

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 –sonoboy / antisubmarine, military personnel and vehicle detectors, sonar makers. Radiation detectors.

FEATURES

ULTRA LOW NOISE	$e_n = 0.9nV/\sqrt{Hz}$ (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 RATINGS¹

@ 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
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Maximum Currents

Gate Forward Current	$I_{G(F)} = 10mA$
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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	$V_{DS} = 0, I_D = 100\mu A$
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage	0.15		2	V	$V_{DS} = 10V, I_D = 0.1\mu A$
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/ \sqrt{Hz}	$V_{DS} = 10V, I_D = 2mA, f = 1kHz, NBW = 1Hz$
e_n	Noise Voltage		2.5	4	nV/ \sqrt{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	$V_{DG} = 10V, I_D = 0, f = 1MHz$

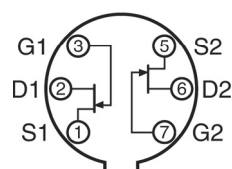
Available Packages:

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

