

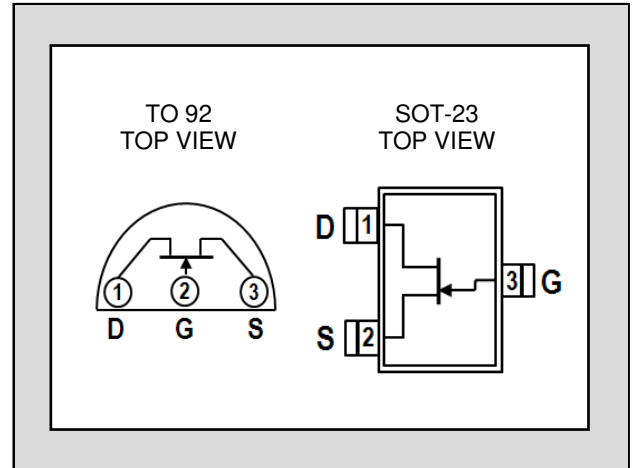
LINEAR SYSTEMS

Over 30 Years of Quality Through Innovation

LSK189

LOW NOISE, LOW CAPACITANCE
SINGLE N-CHANNEL JFET

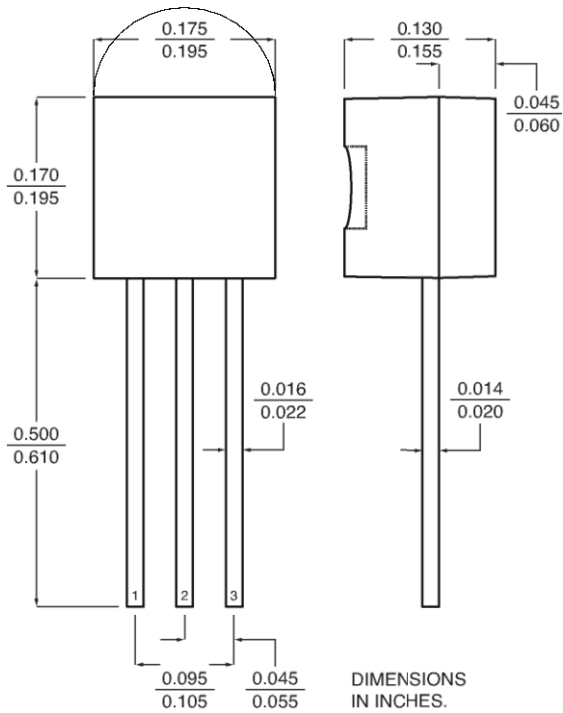
FEATURES	
ULTRA LOW NOISE	$e_n = 1.8\text{nV}/\sqrt{\text{Hz}}$
LOW INPUT CAPACITANCE	$C_{ISS} = 4\text{pF}$
ABSOLUTE MAXIMUM RATINGS¹ @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-55 to +150°C
Junction Operating Temperature	-55 to +150°C
Maximum Power Dissipation	
Continuous 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	$V_{GDO} = 60\text{V}$



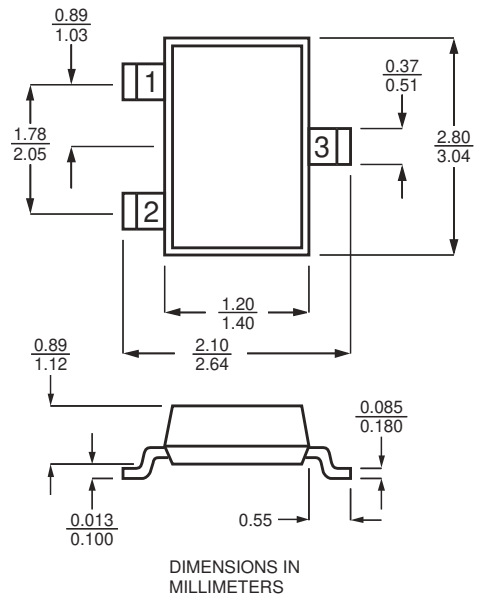
* For equivalent monolithic dual, see LSK489

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

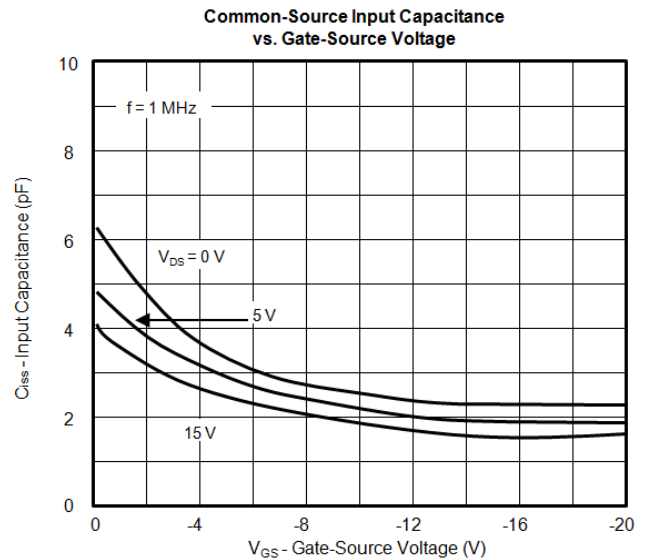
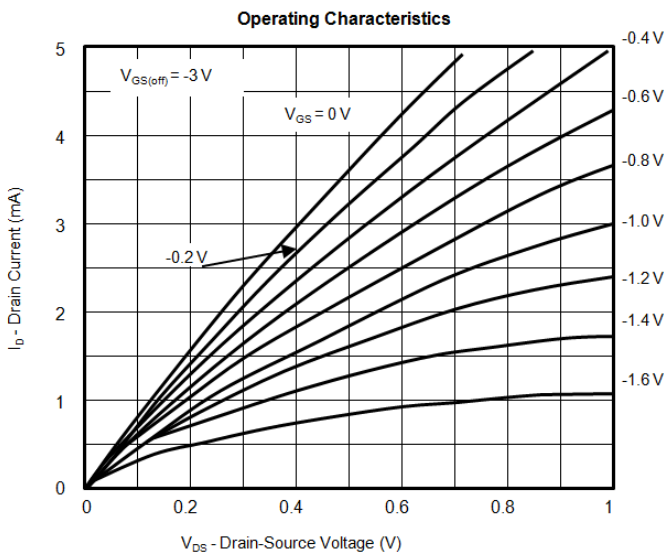
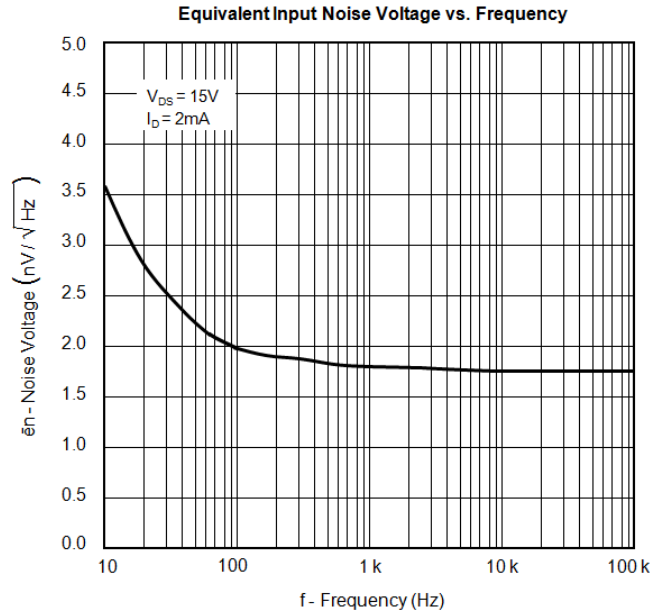
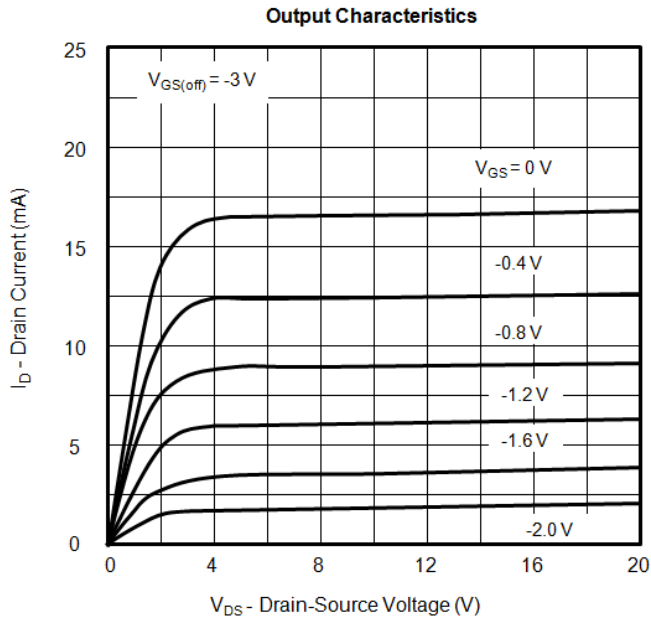
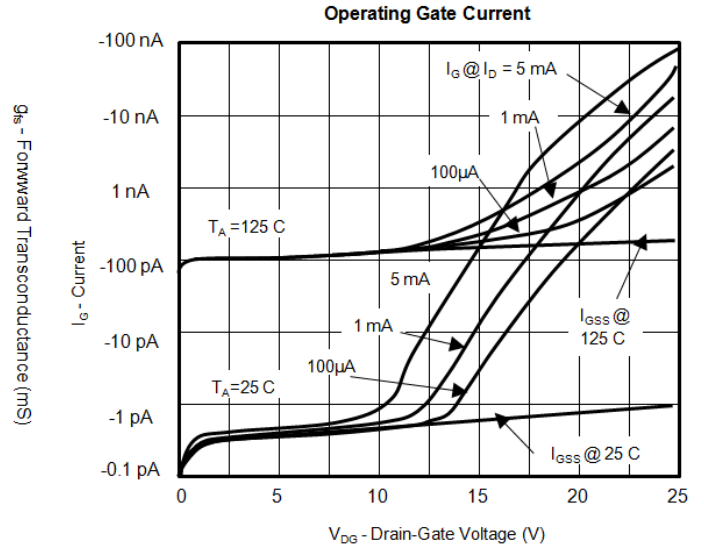
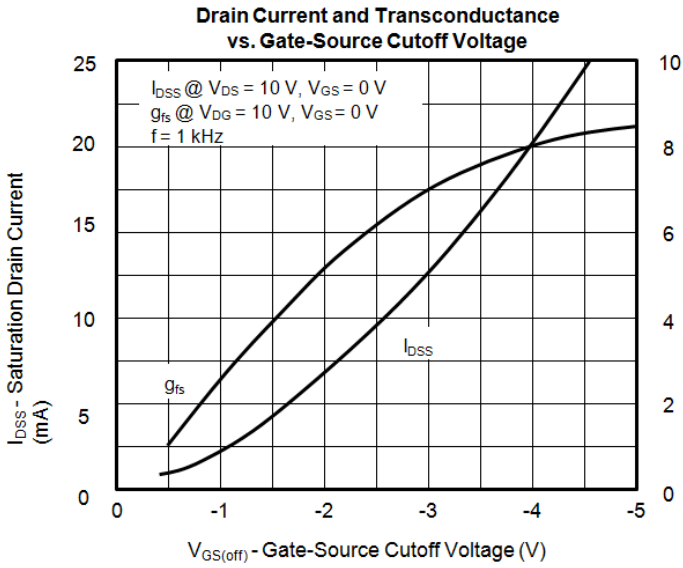


NOTES:

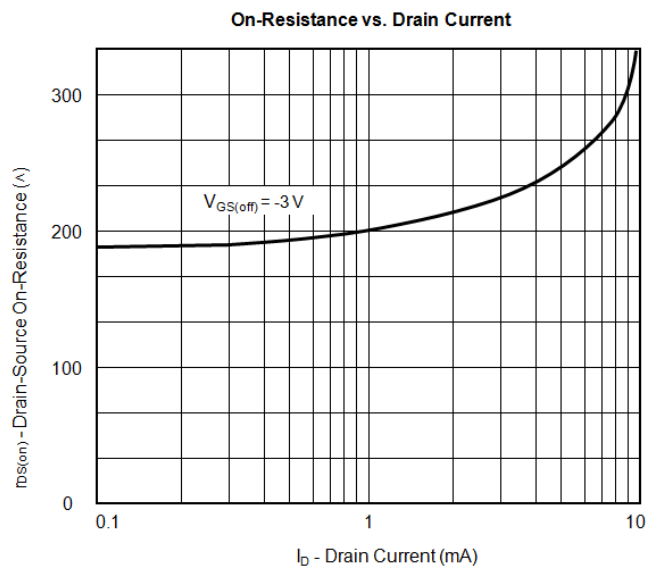
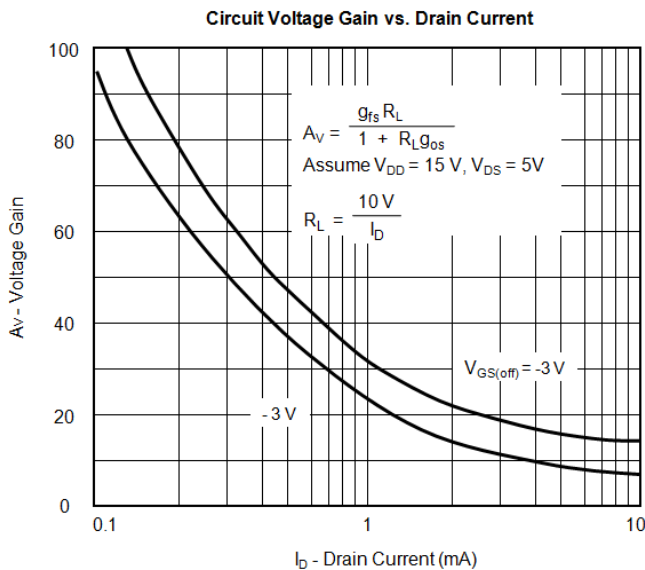
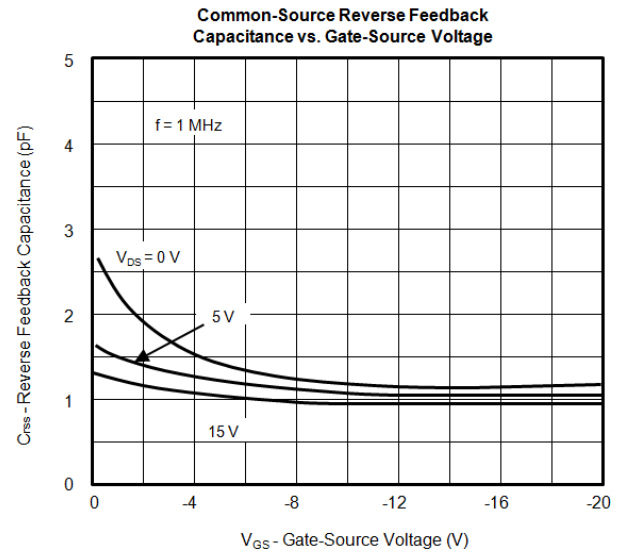
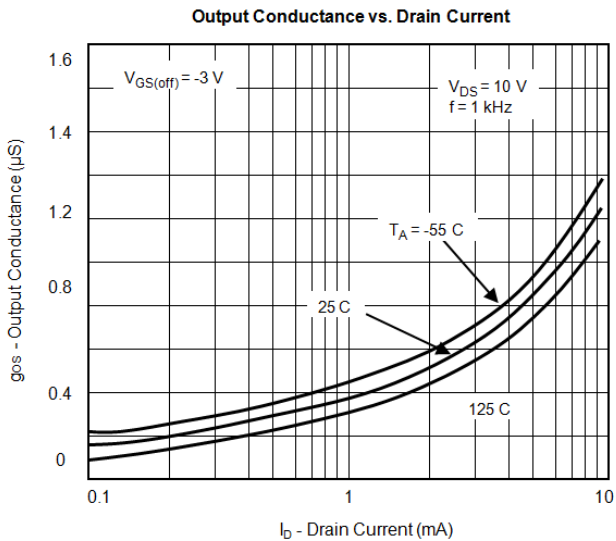
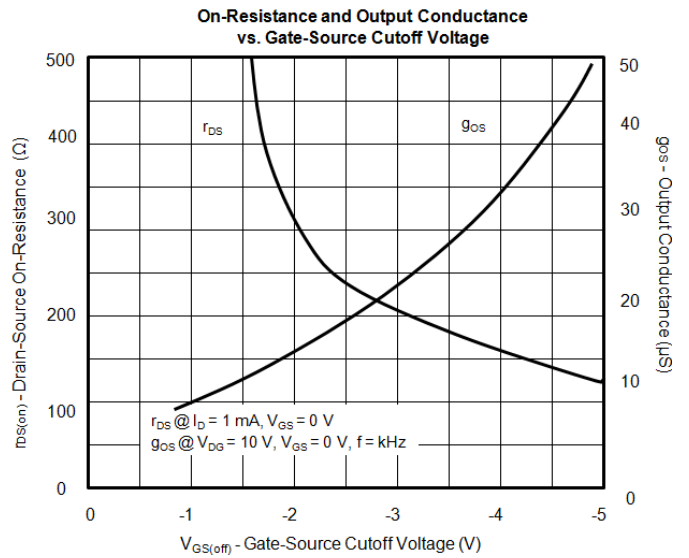
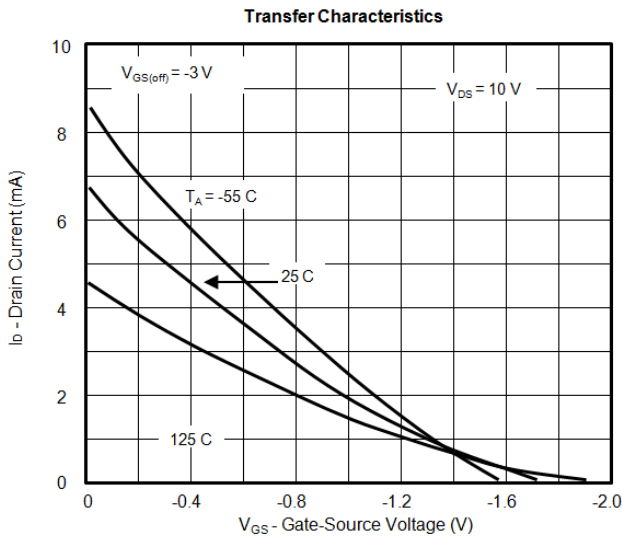
1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse Test: $PW \leq 300\mu s$, Duty Cycle $\leq 3\%$.
3. All characteristics MIN/TYP/MAX numbers are absolute values. Negative values indicate electrical polarity only.
4. Derate 2.8 mW °C above 25°C.

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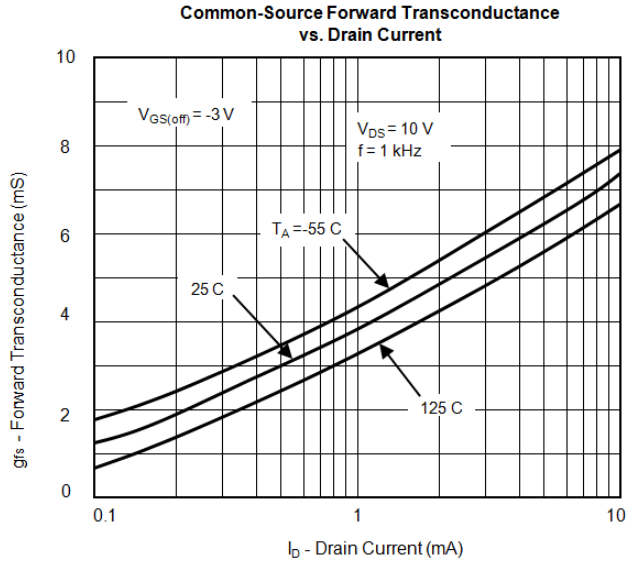
Typical Characteristics



Typical Characteristics (Cont'd)



Typical Characteristics (Cont'd)



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