

LINEAR SYSTEMS

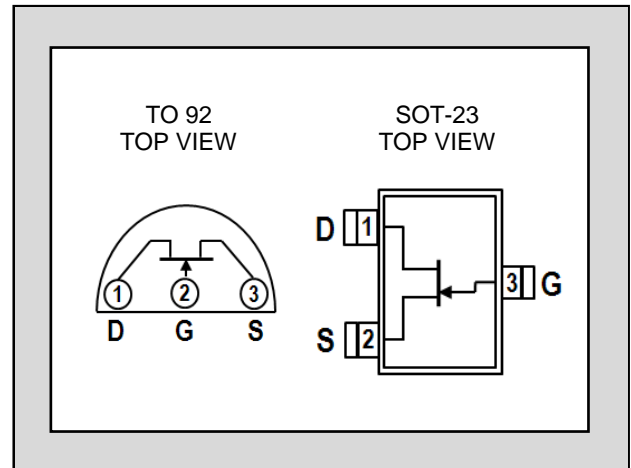
Twenty-Five Years Of Quality Through Innovation

FEATURES

ULTRA LOW NOISE	$e_n = 1.8\text{nV}/\sqrt{\text{Hz}}$
LOW INPUT CAPACITANCE	$C_{ISS} = 4\text{pF}$
ABSOLUTE MAXIMUM RATINGS¹ @ 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	$I_{G(F)} = 10\text{mA}$
Maximum Voltages	
Gate to Source	$V_{GSO} = 60\text{V}$
Gate to Drain	$V_{GDO} = 60\text{V}$

LSK189

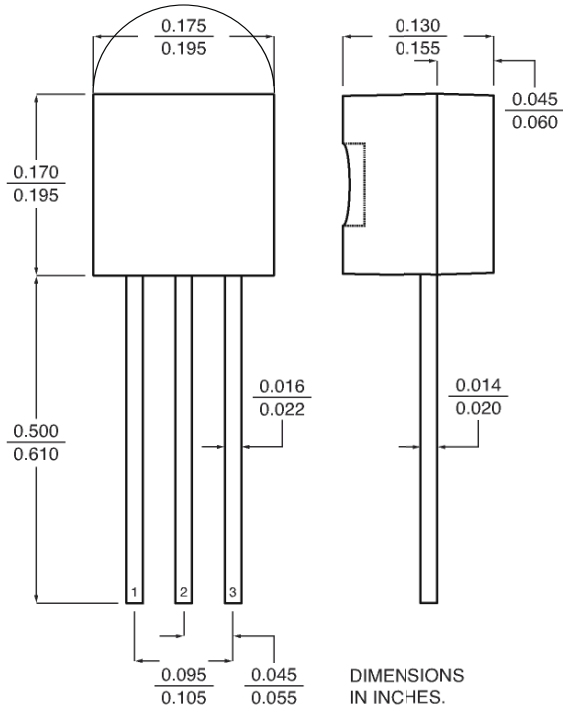
LOW NOISE, LOW CAPACITANCE
SINGLE N-CHANNEL JFET



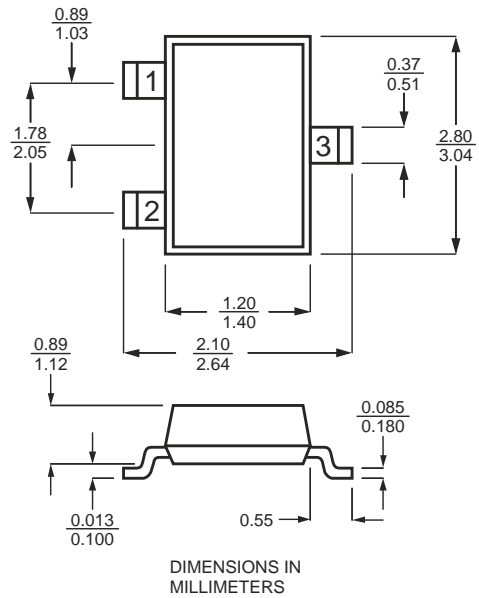
* For equivalent monolithic dual, see LSK489

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	-60			V	$V_{DS} = 0, I_D = -1\text{nA}$
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage	-1.5		-3.5	V	$V_{DS} = 15\text{V}, I_D = 1\text{nA}$
V_{GS}	Gate to Source Operating Voltage	-0.5		-3.5	V	$V_{DS} = 15\text{V}, I_D = 500\mu\text{A}$
I_{DSS}^2	Drain to Source Saturation Current	2.5	5	15	mA	$V_{DS} = 15\text{V}, V_{GS} = 0$
I_G	Gate Operating Current		-2	-25	pA	$V_{DG} = 15\text{V}, I_D = 200\mu\text{A}$ TA=125°C
I_G			-0.8	-10	nA	
I_{GSS}	Gate to Source Leakage Current			-100	pA	$V_{GS} = -15\text{V}$
G_{fs}	Full Conductance Transconductance	1500			μS	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{kHz}$
		1000	1500		μS	$V_{DS} = 15\text{V}, I_D = 500\mu\text{A}$
G_{OS}	Full Output Conductance			40	μS	$V_{DS} = 15\text{V}, V_{GS} = 0$
G_{OS}	Output Conductance		1.8	2.7	μS	$V_{DS} = 15\text{V}, I_D = 200\mu\text{A}$
NF	Noise Figure			0.5	dB	$V_{DS} = 15\text{V}, V_{GS} = 0, R_G = 10\text{M}\Omega,$ $f = 100\text{Hz}, \text{NBW} = 6\text{Hz}$
e_n	Noise Voltage		1.8	2.0	$\text{nV}/\sqrt{\text{Hz}}$	$V_{DS} = 15\text{V}, I_D = 2\text{mA}, f = 1\text{kHz},$ $\text{NBW} = 1\text{Hz}$
e_n	Noise Voltage		2.8	3.5	$\text{nV}/\sqrt{\text{Hz}}$	$V_{DS} = 15\text{V}, I_D = 2\text{mA}, f = 10\text{Hz},$ $\text{NBW} = 1\text{Hz}$
C_{ISS}	Common Source Input Capacitance		4	8	pF	$V_{DS} = 15\text{V}, I_D = 500\mu\text{A}, f = 1\text{MHz}$
C_{RSS}	Common Source Reverse Transfer Cap.			3	pF	

TO-92



SOT-23

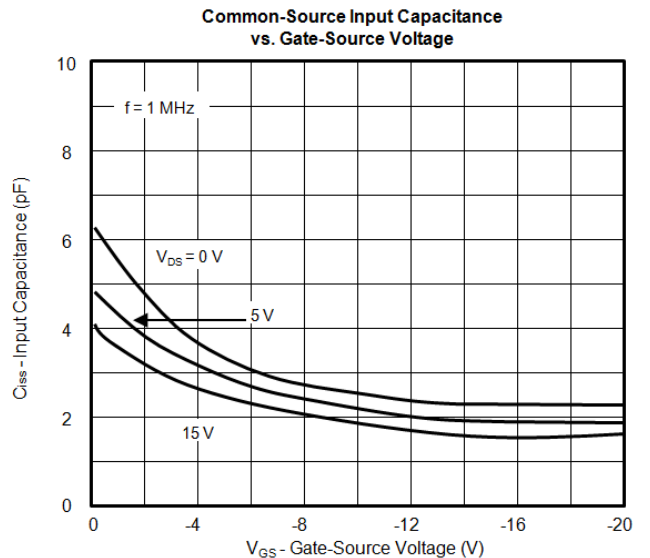
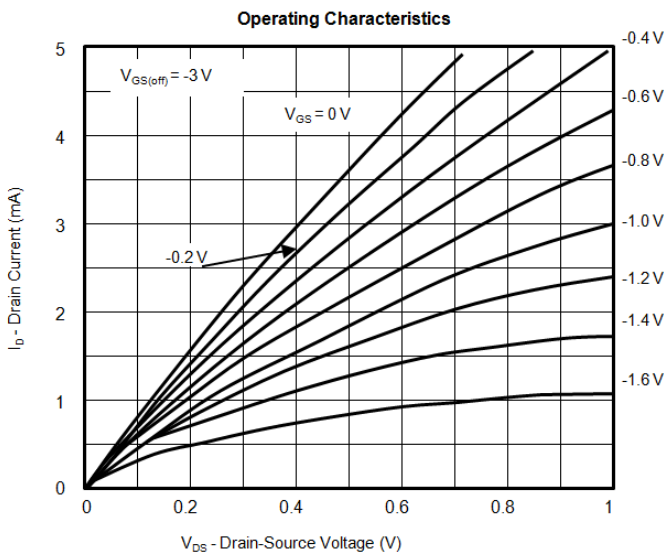
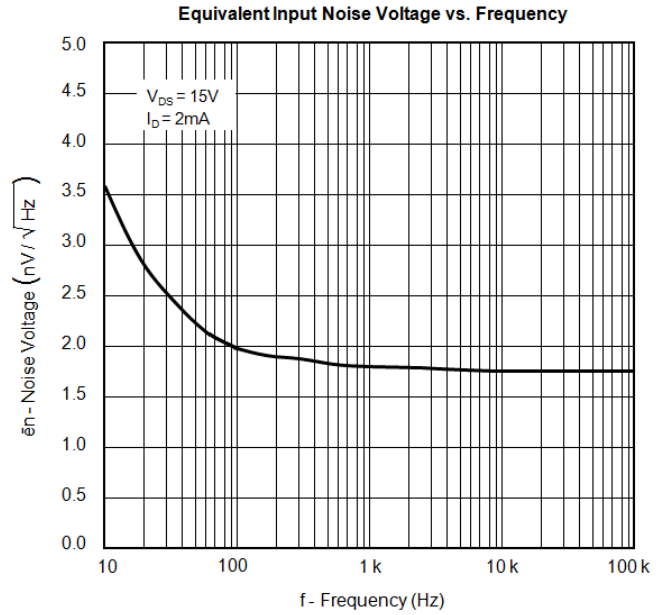
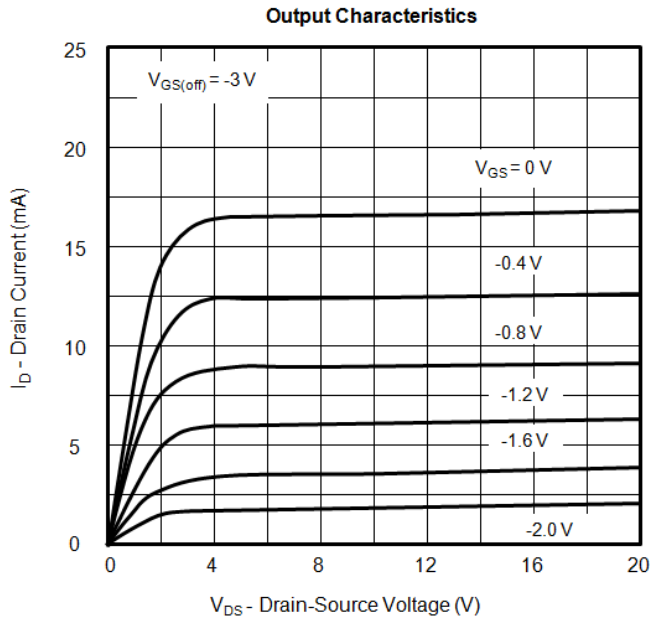
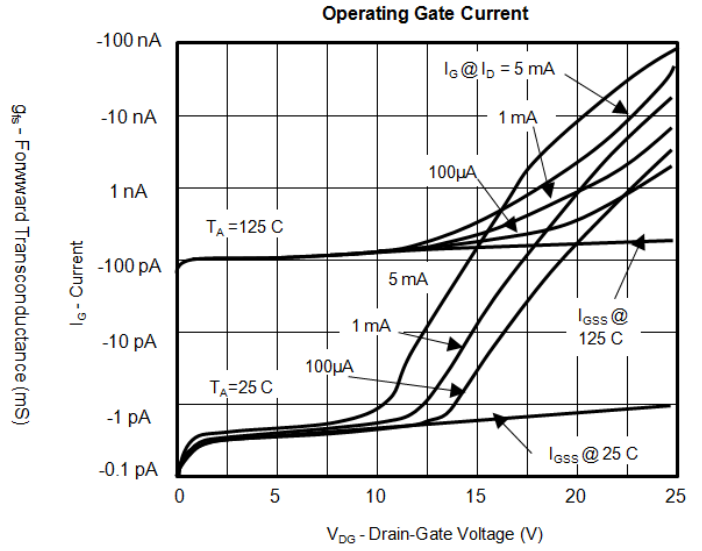
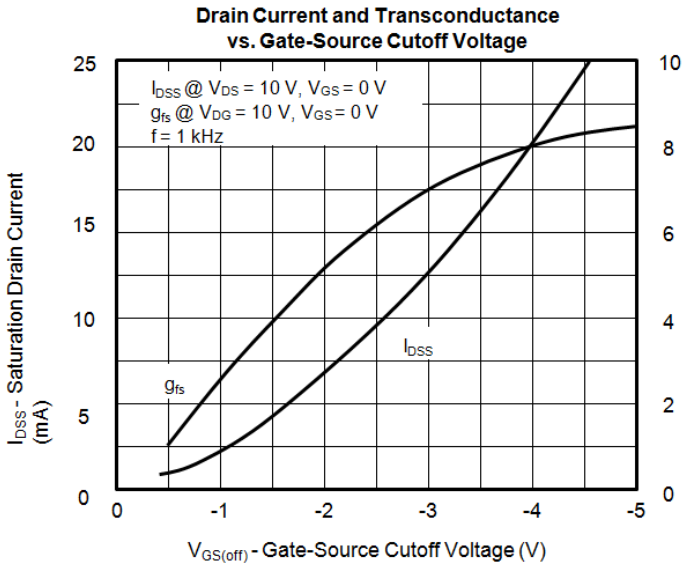


NOTES:

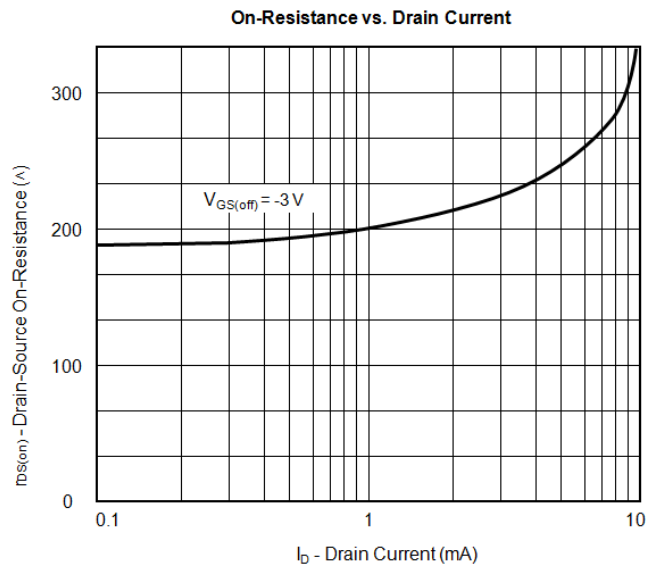
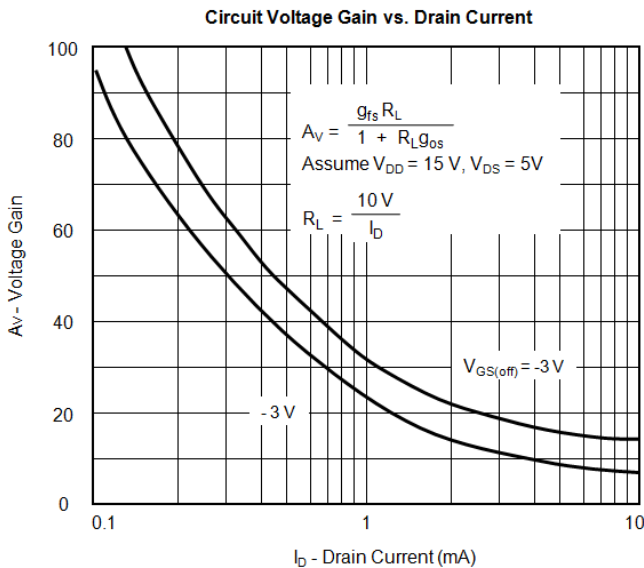
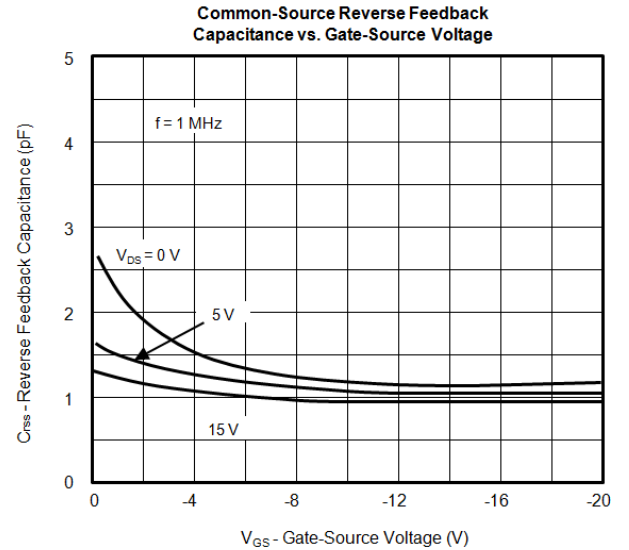
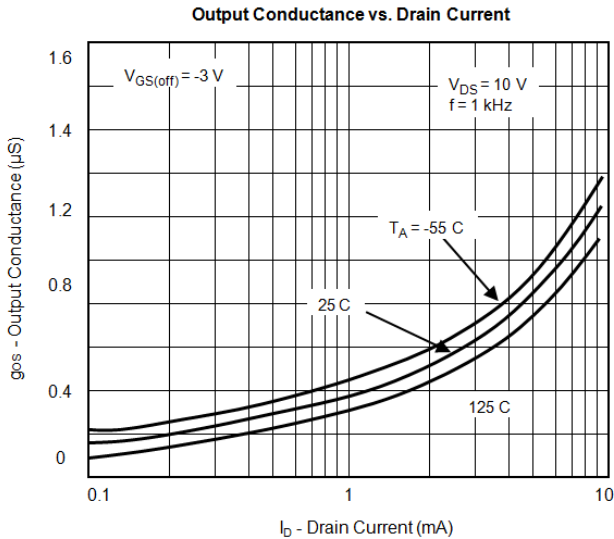
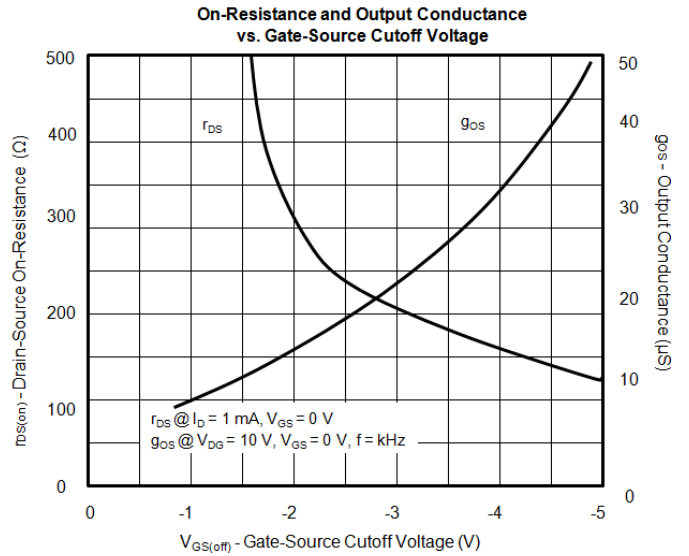
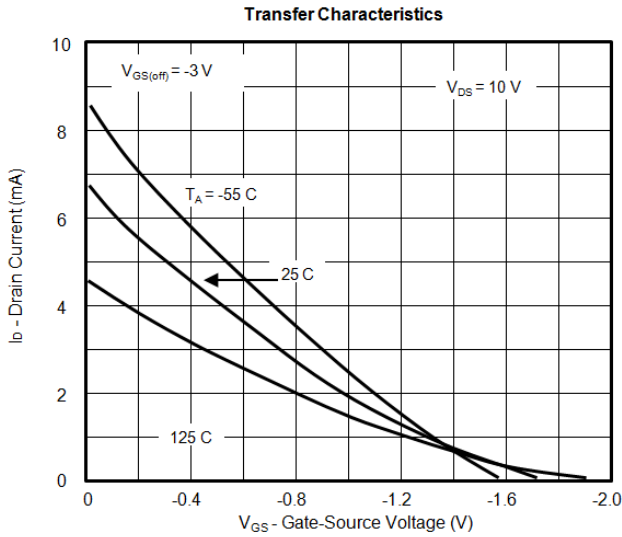
1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse Test: $PW \leq 300\mu s$, Duty Cycle $\leq 3\%$.
3. All characteristics MIN/TYP/MAX numbers are absolute values. Negative values indicate electrical polarity only.
4. Derate 2.8 mW $^{\circ}C$ above 25 $^{\circ}C$.

Information furnished by Linear Integrated Systems is believed to be accurate and reliable. However, no responsibility is assumed for its use; nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Linear Integrated Systems.

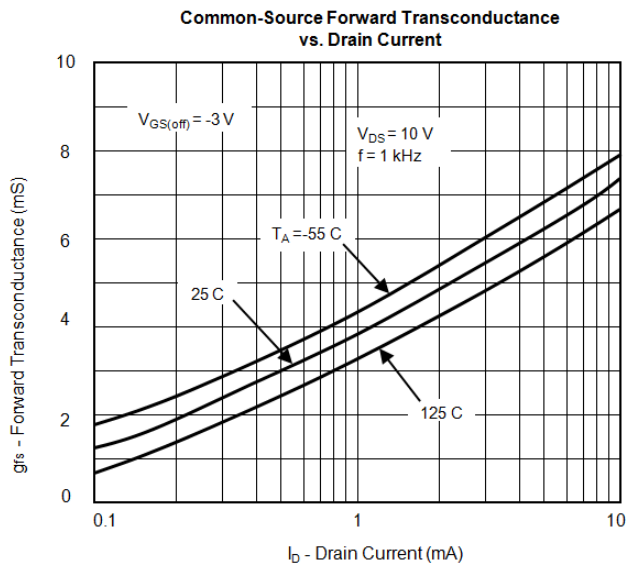
Typical Characteristics



Typical Characteristics (Cont'd)



Typical Characteristics (Cont'd)



Linear Integrated Systems (LIS) is a 25-year-old, third-generation precision semiconductor company providing high-quality discrete components. Expertise brought to LIS is based on processes and products developed at Amelco, Union Carbide, Intersil and Micro Power Systems by company President John H. Hall. Hall, a protégé of Silicon Valley legend Dr. Jean Hoerni, was the director of IC Development at Union Carbide, Co-Founder and Vice President of R&D at Intersil, and Founder/President of Micro Power Systems.