

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
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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

MOXTEK® www.moxtek.com

MX-40 Ultra Low Noise JFET

The MX-40 ultra low noise JFET is used in a variety of applications including microanalysis, EDXRF, XRD. The MX-40 is a 4 pin N-channel JFET and is guaranteed to have a noise level less than 3.5nV @ 1KHz, 20°C. This JFET has excellent transconductance (g_m) and input capacitance (C_{gs}) ($g_m=4.5mS$, $C_{gs}=0.4pF$, 20°C).

Features for Optimal Detector Resolution

Ultra low noise

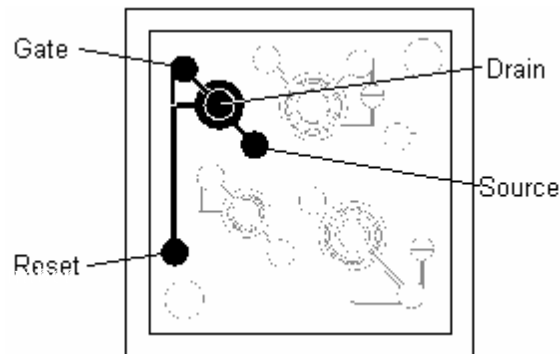
Free of generation recombination noise

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



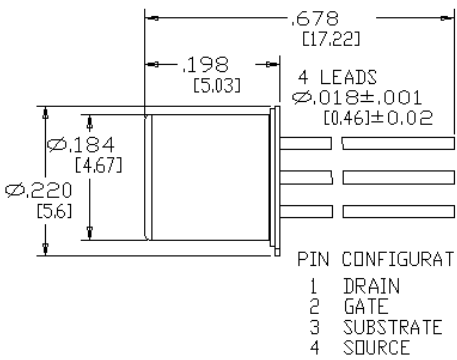
The bottom gate on this 4 terminal JFET is the substrate.

Noise Characteristics	Typ nV/ $\sqrt{\text{Hz}}$	Max nV/ $\sqrt{\text{Hz}}$	Test Condition V_{ds}	I_d	Temp $^{\circ}\text{C}$
1KHz	3.3		4V	5mA	20
10KHz	2.7		4V	5mA	20
100KHz	2.6		4V	5mA	20
1KHz	3.0	3.5	4V	5mA	-100
10KHz	2.1	2.8	4V	5mA	-100
100KHz	2.1	2.8	4V	5mA	-100

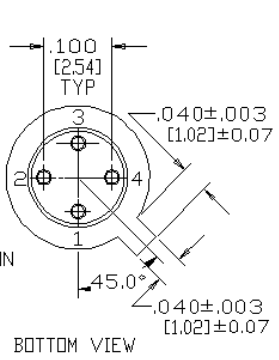
Static Characteristics	Min	Typ	Test Condition
Gate to Source Breakdown (BV_{gss})		27V	$V_{ds}=0V, I_g=1\mu A, V_{sub}=0V$
Reverse Leakage Current (I_{gss})		0.2pA	$V_{reverse} = -10V$
Gate to Source Cutoff Voltage (V_{gs})		9V	$V_{sub}=0V, I_d=1nA$
Drain Saturation Current (I_{dss})		12mA	$V_{gs}=0V, V_{ds}=0V$

Dynamic Characteristics	Typ	Test Condition
Transconductance (g_m)	4.5mS	$V_{ds}=4V, I_d=5mA, 20^{\circ}\text{C}$
Transconductance (g_m)	5.5mS	$V_{ds}=4V, I_d=5mA, -100^{\circ}\text{C}$
Gate to Source Capacitance (C_{gs})	0.4pF	$V_{gs}=0V, V_{ds}=4V, I_d=5mA$

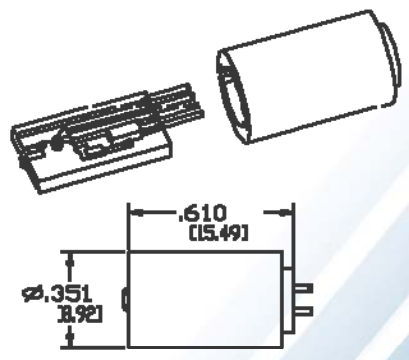
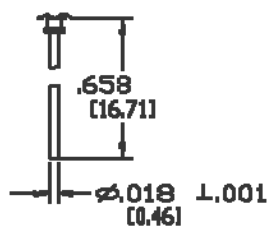
Available JFET Packages



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



NAILHEAD WITH FLYING LEADS



TEFLON PACKAGE