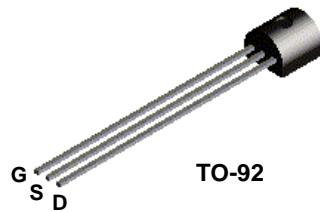


**J108  
J109  
J110**



**N-Channel Switch**

This device is designed for analog or digital switching applications where very low on resistance is mandatory. Sourced from Process 58.

**Absolute Maximum Ratings\***

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>DG</sub>	Drain-Gate Voltage	25	V
V <sub>GS</sub>	Gate-Source Voltage	- 25	V
I <sub>GF</sub>	Forward Gate Current	10	mA
T <sub>J</sub> , T <sub>stg</sub>	Operating and Storage Junction Temperature Range	-55 to +150	°C

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**NOTES:**

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

**Thermal Characteristics**

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		J108 / J109 / J110	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	125	°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	357	°C/W

# N-Channel Switch

(continued)

J108 / J109 / J110

## Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
<b>OFF CHARACTERISTICS</b>					
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = -10 \mu A, V_{DS} = 0$	-25		V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = -15 V, V_{DS} = 0$ $V_{GS} = -15 V, V_{DS} = 0, T_A = 100^\circ C$		-3.0 -200	nA nA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15 V, I_D = 10 nA$			
		<b>J108</b>	-3.0	-10	V
		<b>J109</b>	-2.0	-6.0	V
		<b>J110</b>	-0.5	-4.0	V

## ON CHARACTERISTICS

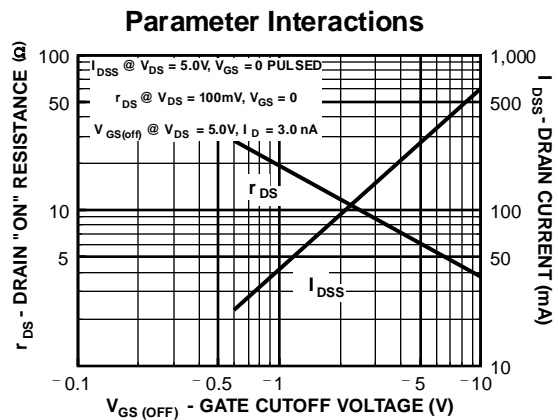
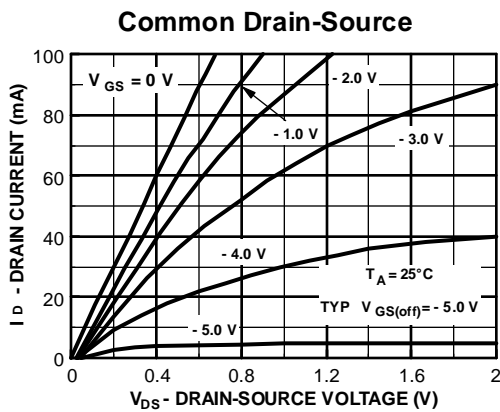
$I_{DSS}$	Zero-Gate Voltage Drain Current*	$V_{DS} = 15 V, I_{GS} = 0$			
		<b>J108</b>	80		mA
		<b>J109</b>	40		mA
		<b>J110</b>	10		mA
$r_{DS(on)}$	Drain-Source On Resistance	$V_{DS} \leq 0.1 V, V_{GS} = 0$			
		<b>J108</b>		8.0	$\Omega$
		<b>J109</b>		12	$\Omega$
		<b>J110</b>		18	$\Omega$

## SMALL SIGNAL CHARACTERISTICS

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

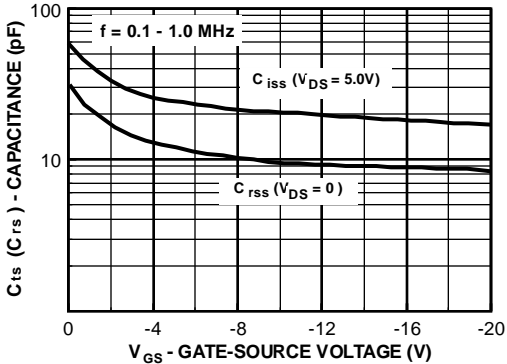
\*Pulse Test: Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 2.0\%$

## Typical Characteristics

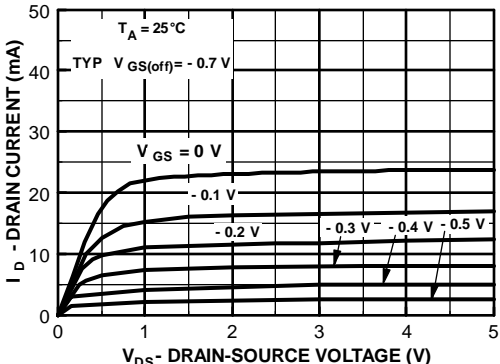


Typical Characteristics (continued)

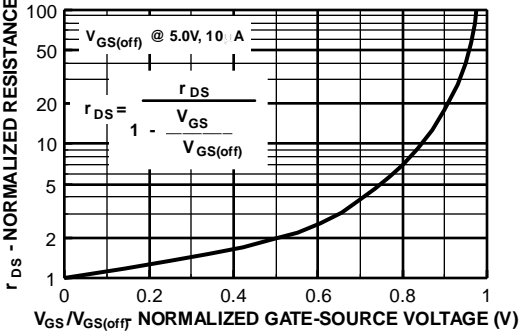
Common Drain-Source



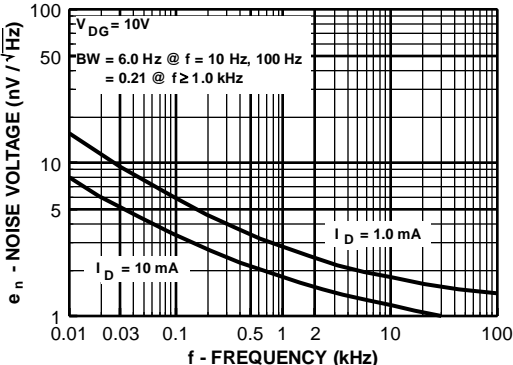
Common Drain-Source



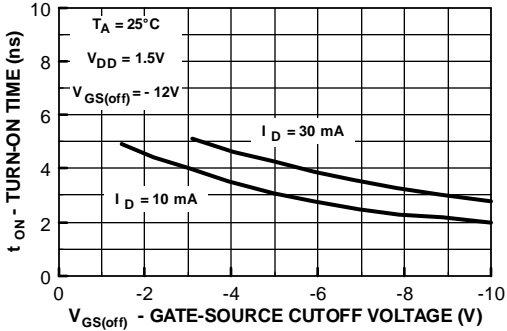
Normalized Drain Resistance vs Bias Voltage



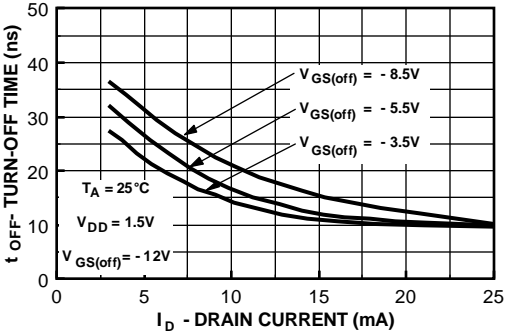
Noise Voltage vs Frequency



Switching Turn-On Time vs Gate-Source Cutoff Voltage



Switching Turn-Off Time vs Drain Current



Typical Characteristics (continued)

