

n-channel JFETs designed for . . .

- Analog Switches
- Choppers
- Commutators

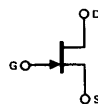
Performance Curves NVA See Section 4

BENEFITS

- Very Low Insertion Loss
 $r_{DS(on)} < 3 \Omega$ (J105)
- No Offset or Error Voltages Generated by Closed Switch
Purely Resistive
High Isolation Resistance from Driver

ABSOLUTE MAXIMUM RATINGS (25°C)

Gate-Drain or Gate-Source Voltage	– 25 V
Gate Current	50 mA
Total Device Dissipation at 25°C Ambient (Derate 3.27 mW/°C)	360 mW
Operating Temperature Range	–55 to 135°C
Storage Temperature Range	–55 to 150°C
Lead Temperature Range (1/16" from case for 10 seconds)	300°C



TO-92
See Section 6

Plastic



Bottom View

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic			J105			J106			J107			Unit	Test Conditions		
			Min	Typ	Max	Min	Typ	Max	Min	Typ	Max				
1	S T A T I C	I_{GSS} Gate Reverse Current (Note 1)			–3			–3			–3	nA	$V_{DS} = 0 \text{ V}, V_{GS} = -15 \text{ V}$		
2		$V_{GS(off)}$ Gate-Source Cutoff Voltage	–4.5		–10	–2		–6	–0.5		–4.5	V	$V_{DS} = 5 \text{ V}, I_D = 1 \mu\text{A}$		
3		BV_{GSS} Gate-Source Breakdown Voltage	–25			–25			–25				$V_{DS} = 0 \text{ V}, I_G = -1 \mu\text{A}$		
4		I_{DSS} Drain Saturation Current (Note 2)	500			200			100			mA	$V_{DS} = 15 \text{ V}, V_{GS} = 0 \text{ V}$		
5	D Y N A M I C	$I_D(off)$ Drain Cutoff Current (Note 1)			3			3			3	nA	$V_{DS} = 5 \text{ V}, V_{GS} = -10 \text{ V}$		
6		$r_{DS(on)}$ Drain Source ON Resistance			3			6			8	Ω	$V_{DS} \leq 0.1 \text{ V}, V_{GS} = 0 \text{ V}$		
7		$C_{dg(off)}$ Drain Gate OFF Capacitance			35			35			35	pF	$V_{DS} = 0 \text{ V}, V_{GS} = -10 \text{ V}$		
8	$C_{sg(off)}$ Source Gate OFF Capacitance			35			35			35	$V_{DS} = V_{GS} = 0 \text{ V}$		$f = 1 \text{ MHz}$		
9	$C_{dg(on)} + C_{sg(on)}$ Drain Gate plus Source Gate ON Capacitance			160			160			160					
10	M I C	$t_{d(on)}$ Turn On Delay Time		15			15			15	ns	Switching Time Test Conditions			
11		t_r Rise Time		20			20			20		V_{DD}		J105 1.5 V	J106 1.5 V
12		$t_d(off)$ Turn Off Delay Time		15			15			15		$V_{GS(off)}$	–12 V	–7 V	–5 V
13		t_f Fall Time		20			20			20		R_L	50 Ω	50 Ω	50 Ω

NOTES:

1. Approximately doubles for every 10°C increase in T_A .
2. Pulse test duration = 300 μs ; duty cycle $\leq 3\%$.

NVA

n-channel JFETs designed for . . .



Performance Curves NPA
See Section 4

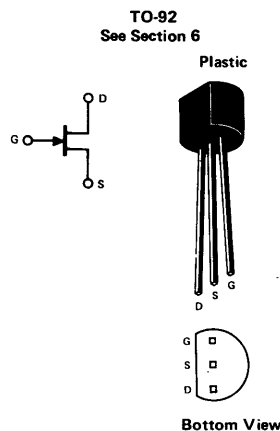
■ Audio and Sub-Audio Amplifiers

BENEFITS

- Ultra Low Noise
 $\bar{e}_n = 8 \text{ nV}/\sqrt{\text{Hz}}$ Typical at 10 Hz
 $\bar{e}_n = 2 \text{ nV}/\sqrt{\text{Hz}}$ Typical at 1 kHz

ABSOLUTE MAXIMUM RATINGS (25°C)

Gate-Drain or Gate-Source Voltage (Note 1) -40V
 Gate Current 50 mA
 Total Device Dissipation at 25°C Ambient
 (Derate 3.27 mW/°C) 360 mW
 Operating Temperature Range -55 to 135°C
 Storage Temperature Range -55 to 150°C
 Lead Temperature Range
 (1/16" from case for 10 seconds) 300°C



ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic		J230			J231			J232			Unit	Test Conditions	
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max			
1	I_{GSS} Gate Reverse Current (Note 2)			-250			-250			-250	pA	$V_{DS} = 0, V_{GS} = -30 \text{ V}$	
2	$V_{GS(off)}$ Gate-Source Cutoff Voltage	-0.5		-3	-1.5		-5	-3		-6	V	$V_{DS} = 20 \text{ V}, I_D = 1 \mu\text{A}$	
3	BV_{GSS} Gate-Source Breakdown Voltage	-40			-40			-40				$V_{DS} = 0, I_G = -1 \mu\text{A}$	
4	I_{DSS} Saturation Drain Current (Note 3)	0.7		3	2		6	5		10	mA	$V_{DS} = 20 \text{ V}, V_{GS} = 0$	
5	I_G Gate Current (Note 2)		-10			-10			-10		pA	$V_{DG} = 10 \text{ V}, I_D = 0.5 \text{ mA}$	
6	g_{fs} Common-Source Forward Transconductance (Note 3)	1,000		3,500	1,500		4,000	2,500		5,000	μmho	$V_{DS} = 20 \text{ V}, V_{GS} = 0$	$f = 1 \text{ kHz}$
7	g_{os} Common-Source Output Conductance		1.5			3			5				
8	C_{iss} Common-Source Input Capacitance		12			12			12		pF		$f = 1 \text{ MHz}$
9	C_{rss} Common-Source Reverse Transfer Capacitance		2			2			2				
10	$\bar{e}_n$ Equivalent Short Circuit Input Noise Voltage		8	30		8	30		8	30	$\frac{\text{nV}}{\sqrt{\text{Hz}}}$	$V_{DS} = 10 \text{ V}, V_{GS} = 0$	$f = 10 \text{ Hz}$
11			2			2			2				$f = 1 \text{ kHz}$

NOTES:

1. Geometry is symmetrical. Unit may be operated with source and drain leads interchanged.
2. Approximately doubles for every 10°C increase in T_A .
3. Pulse test duration = 2 ms.

NPA