LEADS



TEFLON PACKAGE



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