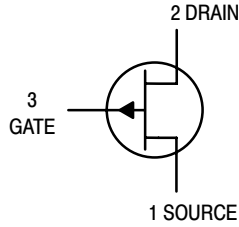


JFET Amplifiers

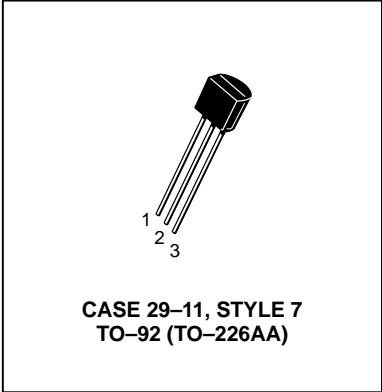
P-Channel — Depletion



2N5460
2N5461
2N5462

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain–Gate Voltage	V_{DG}	40	Vdc
Reverse Gate–Source Voltage	V_{GSR}	40	Vdc
Forward Gate Current	$I_{G(f)}$	10	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350 2.8	mW mW/°C
Junction Temperature Range	T_J	-65 to +135	°C
Storage Channel Temperature Range	T_{stg}	-65 to +150	°C



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Gate–Source Breakdown Voltage ($I_G = 10 \mu\text{Adc}$, $V_{DS} = 0$)	$V_{(BR)GSS}$	40	—	—	Vdc
Gate Reverse Current ($V_{GS} = 20 \text{ Vdc}$, $V_{DS} = 0$)	I_{GSS}	—	—	5.0	nAdc
($V_{GS} = 30 \text{ Vdc}$, $V_{DS} = 0$)		—	—	1.0	μAdc
($V_{GS} = 20 \text{ Vdc}$, $V_{DS} = 0$, $T_A = 100^\circ\text{C}$)		—	—	1.0	μAdc
($V_{GS} = 30 \text{ Vdc}$, $V_{DS} = 0$, $T_A = 100^\circ\text{C}$)		—	—	1.0	μAdc
Gate–Source Cutoff Voltage ($V_{DS} = 15 \text{ Vdc}$, $I_D = 1.0 \mu\text{Adc}$)	$V_{GS(off)}$	0.75 1.0 1.8	— — —	6.0 7.5 9.0	Vdc
Gate–Source Voltage ($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.1 \text{ mAdc}$)	V_{GS}	0.5	—	4.0	Vdc
($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.2 \text{ mAdc}$)		0.8	—	4.5	Vdc
($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.4 \text{ mAdc}$)		1.5	—	6.0	Vdc

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS						
Zero-Gate-Voltage Drain Current (V _{DS} = 15 Vdc, V _{GS} = 0, f = 1.0 kHz)	2N5460	I _{DSS}	-1.0	—	-5.0	mAdc
	2N5461		-2.0	—	-9.0	
	2N5462		-4.0	—	-16	
SMALL-SIGNAL CHARACTERISTICS						
Forward Transfer Admittance (V _{DS} = 15 Vdc, V _{GS} = 0, f = 1.0 kHz)	2N5460	y _{fs}	1000	—	4000	μmhos
	2N5461		1500	—	5000	
	2N5462		2000	—	6000	
Output Admittance (V _{DS} = 15 Vdc, V _{GS} = 0, f = 1.0 kHz)		y _{os}	—	—	75	μmhos
Input Capacitance (V _{DS} = 15 Vdc, V _{GS} = 0, f = 1.0 MHz)		C _{iSS}	—	5.0	7.0	pF
Reverse Transfer Capacitance (V _{DS} = 15 Vdc, V _{GS} = 0, f = 1.0 MHz)		C _{rSS}	—	1.0	2.0	pF
FUNCTIONAL CHARACTERISTICS						
Equivalent Short-Circuit Input Noise Voltage (V _{DS} = 15 Vdc, V _{GS} = 0, f = 100 Hz, BW = 1.0 Hz)		e _n	—	60	115	nV/√Hz

DRAIN CURRENT versus GATE SOURCE VOLTAGE

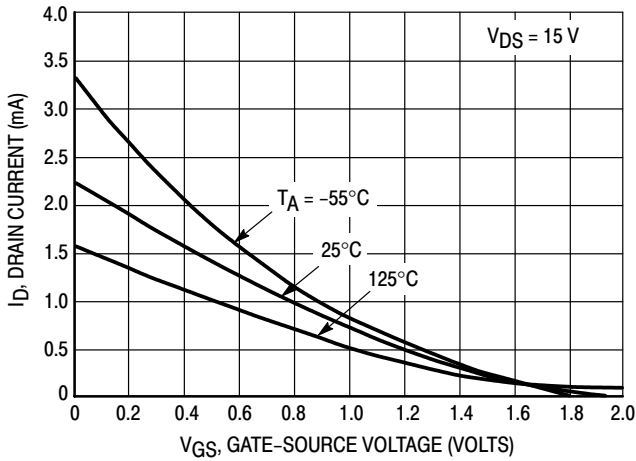


Figure 1. $V_{GS(off)} = 2.0$ Volts

FORWARD TRANSFER ADMITTANCE versus DRAIN CURRENT

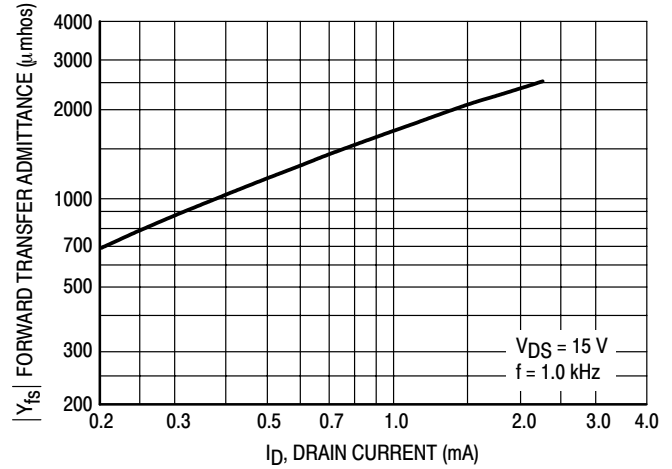


Figure 4. $V_{GS(off)} = 2.0$ Volts

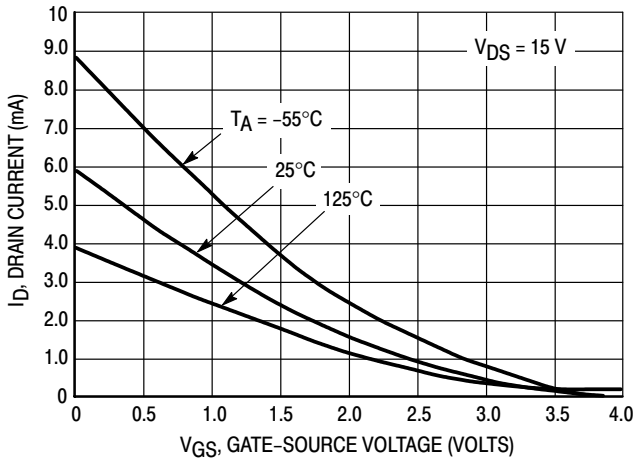


Figure 2. $V_{GS(off)} = 4.0$ Volts

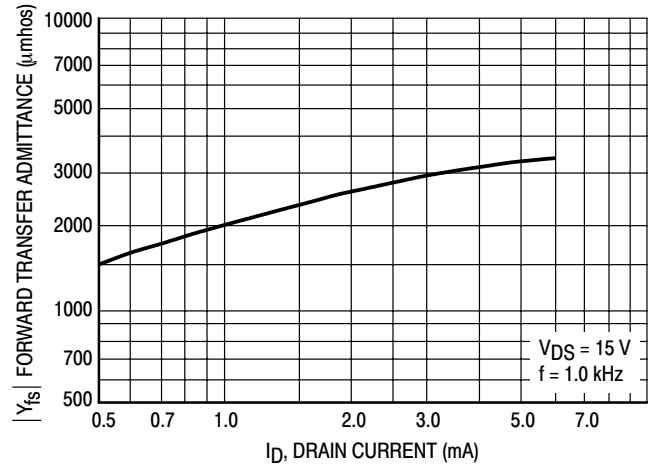


Figure 5. $V_{GS(off)} = 4.0$ Volts

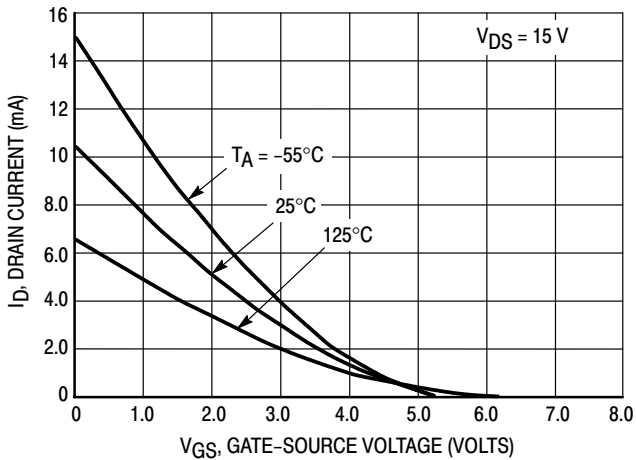


Figure 3. $V_{GS(off)} = 5.0$ Volts

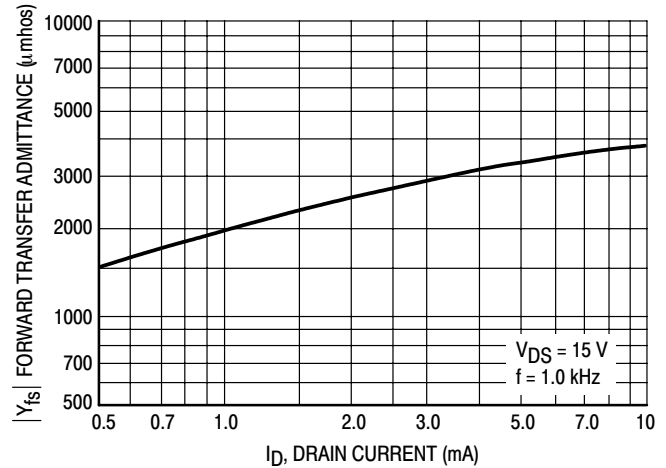


Figure 6. $V_{GS(off)} = 5.0$ Volts

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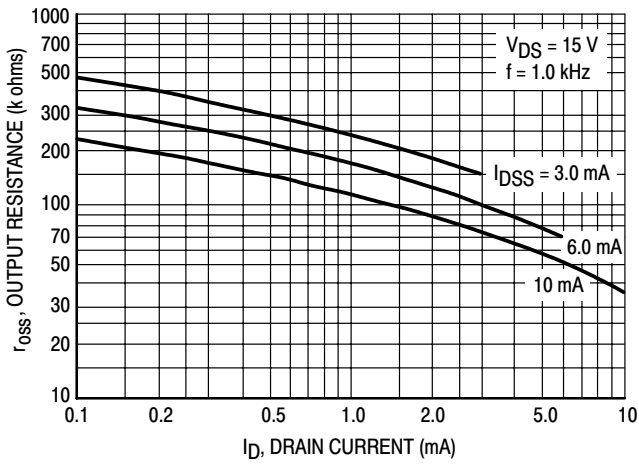


Figure 7. Output Resistance versus Drain Current

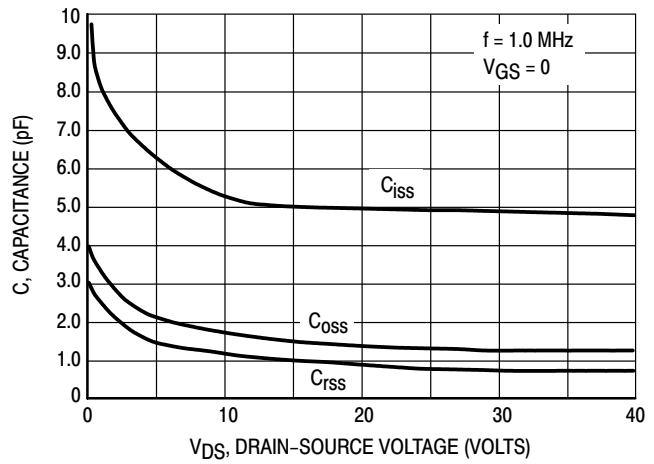


Figure 8. Capacitance versus Drain-Source Voltage

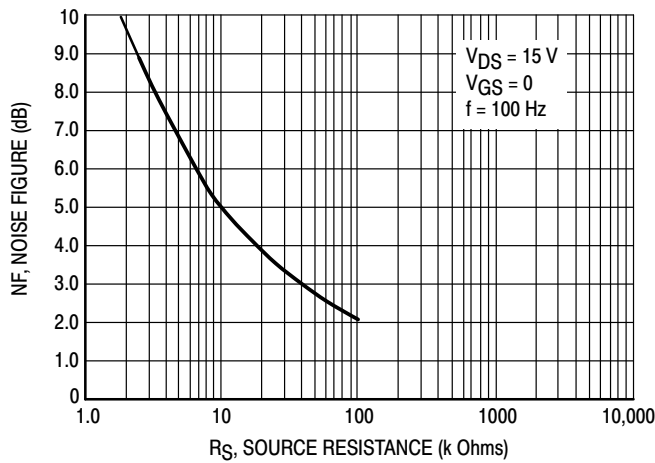
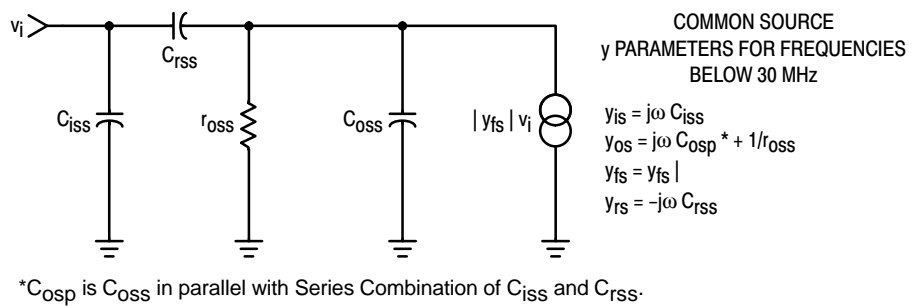


Figure 9. Noise Figure versus Source Resistance



NOTE:

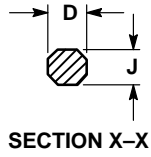
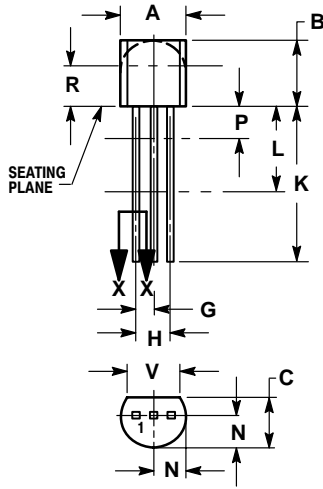
1. Graphical data is presented for dc conditions. Tabular data is given for pulsed conditions (Pulse Width = 630 ms, Duty Cycle = 10%).

Figure 10. Equivalent Low Frequency Circuit

2N5460 2N5461 2N5462

PACKAGE DIMENSIONS

TO-92 (TO-226AA)
CASE 29-11
ISSUE AL



STYLE 7:
PIN 1. SOURCE
2. DRAIN
3. GATE


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

Notes

Notes

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