LINEAR SYSTEMS

LSK389
ULTRA LOW NOISE
MONOLITHIC DUAL
N-CHANNEL JFET

micross components

Linear Systems replaces discontinued Toshiba 2SK389 with LSK389

The 2SK389 / LSK389 is a monolithic matched dual JFET on a single chip

Why use On-Chip Dual JFET instead of 2 single JFETS?

Save Cost

2SK389 / LSK389 removes significant cost for test screening time needed to match I_{DSS} on 2 individual JFETS and offers ZERO yield loss.

Improve Performance

2SK389 / LSK389 On-Chip I_{DSS} matching gives closest possible synchronous electrical performance and also offers better matched performance when the chip is subjected to temperature.

2SK389 / LSK389 Applications:

End audio microphone, Audio Amplifier and audio effects box manufacturers
Instrumentation-input stages of various instruments
The acoustic sensor market –sonoboys / antisubmarine, military personnel and vehicle detectors, sonar makers. Radiation detectors.

FEATURES	
ULTRA LOW NOISE	e_n = 0.9nV/√Hz (typ)
TIGHT MATCHING	$\|V_{GS1-2}\|$ = 20mV max
HIGH BREAKDOWN VOLTAGE	BV_{GSS} = 40V max
HIGH GAIN	Y_{fs} = 20mS (typ)
LOW CAPACITANCE	25pF typ
IMPROVED SECOND SOURCE REPLACEMENT FOR 2SK389	
ABSOLUTE MAXIMUM RATINGS[1] @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-65 to +150 °C
Operating Junction Temperature	-55 to +135 °C
Maximum Power Dissipation	
Continuous Power Dissipation @ +125 °C	400mW
Maximum Currents	
Gate Forward Current	$I_{G(F)}$ = 10mA
Maximum Voltages	
Gate to Source	V_{GSS} = 40V
Gate to Drain	V_{GDS} = 40V

MATCHING CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNIT	CONDITIONS
$\|V_{GS1} - V_{GS2}\|$	Differential Gate to Source Cutoff Voltage			20	mV	V_{DS} = 10V, I_D = 1mA
$\frac{I_{DSS1}}{I_{DSS2}}$	Gate to Source Saturation Current Ratio	0.9			-	V_{DS} = 10V, V_{GS} = 0V

ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC		MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage		40			V	V_{DS} = 0, I_D = 100µA
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage		0.15		2	V	V_{DS} = 10V, I_D = 0.1µA
I_{DSS}	Drain to Source Saturation Current	LSK389A	2.6		6.5	mA	V_{DS} = 10V, V_{GS} = 0
		LSK389B	6		12		
		LSK389C	10		20		
I_{GSS}	Gate to Source Leakage Current				200	pA	V_{GS} = -30V, V_{DS} = 0
Y_{fs}	Full Conduction Transconductance		8	20		mS	V_{DS} = 10V, V_{GS} = 0, I_{DSS} = 3mA, f = 1kHz
e_n	Noise Voltage			0.9	1.9	nV/√Hz	V_{DS} = 10V, I_D = 2mA, f = 1kHz, NBW = 1Hz
e_n	Noise Voltage			2.5	4	nV/√Hz	V_{DS} = 10V, I_D = 2mA, f = 10Hz, NBW = 1Hz
C_{ISS}	Common Source Input Capacitance			25		pF	V_{DS} = 10V, V_{GS} = 0, f = 1MHz,
C_{RSS}	Common Source Reverse Transfer Cap.			5.5		pF	V_{DG} = 10V, I_D = 0, f = 1MHz,

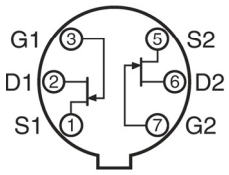
Available Packages:

2SK389 / LSK389 in SOIC-8 Lead
2SK389 / LSK389 in Thru-hole TO-71 6 Lead
2SK389 / LSK389 Toshiba footprint, SO8 / TO-71 with socket adaptor
2SK389 / LSK389 available as bare die
2SK389 / LSK389 available as wafer form

Please contact Micross for package and die dimensions

Packages

TO-71
BOTTOM VIEW



SOIC-A