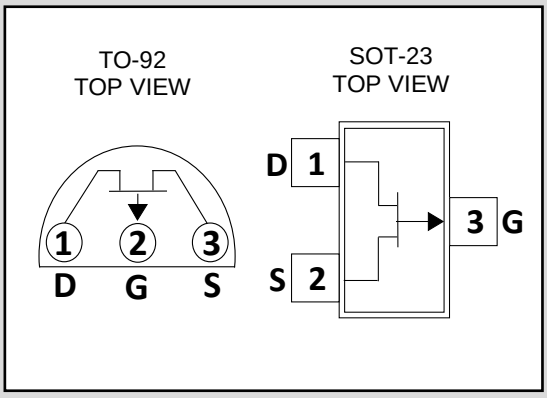
LINEAR SYSTEMS

Over 30 Years of Quality Through Innovation

LSJ289

LOW NOISE, LOW CAPACITANCE SINGLE P-CHANNEL JFET

FEATURES	
ULTRA LOW NOISE	e_n = 2.0nV/√Hz
LOW INPUT CAPACITANCE	C_{ISS} = 8pF
ABSOLUTE MAXIMUM RATINGS[1] @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-55 to +150°C
Junction Operating Temperature	-55 to +150°C
Maximum Power Dissipation	
Continuous Power Dissipation TA=25°C	300mW[4]
Maximum Currents	
Gate Forward Current	$I_{G(F)}$ = 10mA
Maximum Voltages	
Gate to Source	V_{GSO} = 50V
Gate to Drain	V_{GDO} = 50V



SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	50			V	V_{DS} = 0V, I_D = -1 µA
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage	1.5		5.0	V	V_{DS} = -15V, I_D = -1nA
I_{DSS}[2]	Drain to Source Saturation Current	-2.5		-30	mA	V_{DS} = -15V, V_{GS} = 0
I_G	Gate Operating Current		2		pA	V_{DG} = -15V, I_D = -200µA
I_{GSS}	Gate to Source Leakage Current			100	pA	V_{GS} = -15V, V_{DS} = 0V
G_{fs}	Full Conductance Transconductance	1500			µS	V_{DS} = -15V, V_{GS} = 0, *f* = 1kHz
			1500		µS	V_{DS} = -15V, I_D = -200µA, *f* = 1kHz
G_{OS}	Full Output Conductance		38		µS	V_{DS} = -15V, V_{GS} = 0, *f* = 1kHz
G_{OS}	Output Conductance		3		µS	V_{DS} = -15V, I_D = -200µA, *f* = 1kHz
NF	Noise Figure		0.5		dB	V_{DS} = -15V, V_{GS} = 0, R_G = 10MΩ, *f* = 100Hz
e_n	Noise Voltage		2.0		nV/√Hz	V_{DS} = -15V, I_D = -2mA, *f* = 1kHz,
e_n	Noise Voltage		3.5		nV/√Hz	V_{DS} = -15V, I_D = -2mA, *f* = 10Hz,
C_{ISS}	Common Source Input Capacitance		8		pF	V_{DS} = -15V, I_D = -500µA, *f* = 1MHz
C_{RSS}	Common Source Reverse Transfer Cap.		3		pF	

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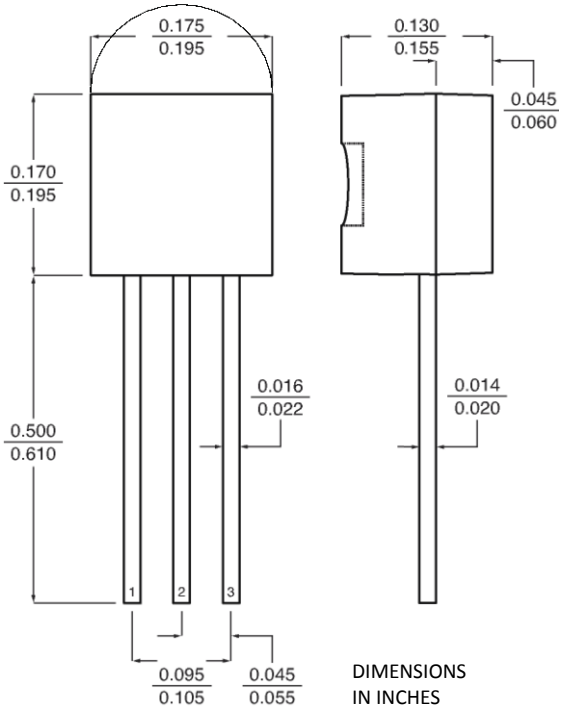
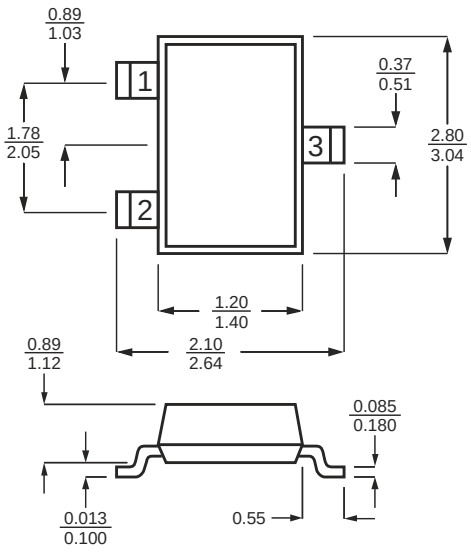


DIMENSIONS
IN INCHES

SOT-23



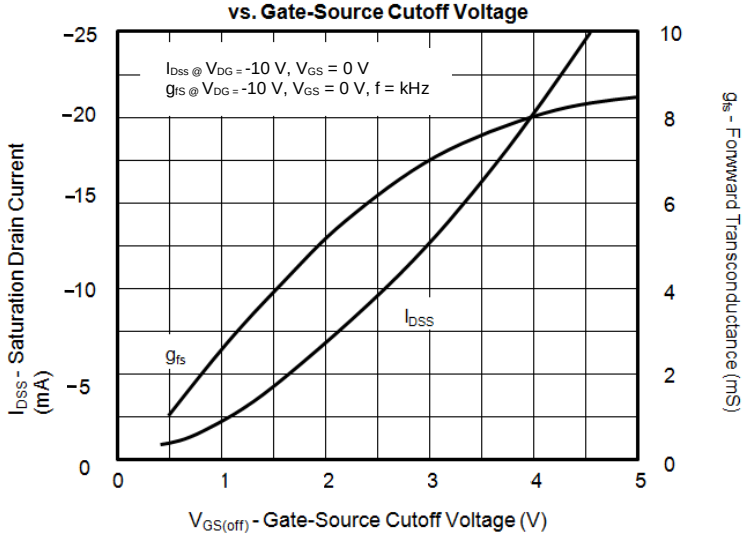
DIMENSIONS
IN MILLIMETERS

NOTES:

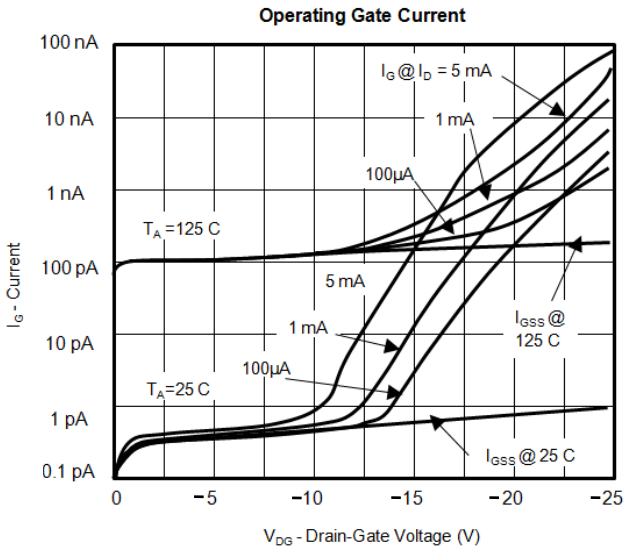
1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse Test: PW ≤ 300μs, Duty Cycle ≤ 3%.
3. All characteristics MIN/TYP/MAX numbers are absolute values. Negative values indicate electrical polarity only.
4. Derate 2.8 mW °C above 25°C.

Typical Characteristics

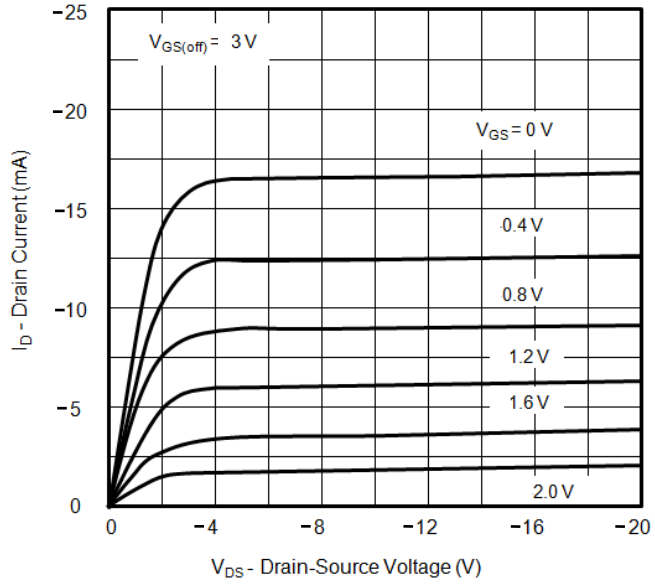
Drain Current and Transconductance vs. Gate-Source Cutoff Voltage



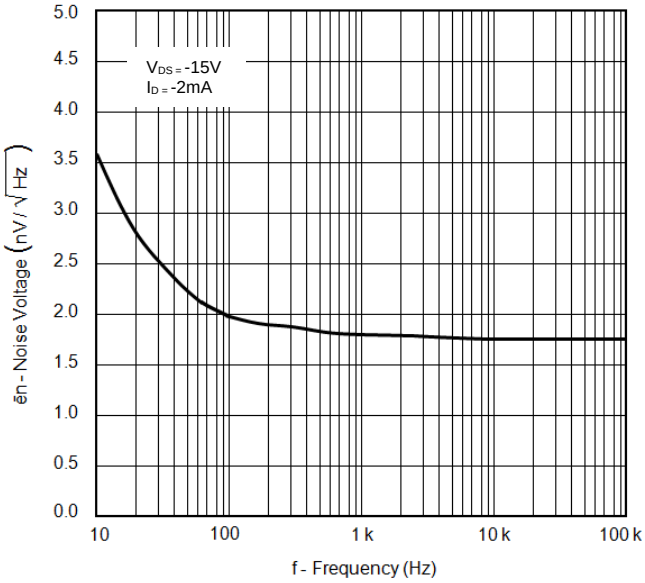
Operating Gate Current



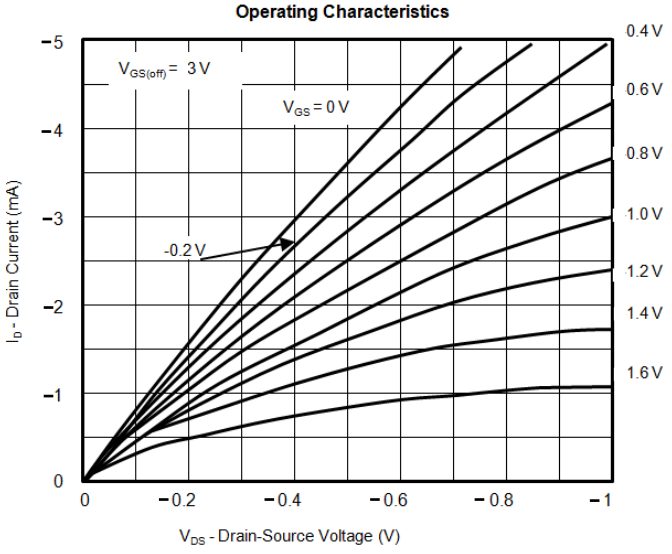
Output Characteristics



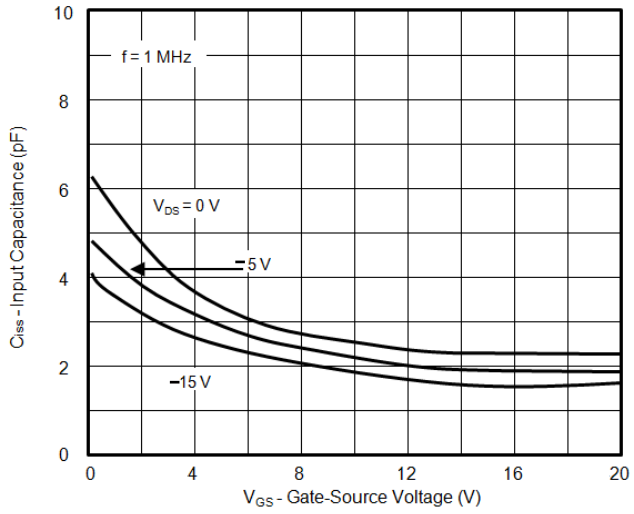
Equivalent Input Noise Voltage vs. Frequency



Operating Characteristics

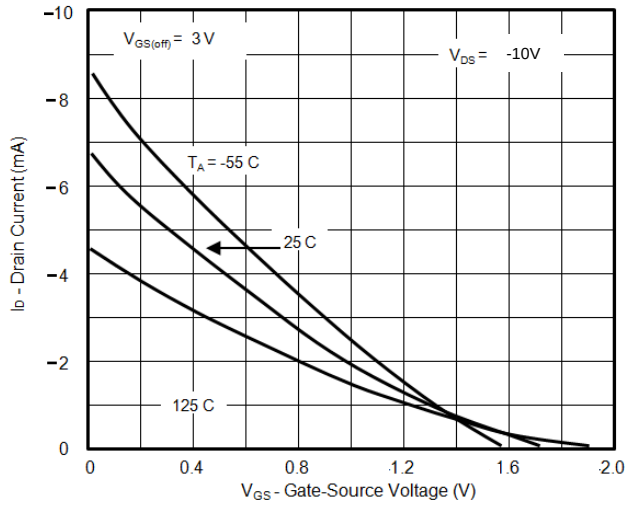


Common-Source Input Capacitance vs. Gate-Source Voltage

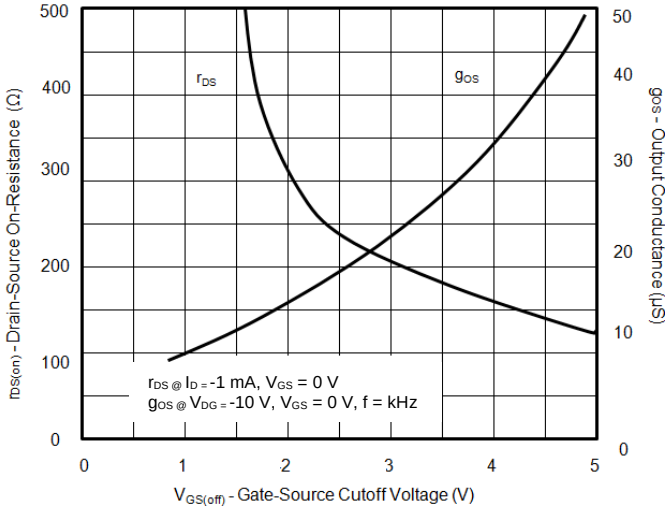


Typical Characteristics (Cont'd)

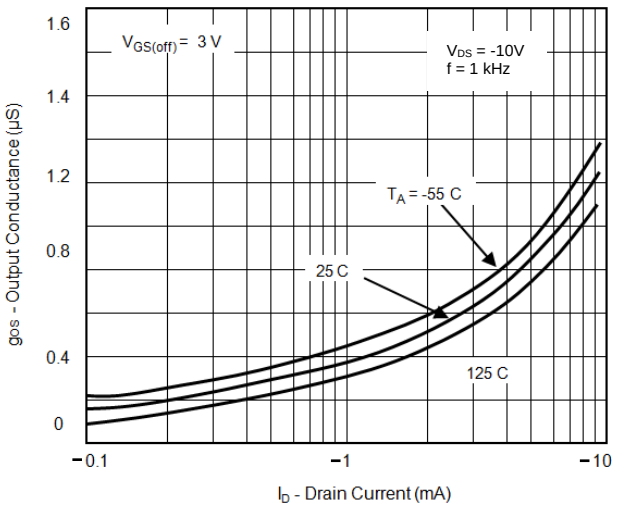
Transfer Characteristics



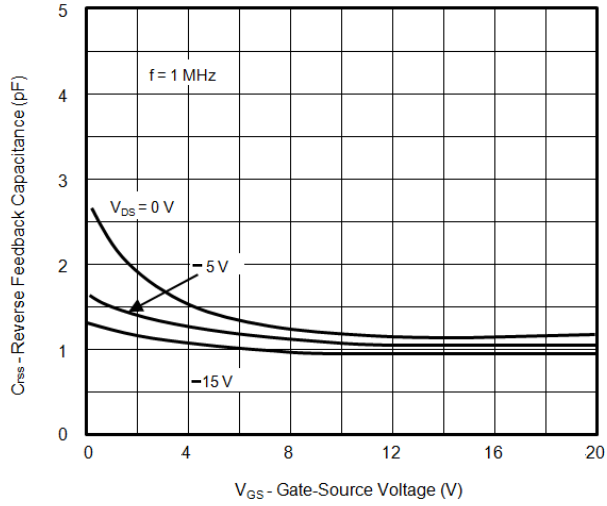
On-Resistance and Output Conductance vs. Gate-Source Cutoff Voltage



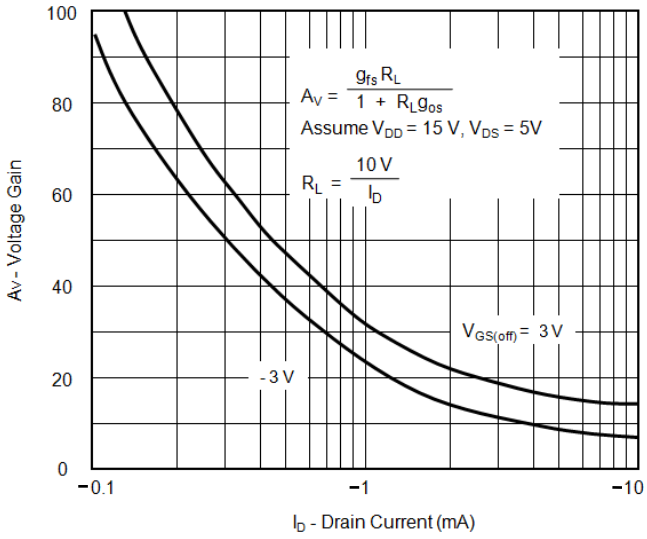
Output Conductance vs. Drain Current



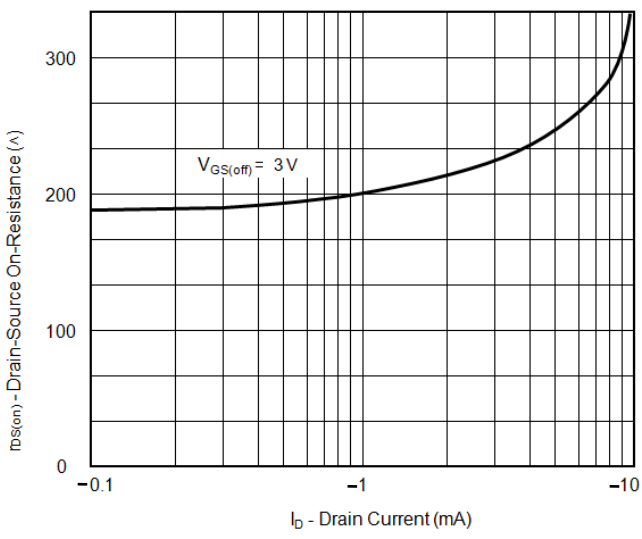
Common-Source Reverse Feedback Capacitance vs. Gate-Source Voltage



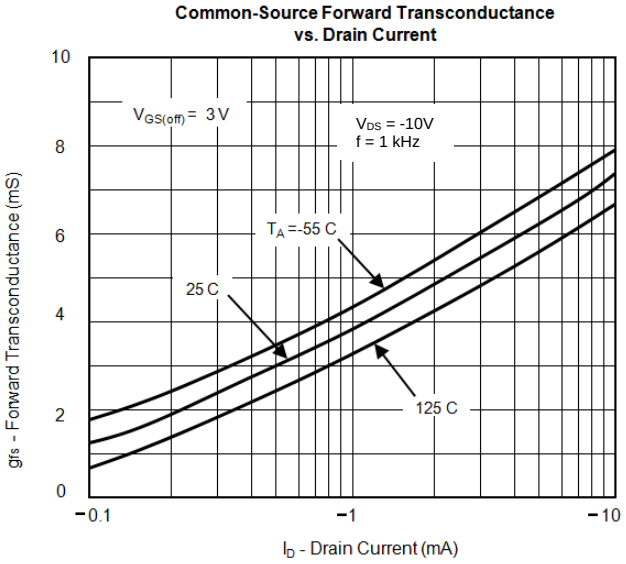
Circuit Voltage Gain vs. Drain Current



On-Resistance vs. Drain Current



Typical Characteristics (Cont'd)



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