

2N5265 thru 2N5270

**CASE 20-05, STYLE 5
TO-72 (TO-206AF)**

**JFET
GENERAL PURPOSE**

P-CHANNEL — DEPLETION

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	Vdc
Drain-Gate Voltage	V_{DG}	60	Vdc
Reverse Gate-Source Voltage	V_{GSR}	60	Vdc
Drain Current	I_D	20	mAdc
Forward Gate Current	I_{GF}	10	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 2.0	mW mW/ $^\circ\text{C}$
Junction Temperature Range	T_J	-65 to +175	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +200	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Gate-Source Breakdown Voltage ($I_G = 10 \mu\text{Adc}$, $V_{DS} = 0$)	$V_{(BR)GSS}$	60	—	Vdc
Gate Reverse Current ($V_{GS} = 30 \text{ Vdc}$, $V_{DS} = 0$) ($V_{GS} = 30 \text{ Vdc}$, $V_{DS} = 0$, $T_A = 150^\circ\text{C}$)	I_{GSS}	— —	2.0 2.0	nAdc μAdc
Gate Source Cutoff Voltage ($V_{DS} = 15 \text{ Vdc}$, $I_D = 1.0 \mu\text{Adc}$)	$V_{GS(off)}$	— — —	3.0 6.0 8.0	Vdc
Gate Source Voltage ($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.05 \text{ mAdc}$) ($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.08 \text{ mAdc}$) ($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.15 \text{ mAdc}$) ($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.25 \text{ mAdc}$) ($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.4 \text{ mAdc}$) ($V_{DS} = 15 \text{ Vdc}$, $I_D = 0.7 \text{ mAdc}$)	V_{GS}	2N5265 2N5266 2N5267 2N5268 2N5269 2N5270	0.3 0.4 1.0 1.0 2.0 2.0	1.5 2.0 4.0 4.0 6.0 6.0
ON CHARACTERISTICS				
Zero-Gate-Voltage Drain Current ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$)	I_{DSS}	2N5265 2N5266 2N5267 2N5268 2N5269 2N5270	0.5 0.8 1.5 2.5 4.0 7.0	1.0 1.6 3.0 5.0 8.0 14
SMALL-SIGNAL CHARACTERISTICS				
Forward Transfer Admittance ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$, $f = 1.0 \text{ kHz}$)	$ y_{fs} $	2N5265 2N5266 2N5267 2N5268 2N5269 2N5270	900 1000 1500 2000 2200 2500	2700 3000 3500 4000 4500 5000
Output Admittance Common Source ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$, $f = 1.0 \text{ kHz}$)	$ y_{os} $		—	75 μmhos

2N5265 thru 2N5270

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

Characteristic	Symbol	Min	Max	Unit
Common Source Forward Transconductance ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 0$, $f = 100\text{ MHz}$)	$Re(y_{fs})$			μmhos
2N5265		800	—	
2N5266		900	—	
2N5267		1400	—	
2N5268		1700	—	
2N5269		1900	—	
2N5270		2100	—	
Input Capacitance ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{iss}	—	7.0	pF
Reverse Transfer Capacitance ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{rss}	—	2.0	pF

FUNCTIONAL CHARACTERISTICS

Noise Figure ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 0$, $R_G = 1.0\text{ M ohm}$, $f = 100\text{ Hz}$, $BW = 1.0\text{ Hz}$)	NF	—	2.5	dB
Equivalent Short-Circuit Input Noise Voltage ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 0$, $f = 100\text{ Hz}$, $BW = 1.0\text{ Hz}$)	e_n	—	115	$\text{nV}/\sqrt{\text{Hz}}$

FIGURE 1-6 TRANSFER CHARACTERISTIC CURVES FOR MIN/MAX I_{DSS} LIMITS

FIGURE 1

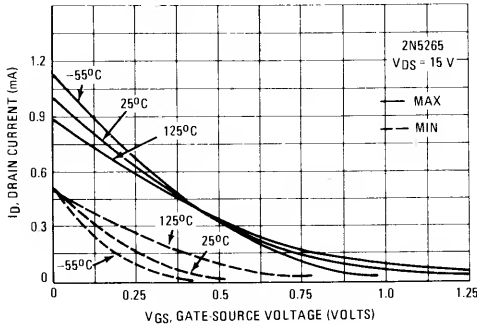


FIGURE 2

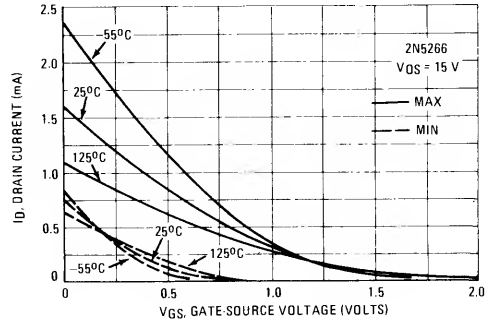


FIGURE 3

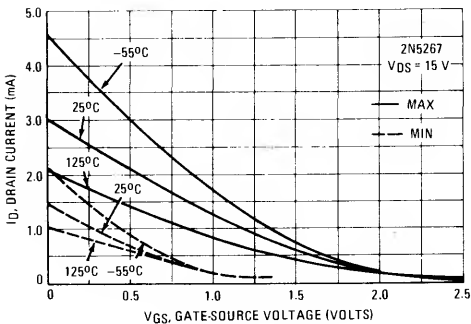


FIGURE 4

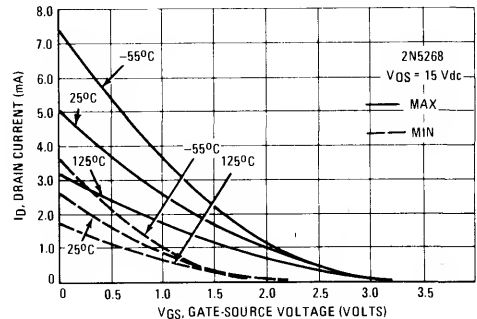


FIGURE 5

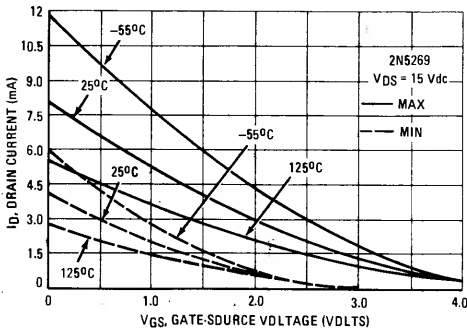
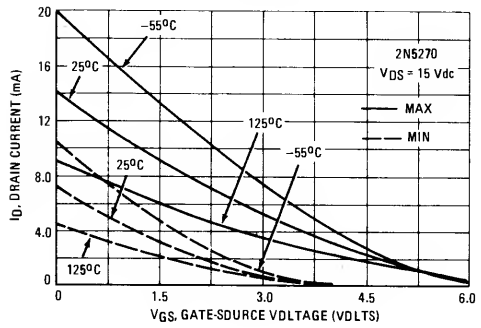


FIGURE 6



FIGURES 7-12 – TYPICAL AND MINIMUM FORWARD TRANSFER ADMITTANCE

FIGURE 7

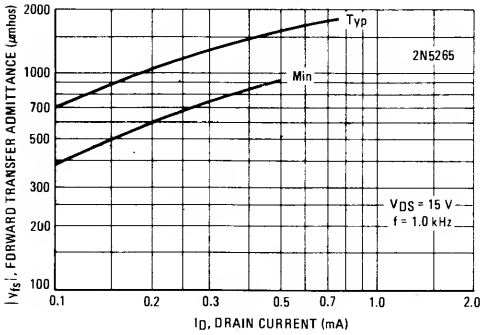


FIGURE 8

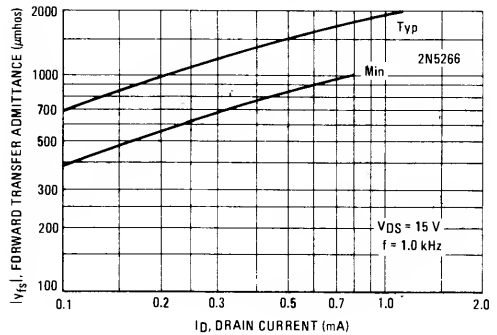


FIGURE 9

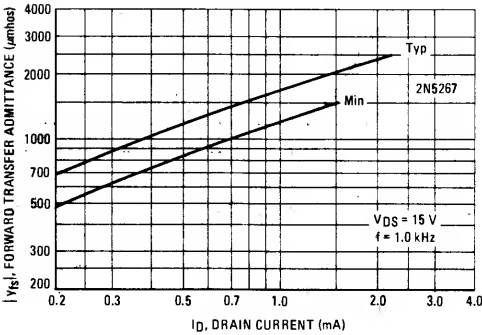


FIGURE 10

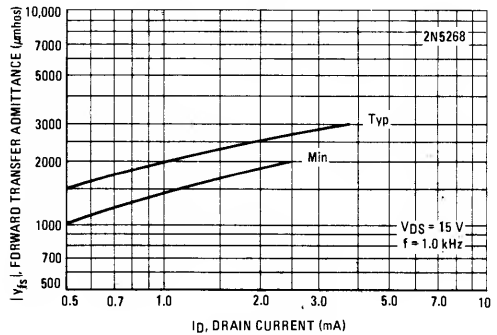


FIGURE 11

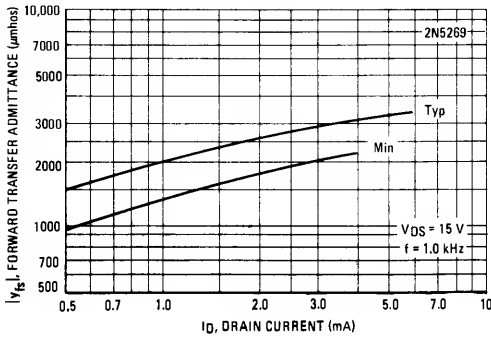
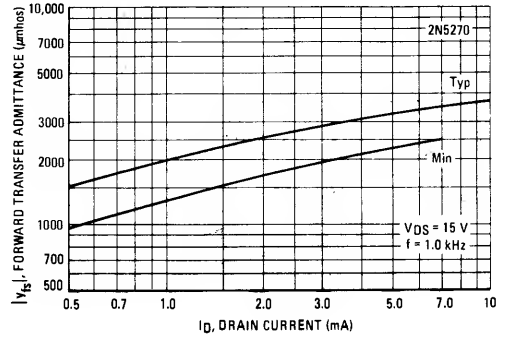


FIGURE 12



TYPICAL CURVES

FIGURE 13 – OUTPUT RESISTANCE versus DRAIN CURRENT

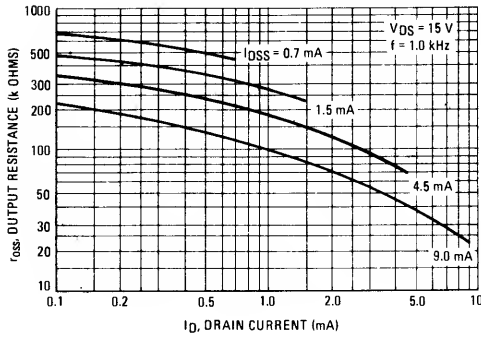


FIGURE 14 – CAPACITANCE versus DRAIN-SOURCE VOLTAGE

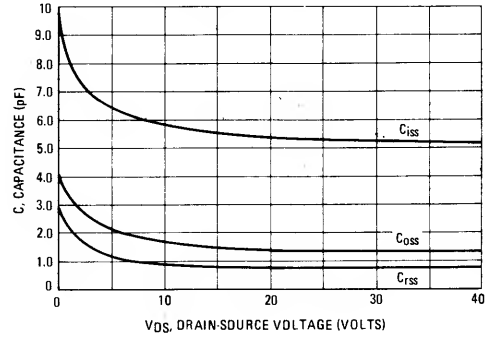


FIGURE 15 – NOISE FIGURE versus FREQUENCY

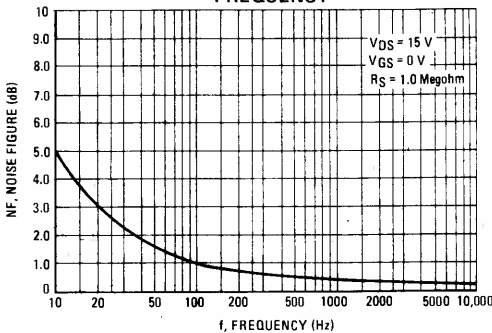


FIGURE 16 – NOISE FIGURE versus SOURCE RESISTANCE

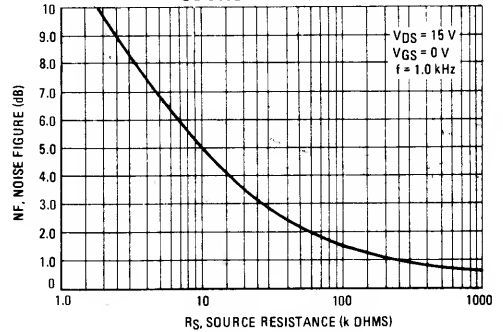


FIGURE 17 – DRAIN CURRENT TEMPERATURE COEFFICIENT versus DRAIN CURRENT

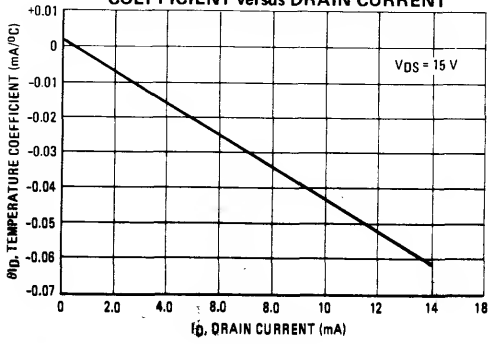


FIGURE 18 – FORWARD TRANSADMITTANCE COEFFICIENT versus DRAIN CURRENT

