

## Linear Systems replaces discontinued Siliconix 2N4416A

### The LS4416A is a N-Channel high frequency JFET amplifier

The LS4416A N-channel JFET is designed to provide high-performance amplification at high frequencies.

The SOT-23 package provides ease of manufacturing, and a lower cost assembly option.

#### LS4416A Benefits:

- Wideband High Gain
- Very High System Sensitivity
- High Quality of Amplification
- High-Speed Switching Capability
- High Low-Level Signal Amplification

#### LS4416A Applications:

- High-Frequency Amplifier / Mixer
- Oscillator
- Sample-and-Hold
- Very Low Capacitance Switches

#### FEATURES

DIRECT REPLACEMENT FOR SILICONIX LS4416A

EXCEPTIONAL GAIN (400 MHz) 10dB (min)

VERY LOW NOISE FIGURE (400 MHz) 4dB (max)

VERY LOW DISTORTION

HIGH AC/DC SWITCH OFF-ISOLATION

**ABSOLUTE MAXIMUM RATINGS**  
@ 25°C (unless otherwise noted)

#### Maximum Temperatures

Storage Temperature -65°C to +200°C

Operating Junction Temperature -55°C to +135°C

#### Maximum Power Dissipation

Continuous Power Dissipation 300mW

#### MAXIMUM CURRENT

Gate Current (Note 1) 10mA

#### MAXIMUM VOLTAGES

Gate to Drain or Gate to Source -35V

#### LS4416A ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
$BV_{GS}$	Gate to Source Breakdown Voltage	-35	--	--	V	$I_G = -1\mu A, V_{DS} = 0V$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-2.5	--	-6	V	$V_{DS} = 15V, I_D = 1nA$
$I_{DSS}$	Gate to Source Saturation Current	5	--	15	mA	$V_{DS} = 15V, V_{GS} = 0V$
$I_{GSS}$	Gate Leakage Current	--	--	-0.1	nA	$V_{GS} = -20V, V_{DS} = 0V$
$g_{fs}$	Forward Transconductance	4500	--	7500	$\mu S$	$V_{DS} = 15V, V_{GS} = 0V, f = 1kHz$
$g_{os}$	Output Conductance	--	--	50	$\mu S$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$
$C_{iss}$	Input Capacitance <sup>2</sup>	--	--	0.8	pF	
$C_{rss}$	Reverse Transfer Capacitance <sup>2</sup>	--	--	4	pF	
$C_{oss}$	Output Capacitance <sup>2</sup>	--	--	2	pF	
$e_n$	Equivalent Input Noise Voltage	--	6	--	nV/ $\sqrt{Hz}$	$V_{DS} = 10V, V_{GS} = 0V, f = 1kHz$

#### LS4416A HIGH FREQUENCY ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	100 Mhz		400 Mhz		UNITS	CONDITIONS
		MIN	MAX	MIN	MAX		
$g_{iss}$	Input Conductance	--	100	--	1000	$\mu S$	$V_{DS} = 15V, V_{GS} = 0V$
$b_{iss}$	Input Susceptance <sup>2</sup>	--	2500	--	10000		
$g_{oss}$	Output Conductance	--	75	--	100		
$b_{oss}$	Output Susceptance <sup>2</sup>	--	1000	--	4000		
$G_{fs}$	Forward Transconductance	--	--	4000	--	dB	$V_{DS} = 15V, I_D = 5mA$
$G_{ps}$	Power Gain <sup>2</sup>	18	--	10	--		
NF	Noise Figure <sup>2</sup>	--	2	--	4		

#### NOTES

- Absolute maximum ratings are limiting values above which LS4416A serviceability may be impaired.
- Not production tested, guaranteed by design

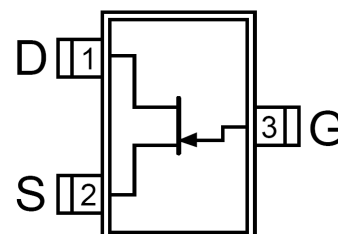
Micross Components Europe

Available Packages:



LS4416A in SOT-23  
LS4416A in bare die.

SOT-23 (Top View)



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Please contact Micross for full package and die dimensions

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