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°C Derate above 25°C	P_D	310 2.82	mW mW/°C
Junction Temperature Range	T_J	135	°C
Storage Channel Temperature Range	T_{stg}	−65 to +150	°C

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Gate-Source Breakdown Voltage (V_{DS} = 0, I_G = −10 μAdc)		$V_{(BR)GSS}$	−25	—	—	Vdc
Gate Reverse Current		I_{GSS}				nAdc
(V_{GS} = −15 Vdc, V_{DS} = 0)			—	—	−3.0	
(V_{GS} = −15 Vdc, V_{DS} = 0, T_A = 100°C)			—	—	−200	
Gate Source Cutoff Voltage		$V_{GS(off)}$				Vdc
(V_{DS} = 15 Vdc, I_D = 10 nAdc)	J107		−0.5	—	−4.5	
	J108		−3.0	—	−10	
	J109		−2.0	—	−6.0	
	J110		−0.5	—	−4.0	
ON CHARACTERISTICS						
Zero-Gate-Voltage Drain Current(1)		I_{DSS}				mAdc
(V_{DS} = 15, V_{GS} = 0)	J107		100	—	—	
	J108		80	—	—	
	J109		40	—	—	
	J110		10	—	—	
Drain-Source On-Resistance		$r_{DS(on)}$				ohms
(V_{DS} < 0.1 V, V_{GS} = 0 V)	J107		—	—	8.0	
	J108		—	—	8.0	
	J109		—	—	12	
	J110		—	—	18	
SMALL-SIGNAL CHARACTERISTICS						
Drain Gate + Source Gate On-Capacitance (V_{DS} = 0 Vdc, V_{GS} = 0, f = 1.0 MHz)		$C_{dg(on)}$ + $C_{sg(on)}$	—	—	85	pF
Drain Gate Off-Capacitance (V_{DS} = 0 Vdc, V_{GS} = −10 V, f = 1.0 MHz)		$C_{dg(off)}$	—	—	15	pF
Source Gate Off-Capacitance (V_{DS} = 0 Vdc, V_{GS} = −10 V, f = 1.0 MHz)		$C_{sg(off)}$	—	—	15	pF

(1) Pulse Duration 300 μs, Duty Cycle ≤ 2.0%.

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

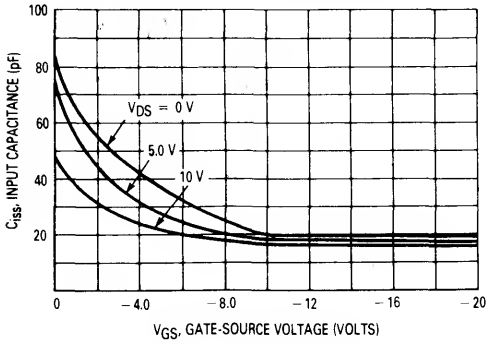


FIGURE 2 — COMMON SOURCE REVERSE FEEDBACK CAPACITANCE versus GATE-SOURCE VOLTAGE

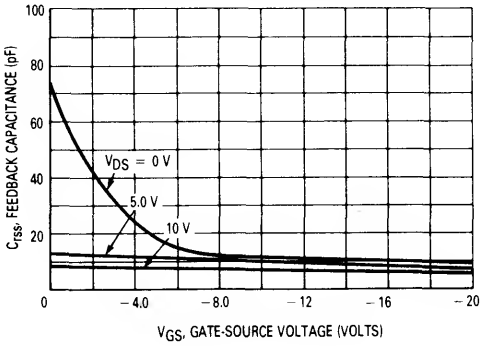


FIGURE 3 — ON-RESISTANCE versus GATE-SOURCE CUTOFF VOLTAGE

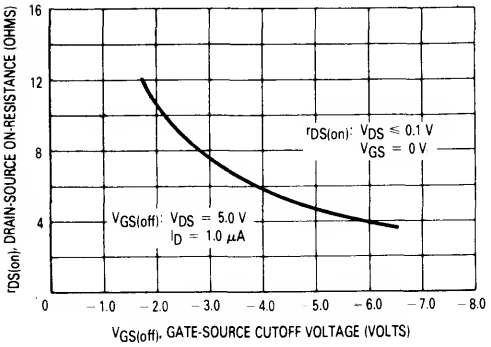


FIGURE 4 — OUTPUT CHARACTERISTIC

$V_{GS(off)}$ = −2.0 V

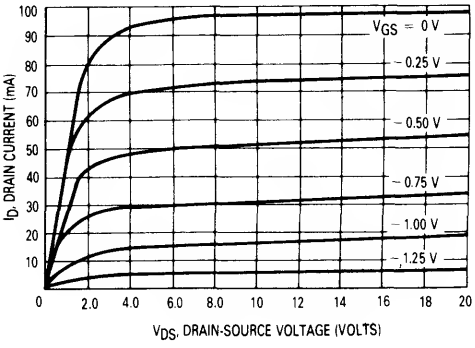


FIGURE 5 — OUTPUT CHARACTERISTIC

$V_{GS(off)}$ = −3.0 V

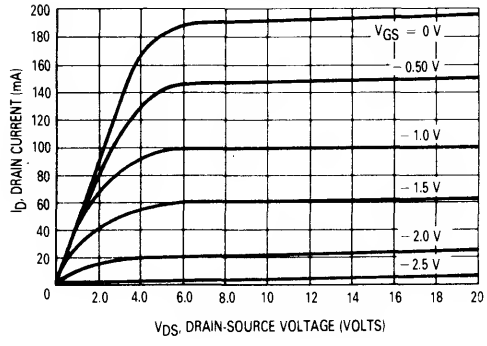


FIGURE 6 — OUTPUT CHARACTERISTIC

$V_{GS(off)}$ = −4.0 V

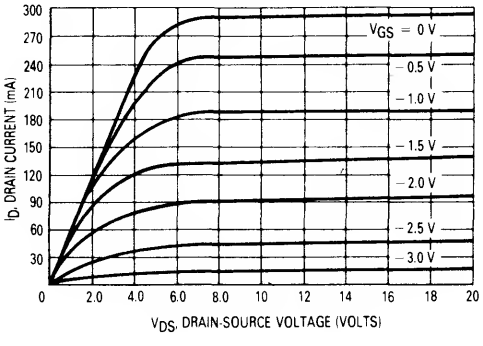
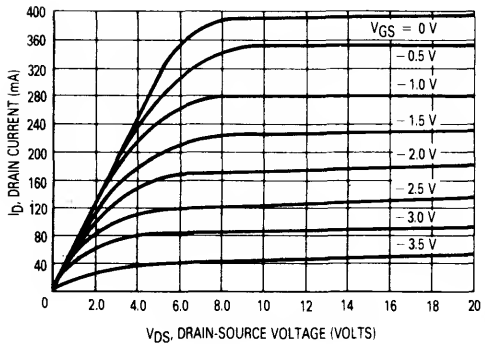


FIGURE 7 — OUTPUT CHARACTERISTIC

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



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