

## 2N/SST4416 2N4416A

### N-CHANNEL JFET HIGH FREQUENCY AMPLIFIER

#### FEATURES

Direct Replacement For SILICONIX 2N/SST4416 & 2N4416A

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

EXCEPTIONAL GAIN (400 MHz) 10 dB (min)

#### ABSOLUTE MAXIMUM RATINGS<sup>1</sup>

@ 25 °C (unless otherwise stated)

#### Maximum Temperatures

Storage Temperature -65 to +200 °C

Operating Junction Temperature -55 to +135 °C

#### Maximum Power Dissipation

Continuous Power Dissipation 300mW

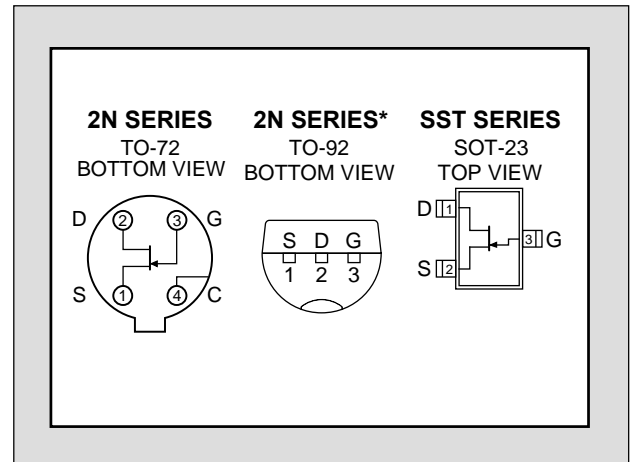
#### Maximum Currents

Gate Current 10mA

#### Maximum Voltages

Gate to Drain or Gate to Source LS4416 -30V

Gate to Drain or Gate to Source LS4416A -35V



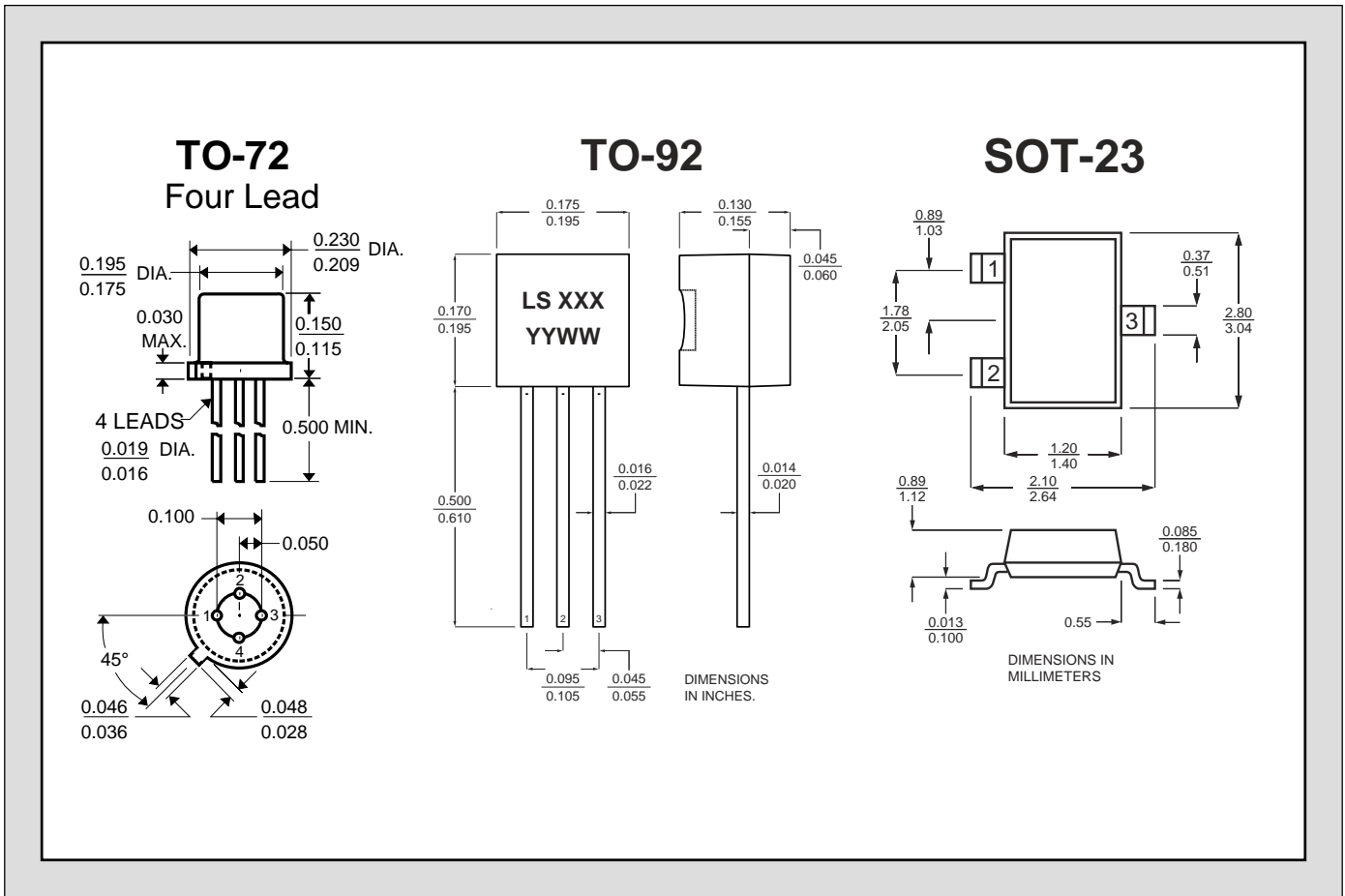
\*Optional Package For 2N4416

#### ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV <sub>GSS</sub>	Gate to Source Breakdown Voltage	2N/SST4416	-30		V	I <sub>G</sub> = -1μA, V <sub>DS</sub> = 0V
		2N4416A	-35			
V <sub>GS(off)</sub>	Gate to Source Cutoff Voltage	2N/SST4416		-6	V	V <sub>DS</sub> = 15V, I <sub>D</sub> = 1nA
		2N4416A	-2.5	-6		
I <sub>DSS</sub>	Gate to Source Saturation Current	5		15	mA	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V
I <sub>GSS</sub>	Gate Leakage Current	2N		-0.1	nA	V <sub>GS</sub> = -20V, V <sub>DS</sub> = 0V
		SST		-1.0		V <sub>GS</sub> = -15V, V <sub>DS</sub> = 0V
g <sub>fs</sub>	Forward Transconductance	4500		7500	μS	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V, f = 1kHz
g <sub>os</sub>	Output Conductance			50	μS	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V, f = 1kHz
C <sub>iss</sub>	Input Capacitance <sup>2</sup>			0.8	pF	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V, f = 1MHz
C <sub>rss</sub>	Reverse Transfer Capacitance <sup>2</sup>			4		
C <sub>oss</sub>	Output Capacitance <sup>2</sup>			2		
e <sub>n</sub>	Equivalent Input Noise Voltage		6		nV/√Hz	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0V, f = 1kHz

**HIGH FREQUENCY ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)**

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			
$G_{ps}$	Power Gain <sup>2</sup>	18		10		$dB$	$V_{DS} = 15V, I_D = 5mA$
NF	Noise Figure <sup>2</sup>		2		4		$V_{DS} = 15V, I_D = 5mA, R_G = 1k\Omega$



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

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