J110

JFET - General Purpose

N−Channel − Depletion

N−Channel Junction Field Effect Transistors, depletion mode (Type A) designed for general purpose audio amplifiers, analog switches and choppers.

- N−Channel for Higher Gain
- Drain and Source Interchangeable
- High AC Input Impedance
- High DC Input Resistance
- Low $R_{DS(on)} < 18\ \Omega$
- Fast Switching $t_{d(on)} + t_r = 8.0$ ns (Typ)
- Low Noise $\overline{en} = 6.0\ nV/\sqrt{Hz}$ @ 10 Hz (Typ)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Gate−Source Voltage	VG_S	−25	Vdc
Drain−Gate Voltage	V_{DG}	−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
Operating Junction Temp Range	T_J	135	°C
Storage Temperature Range	T_{stg}	−65 to +150	°C

ON Semiconductor®

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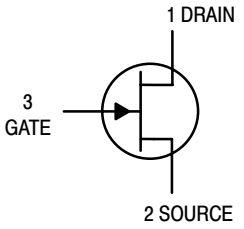
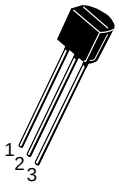
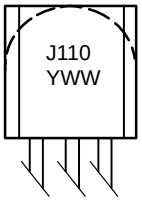




CASE 29
TO−92 (TO−226)
STYLE 5

MARKING DIAGRAM



Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping†
J110	TO−92	5000 Units/Box
J110RLRA	TO−92	2000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

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

Characteristic		Symbol	Min	Max	Unit
STATIC CHARACTERISTICS					
Gate−Source Breakdown Voltage	(I_G = −1.0 μAdc)	$V_{(BR)GSS}$	−25	−	Vdc
Gate Reverse Current	(V_{GS} = −15 Vdc, V_{DS} = 0) (V_{GS} = −15 Vdc, V_{DS} = 0, T_A = 100°C)	I_{GSS}	− −	−3.0 −200	nAdc
Gate−Source Cutoff Voltage	(V_{DS} = 5.0 Vdc, I_D = 1.0 μAdc)	$V_{GS(off)}$	−0.5	−4.0	Vdc
Drain Source On−Resistance	(V_{DS} ≤ 0.1 V, V_{GS} = 0 V)	$R_{DS(on)}$	−	18	Ω
Zero−Gate−Voltage Drain Current (Note 1)	(V_{DS} = 15 Vdc)	I_{DSS}	10	−	mAdc
DYNAMIC CHARACTERISTICS					
Drain−Gate and Source−Gate On−Capacitance (V_{DS} = V_{GS} = 0, f = 1.0 MHz)		$C_{dg(on)}$ + $C_{sg(on)}$	−	85	pF
Drain−Gate Off−Capacitance	(V_{GS} = −10 Vdc, f = 1.0 MHz)	$C_{dg(off)}$	−	15	pF
Source−Gate Off−Capacitance	(V_{GS} = −10 Vdc, f = 1.0 MHz)	$C_{sg(off)}$	−	15	pF

1. Pulse Width = 300 μs, Duty Cycle = 3.0%.

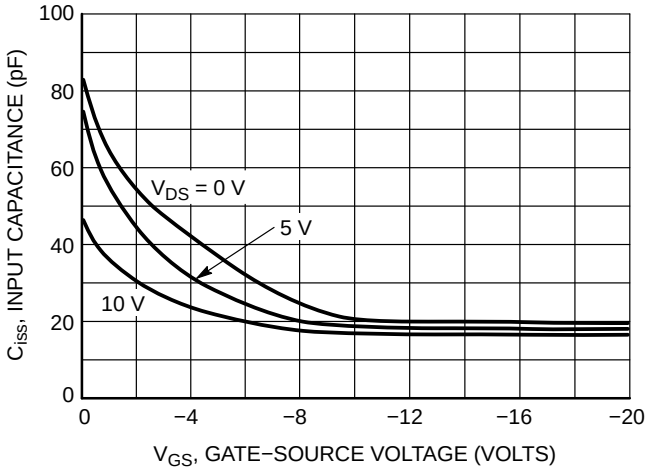


Figure 1. Common Source Input Capacitance versus Gate−Source Voltage

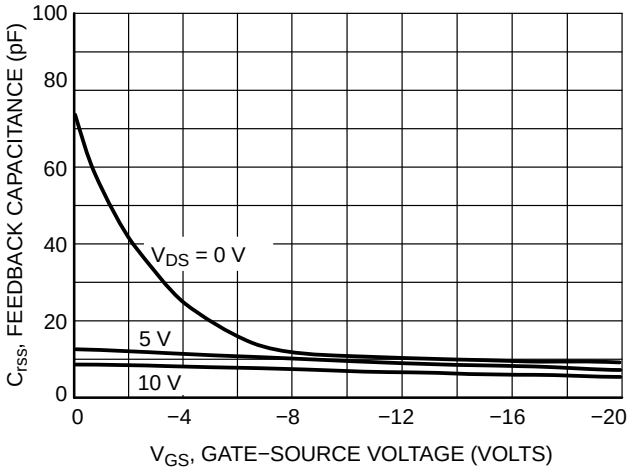


Figure 2. Common Source Reverse Feedback Capacitance versus Gate−Source Voltage

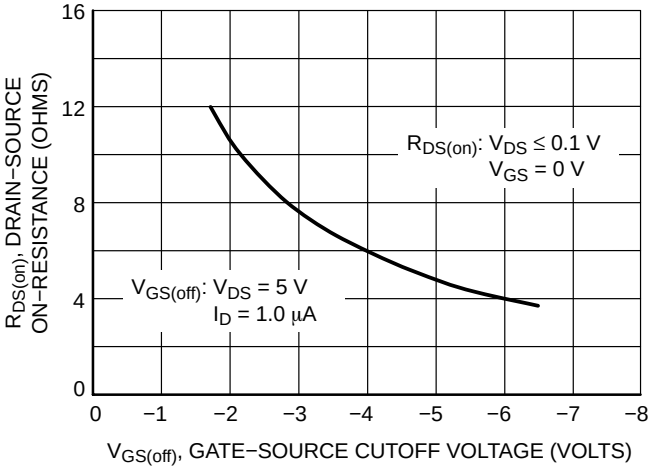


Figure 3. On−Resistance versus Gate−Source Cutoff Voltage

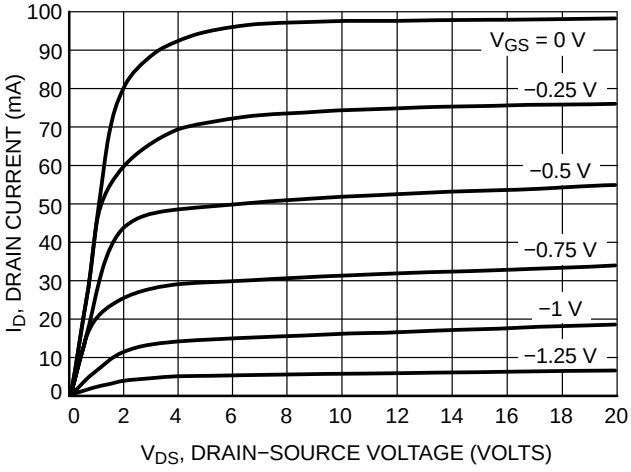


Figure 4. Output Characteristic $V_{GS(off)}$ = −2.0 V

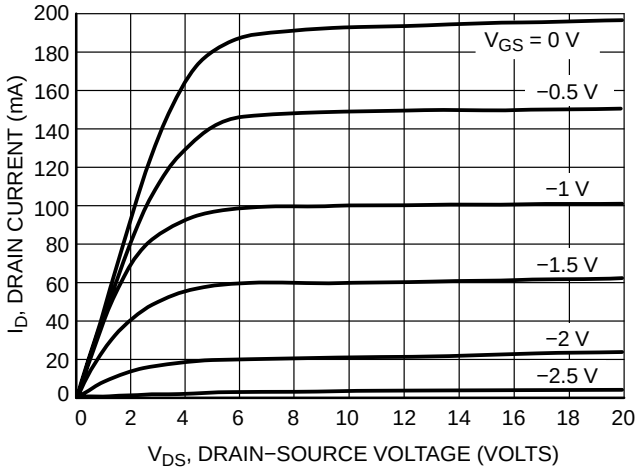


Figure 5. Output Characteristic
$V_{GS(off)}$ = −3.0 V

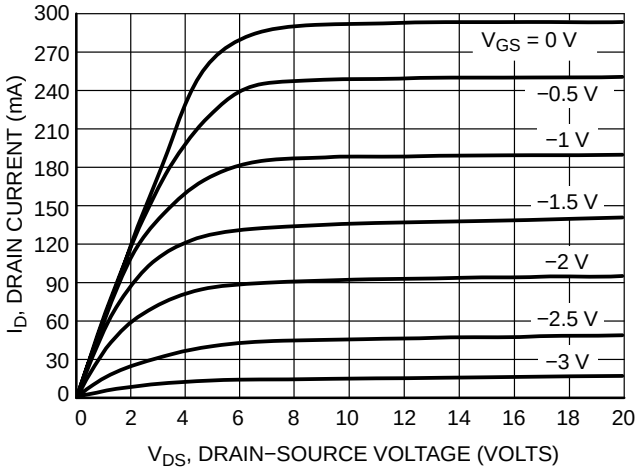


Figure 6. Output Characteristic
$V_{GS(off)}$ = −4.0 V

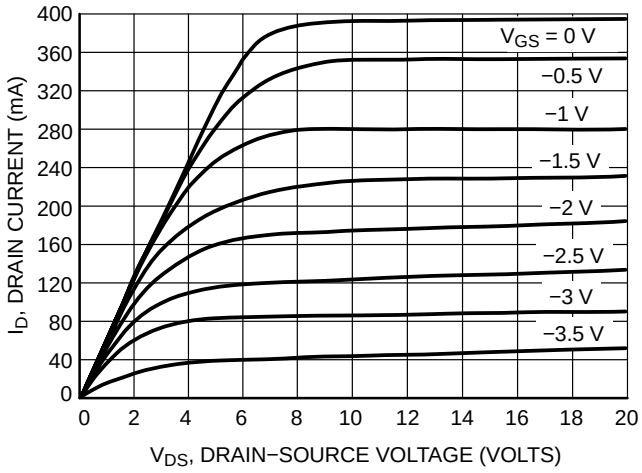
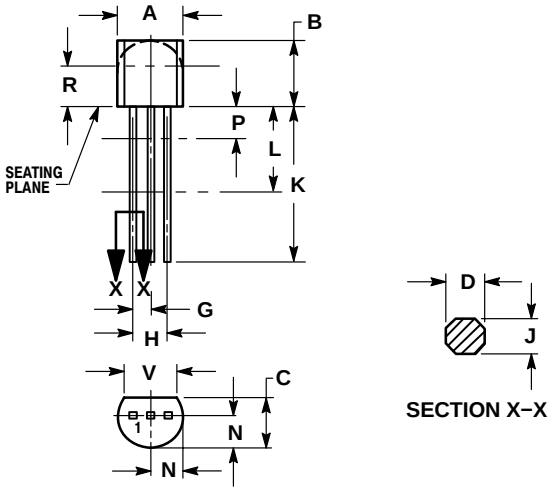


Figure 7. Output Characteristic
$V_{GS(off)}$ = −5.0 V

PACKAGE DIMENSIONS

TO−92 (TO−226)
CASE 29−11
ISSUE AL



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.

	INCHES		MILLIMETERS	
DIM	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	---

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
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ON Semiconductor Website: http://onsemi.com

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