

J107, J108 J109, J110

CASE 29-02, STYLE 5
TO-92 (TO-226AA)

JFET
GENERAL-PURPOSE
TRANSISTOR

N-CHANNEL — DEPLETION

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Gate Voltage	V_{DG}	-25	Vdc
Gate-Source Voltage	V_{GS}	-25	Vdc
Gate Current	I_G	10	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	310 2.82	mW mW/ $^\circ\text{C}$
Junction Temperature Range	T_J	135	$^\circ\text{C}$
Storage Channel Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Gate-Source Breakdown Voltage ($V_{DS} = 0$, $I_G = -10 \mu\text{Adc}$)	$V_{(BR)GSS}$	-25	—	—	Vdc
Gate Reverse Current ($V_{GS} = -15 \text{ Vdc}$, $V_{DS} = 0$) ($V_{GS} = -15 \text{ Vdc}$, $V_{DS} = 0$, $T_A = 100^\circ\text{C}$)	I_{GSS}	—	—	-3.0 -200	nAdc
Gate Source Cutoff Voltage ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ nAdc}$)	$V_{GS(off)}$	-0.5 -3.0 -2.0 -0.5	— — — —	-4.5 -10 -6.0 -4.0	Vdc
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ON CHARACTERISTICS

Zero-Gate-Voltage Drain Current(1) ($V_{DS} = 15$, $V_{GS} = 0$)	I_{DSS}	100 80 40 10	— — — —	— — — —	mAdc
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Drain-Source On-Resistance ($V_{DS} < 0.1 \text{ V}$, $V_{GS} = 0 \text{ V}$)	$r_{DS(on)}$	— — — —	— — — —	8.0 8.0 12 18	ohms
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SMALL-SIGNAL CHARACTERISTICS

Drain Gate + Source Gate On-Capacitance ($V_{DS} = 0 \text{ Vdc}$, $V_{GS} = 0$, $f = 1.0 \text{ MHz}$)	$C_{dg(on)}$ + $C_{sg(on)}$	—	—	85	pF
Drain Gate Off-Capacitance ($V_{DS} = 0 \text{ Vdc}$, $V_{GS} = -10 \text{ V}$, $f = 1.0 \text{ MHz}$)	$C_{dg(off)}$	—	—	15	pF
Source Gate Off-Capacitance ($V_{DS} = 0 \text{ Vdc}$, $V_{GS} = -10 \text{ V}$, $f = 1.0 \text{ MHz}$)	$C_{sg(off)}$	—	—	15	pF

(1) Pulse Duration 300 μs , Duty Cycle $\leq 2.0\%$.

FIGURE 1 — COMMON SOURCE INPUT CAPACITANCE versus GATE-SOURCE VOLTAGE

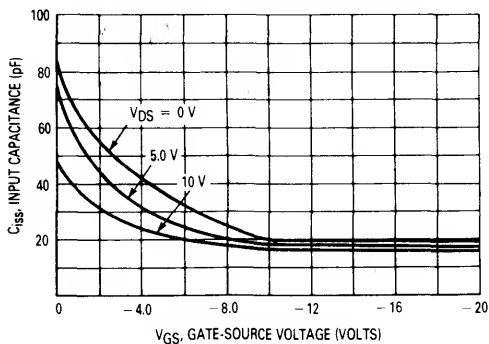


FIGURE 2 — COMMON SOURCE REVERSE FEEDBACK CAPACITANCE versus GATE-SOURCE VOLTAGE

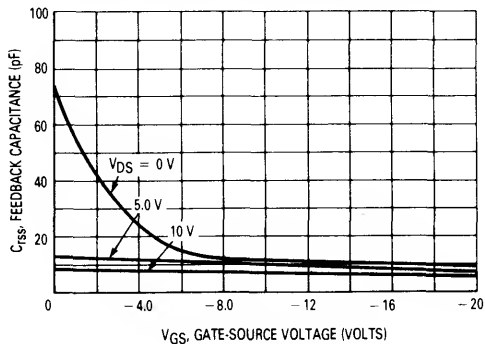


FIGURE 3 — ON-RESISTANCE versus GATE-SOURCE CUTOFF VOLTAGE

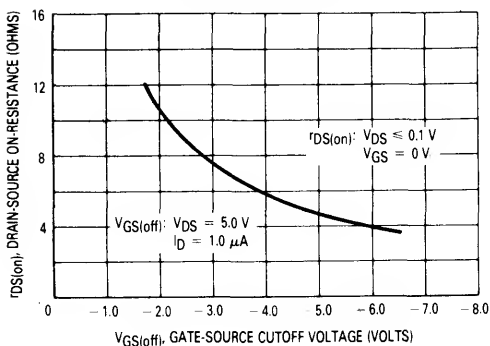


FIGURE 4 — OUTPUT CHARACTERISTIC

$V_{GS(off)} = -2.0$ V

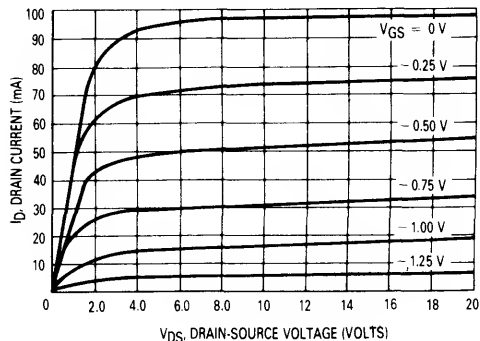


FIGURE 5 — OUTPUT CHARACTERISTIC

$V_{GS(off)} = -3.0$ V

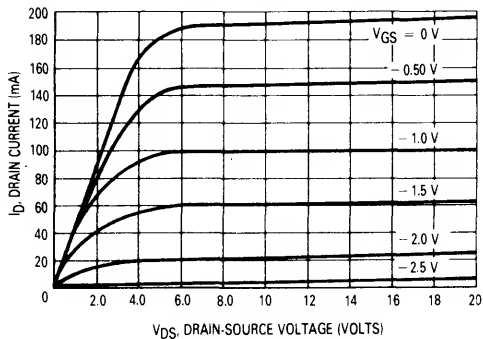


FIGURE 6 — OUTPUT CHARACTERISTIC

$V_{GS(off)} = -4.0$ V

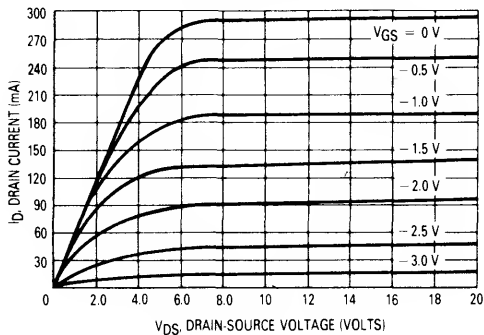


FIGURE 7 — OUTPUT CHARACTERISTIC

$V_{GS(off)} = -5.0\text{ V}$

