

# p-channel JFETs designed for . . .



**Performance Curves PC**  
See Section 5

- **Small-Signal Amplifiers**
- **Analog Multipliers**
- **Modulators**

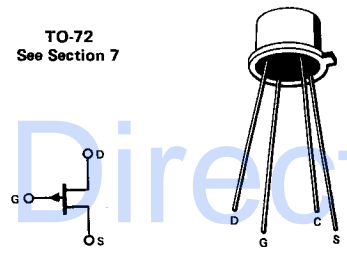
**BENEFITS**

- Ease of Amplifier Design
- $I_{DSS}$  &  $G_{fs}$  Closely Specified

**\*ABSOLUTE MAXIMUM RATINGS (25°C)**

Gate-Drain and Gate-Source Voltage (Note 1) . . . . . 20 V  
 Gate Current . . . . . 10 mA  
 Total Device Dissipation at (or below)  
 25°C Free-Air Temperature (Note 2) . . . . . 300 mW  
 Storage Temperature Range . . . . . -65 to +200°C  
 Lead Temperature  
 (1/16" from case for 10 seconds) . . . . . 230°C

TO-72  
See Section 7



**\*ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)**

Characteristic		2N3329		2N3330		2N3331		2N3332		Unit	Test Conditions	
		Min	Max	Min	Max	Min	Max	Min	Max			
1	I <sub>GSS</sub> Gate Reverse Current		0.01		0.01		0.01		0.01	μA	V <sub>GS</sub> = 10 V, V <sub>DS</sub> = 0	
2			10		10		10		10		V <sub>GS</sub> = 10 V, V <sub>DS</sub> = 0, T <sub>A</sub> = 150°C	
3	BV <sub>GSS</sub> Gate-Source Breakdown Voltage	20		20		20		20		V	I <sub>G</sub> = 10 μA, V <sub>DS</sub> = 0	
4	V <sub>GS(off)</sub> Gate-Source Cutoff Voltage		5		6		8		6		V <sub>DS</sub> = -15 V, I <sub>D</sub> = -10 μA	
5	I <sub>DSS</sub> Saturation Drain Current	-1	-3	-2	-6	-5	-15	-1	-6	mA	V <sub>DS</sub> = -10 V, V <sub>GS</sub> = 0	
6	r <sub>DS(on)</sub> Drain-Source ON Resistance		1000		800		600				I <sub>D</sub> = -100 μA, V <sub>GS</sub> = 0	
7	g <sub>is</sub> Common-Source Input Conductance		0.2		0.2		0.2		0.2	μmho	V <sub>DS</sub> = -10 V	f = 1 kHz
8	g <sub>rs</sub> Common-Source Reverse Transfer Conductance		0.1		0.1		0.1		0.1			
9	g <sub>os</sub> Common-Source Output Conductance		20		40		100		20			
10	g <sub>fs</sub> Common-Source Forward Transconductance	1000	2000	1500	3000	2000	4000	1000	2200			
11	C <sub>iss</sub> Common-Source Input Capacitance		20		20		20		20	pF	V <sub>DS</sub> = -10 V, V <sub>GS</sub> = 1 V	
12											f = 1 MHz	
13	NF Noise Figure		3		3		4		1	dB	V <sub>DS</sub> = -5 V, I <sub>D</sub> = -1 mA R <sub>gen</sub> = 1 MΩ	
14	NF Noise Figure								5		V <sub>DS</sub> = -5 V, I <sub>D</sub> = -1 mA R <sub>gen</sub> = 10 MΩ	

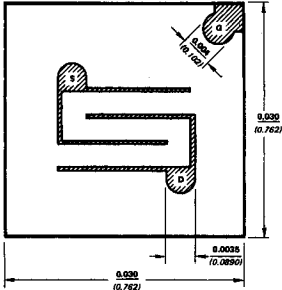
\*JEDEC registered data

PC

**NOTES:**

1. Due to symmetrical geometry, these units may be operated with source and drain leads interchanged.
2. Derate linearly to 175°C free-air temperature at rate of 2.0 mW/°C

GATE ALSO BACKSIDE CONTACT  
S AND D ARE SYMMETRICAL



ALL DIMENSIONS IN INCHES  
TALL DIMENSIONS IN MILLIMETERS

## p-channel JFET designed for . . .

- General Purpose Amplifiers and Attenuators

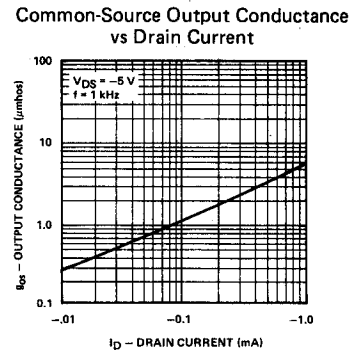
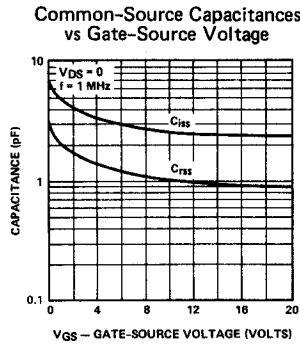
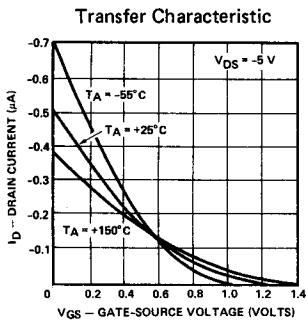
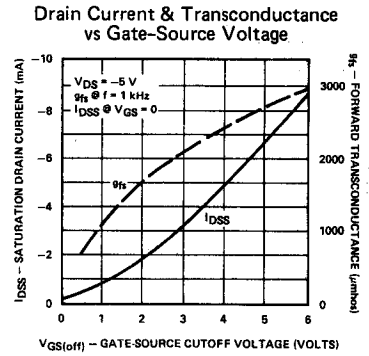
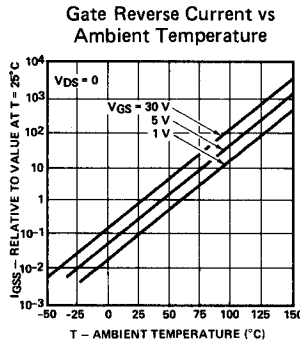
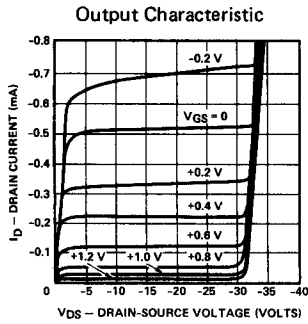
TYPE	PACKAGE
Single	TO-18
Single	TO-72
Single	Chip



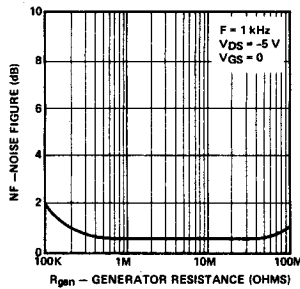
### PRINCIPAL DEVICES

- 2N2608, 2N2608JAN, 2N2843
- 2N3329-32, 2N3909, VCR5P
- 2N2608CHP, 2N2843CHP,
- 2N3329CHP-32CHP, 2N3909CHP
- VCR5PCHP

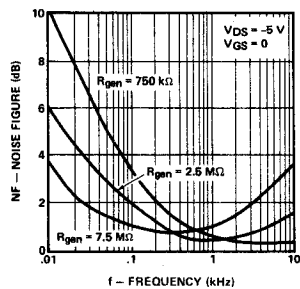
## PERFORMANCE CURVES (25°C unless otherwise noted)



### Noise Figure vs Generator Resistance



### Noise Figure vs Frequency



### Equivalent Input Noise Voltage vs Frequency

