

LINEAR SYSTEMS

Over 30 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 $T_A=25^\circ\text{C}$ 300mW⁴

Maximum Currents

Gate Forward Current $I_{G(F)} = 10\text{mA}$

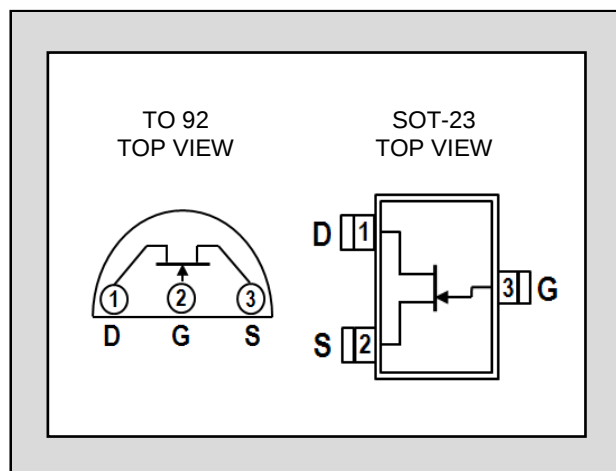
Maximum Voltages

Gate to Source $V_{GSO} = 60\text{V}$

Gate to Drain $V_{GDO} = 60\text{V}$

LSK189

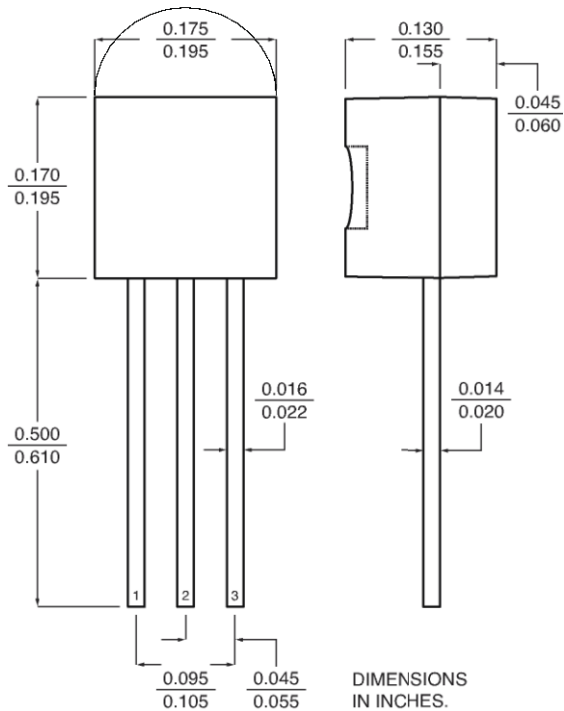
LOW NOISE, LOW CAPACITANCE
SINGLE N-CHANNEL JFET



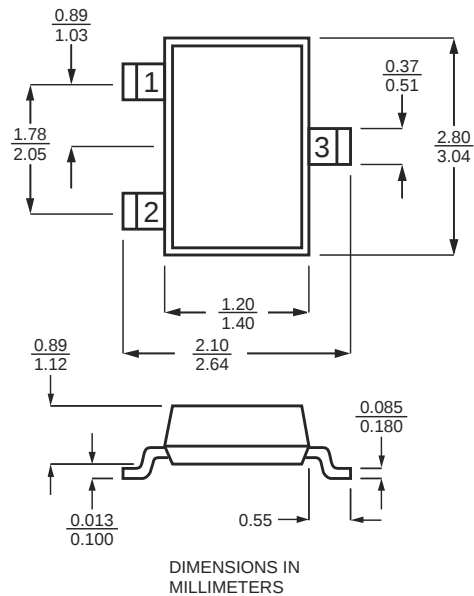
* For equivalent monolithic dual, see LSK489

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	$V_{DG} = 15\text{V}$, $I_D = 200\mu\text{A}$ $T_A=125^\circ\text{C}$
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	$V_{DS} = 15\text{V}$, $V_{GS} = 0$, $R_G = 10\text{M}\Omega$, $f = 100\text{Hz}$, NBW = 6Hz
e_n	Noise Voltage		1.8	2.0	$\text{nV}/\sqrt{\text{Hz}}$	$V_{DS} = 15\text{V}$, $I_D = 2\text{mA}$, $f = 1\text{kHz}$, NBW = 1Hz
e_n	Noise Voltage		2.8	3.5	$\text{nV}/\sqrt{\text{Hz}}$	$V_{DS} = 15\text{V}$, $I_D = 2\text{mA}$, $f = 10\text{Hz}$, NBW = 1Hz
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

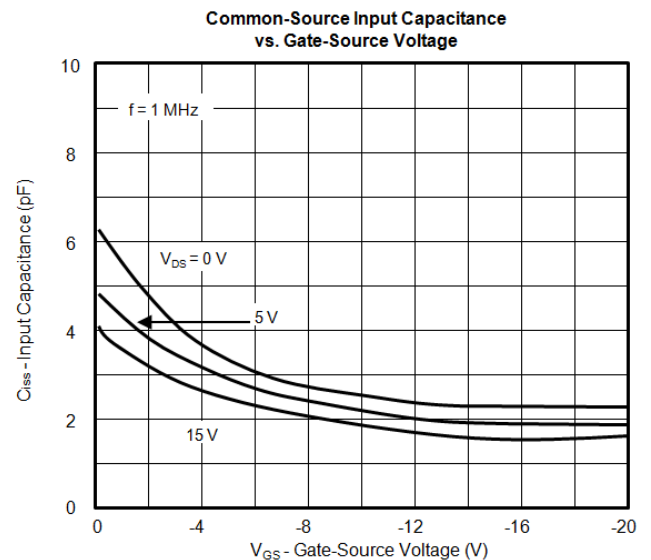
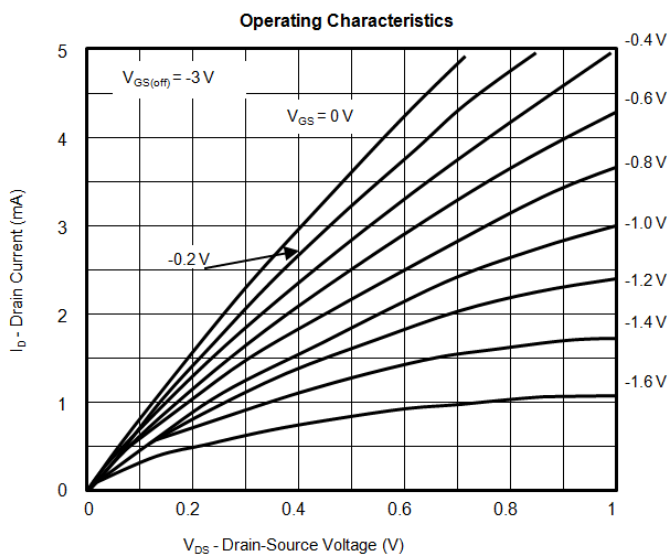
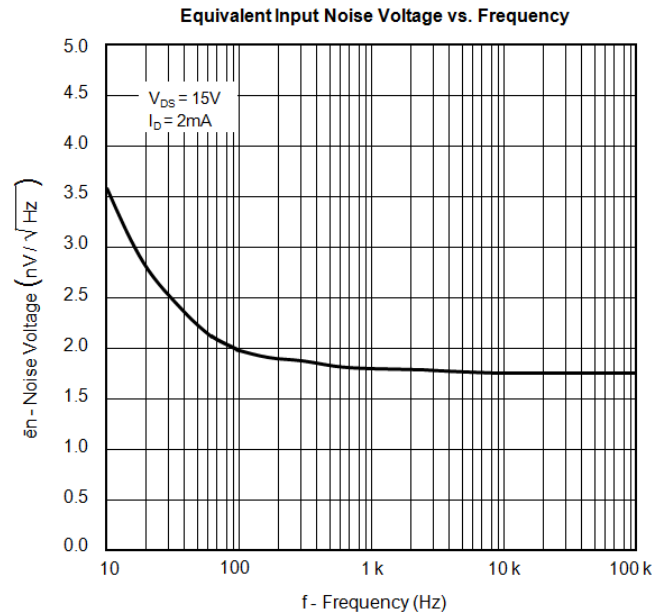
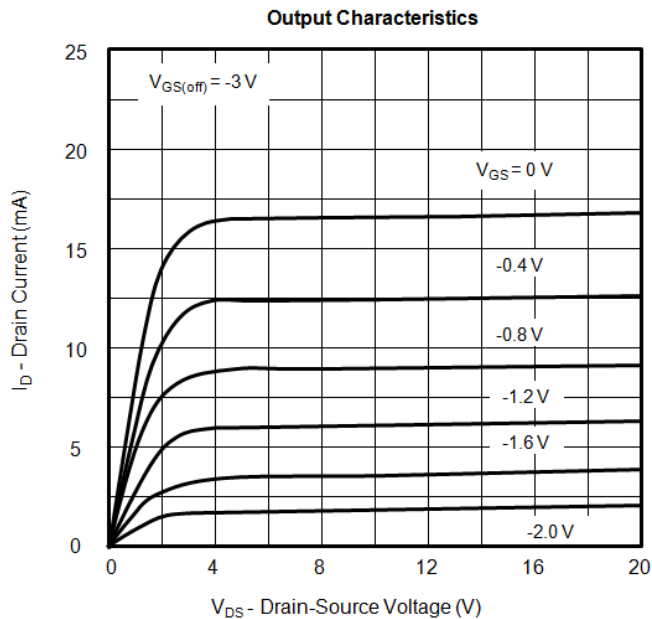
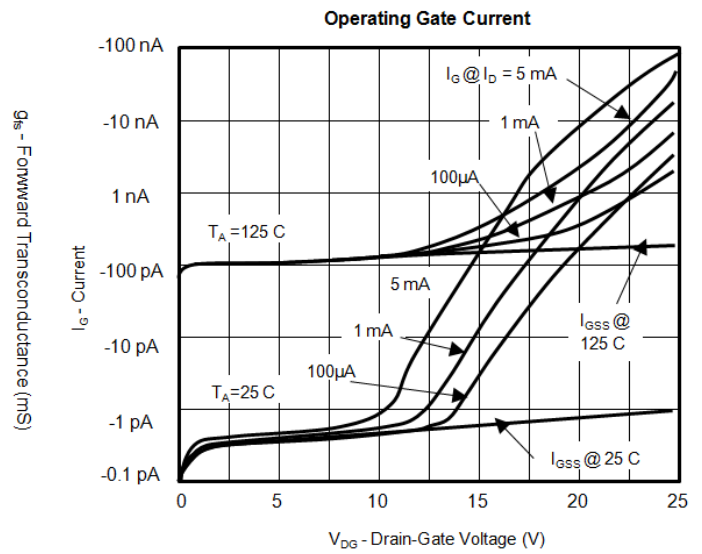
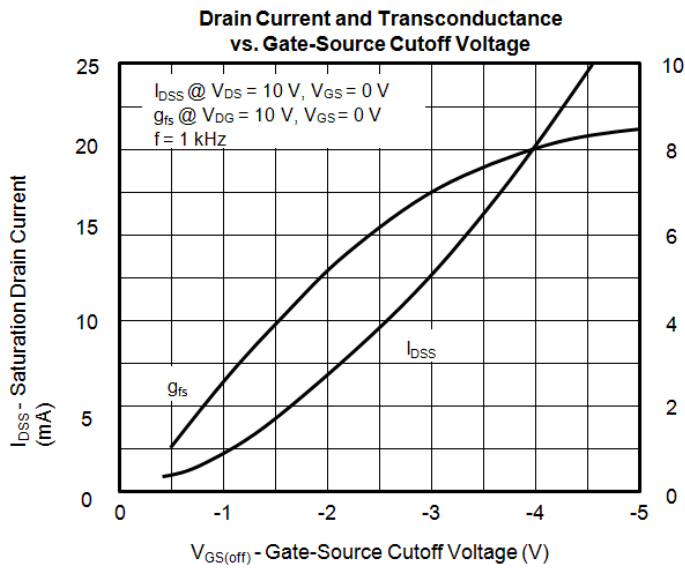


NOTES:

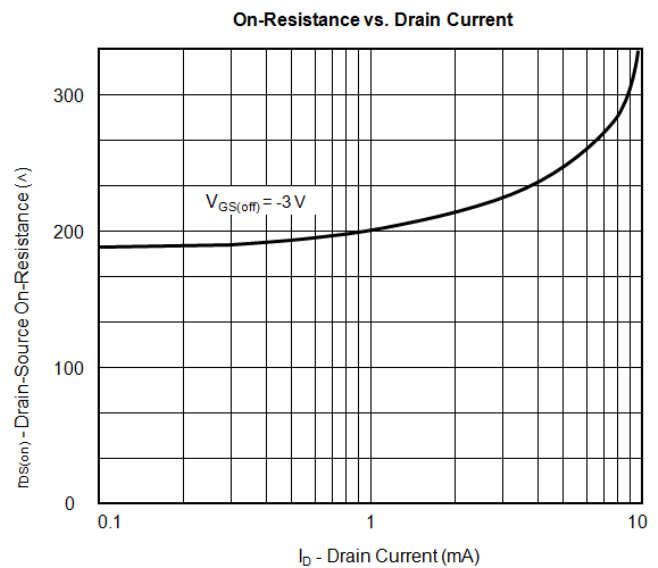
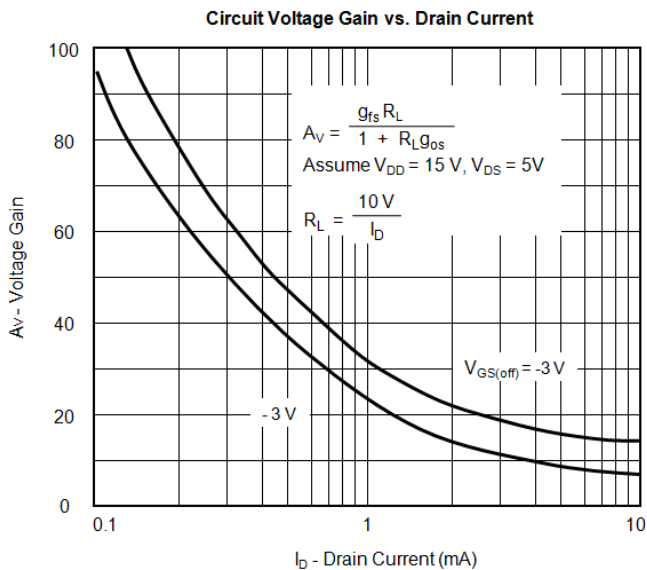
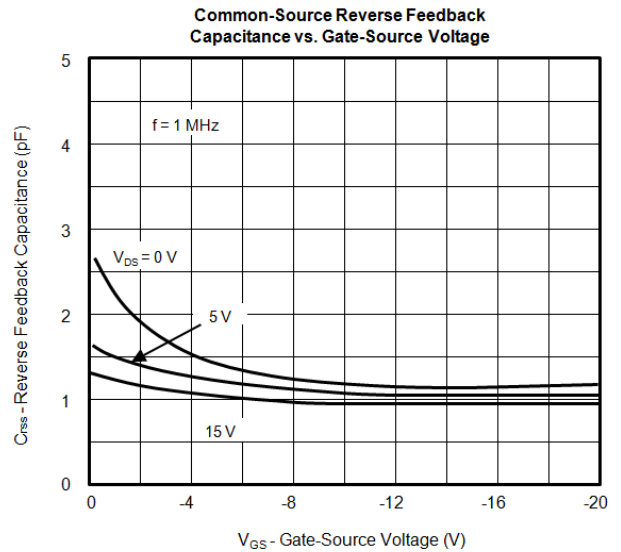
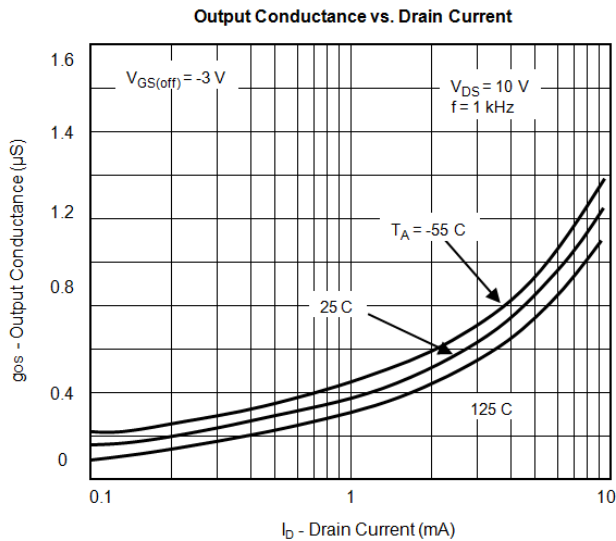
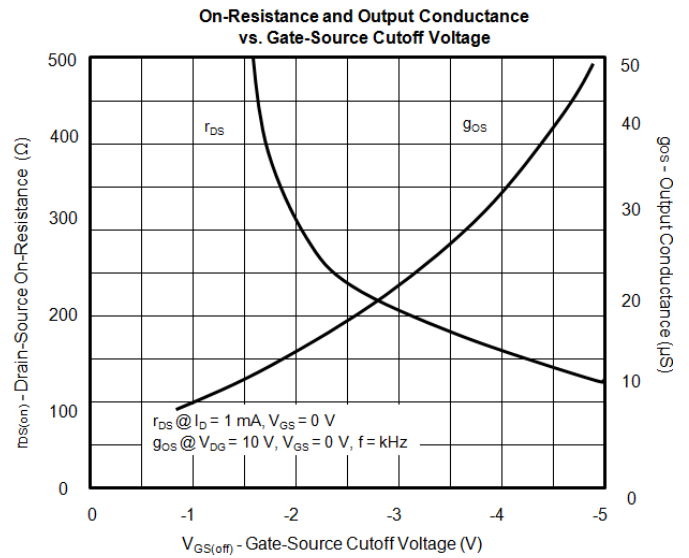
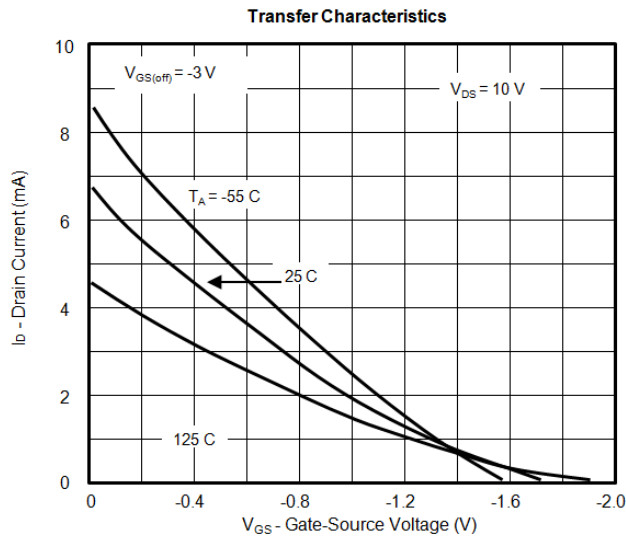
1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse Test: PW $\leq$ 300 μ s, Duty Cycle $\leq$ 3%.
3. All characteristics MIN/TYP/MAX numbers are absolute values. Negative values indicate electrical polarity only.
4. Derate 2.8 mW $^{\circ}$ C above 25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

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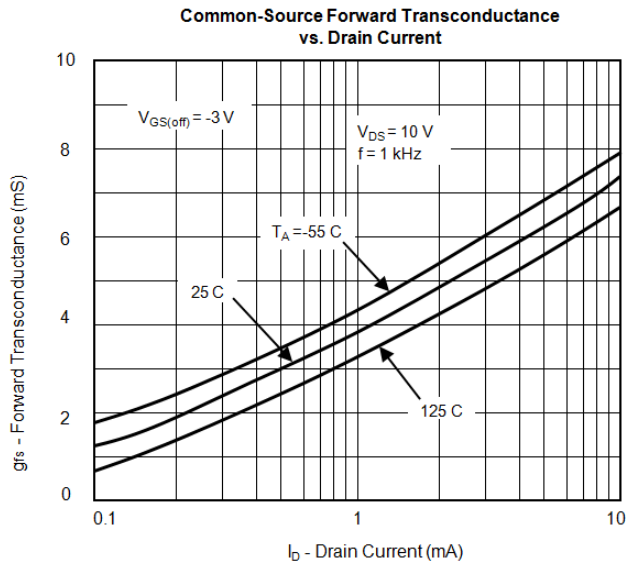
Typical Characteristics



Typical Characteristics (Cont'd)



Typical Characteristics (Cont'd)



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