LINEAR SYSTEMS

2N4416
N-CHANNEL JFET

micross

Linear Systems replaces discontinued Siliconix 2N4416

The 2N4416 is a N-Channel high frequency JFET amplifier

The 2N4416 N-channel JFET is designed to provide high-performance amplification at high frequencies.

The hermetically sealed TO-72 package is well suited for military applications. The TO-92 package provides a lower cost commercial option

2N4416 Benefits:

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

2N4416 Applications:

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

FEATURES	
DIRECT REPLACEMENT FOR SILICONIX 2N4416	
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	-30V

2N4416 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	-30	--	--	V	I_G = -1µA, V_{DS} = 0V
$V_{GS(off)}$	Gate to Source Cutoff Voltage	--	--	-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	µS	V_{DS} = 15V, V_{GS} = 0V, f = 1kHz
g_{os}	Output Conductance	--	--	50	µS	
C_{iss}	Input Capacitance[2]	--	--	0.8	pF	
C_{rss}	Reverse Transfer Capacitance[2]	--	--	4	pF	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz
C_{oss}	Output Capacitance[2]	--	--	2	pF	
e_n	Equivalent Input Noise Voltage	--	6	--	nV/√Hz	V_{DS} = 10V, V_{GS} = 0V, f = 1kHz

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2N4416 HIGH FREQUENCY ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	100 Mhz		400 Mhz		UNITS	CONDITIONS
		MIN	MAX	MIN	MAX		
g_{lss}	Input Conductance	--	100	--	1000	µS	V_{DS} = 15V, V_{GS} = 0V
b_{lss}	Input Susceptance[2]	--	2500	--	10000		
g_{oss}	Output Conductance	--	75	--	100		
b_{oss}	Output Susceptance[2]	--	1000	--	4000		
G_{fs}	Forward Transconductance	--	--	4000	--		
G_{ps}	Power Gain[2]	18	--	10	--	dB	V_{DS} = 15V, I_D = 5mA
NF	Noise Figure[2]	--	2	--	4		V_{DS} = 15V, I_D = 5mA, R_G = 1kΩ
NOTES	1 . Absolute maximum ratings are limiting values above which 2N4416 serviceability may be impaired. 2. Not production tested, guaranteed by design						

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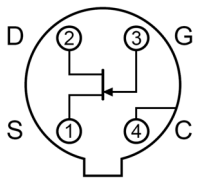
Available Packages:

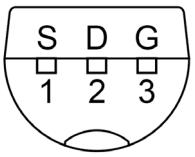
2N4416 in TO-72
2N4416 in TO-92
2N4416 in bare die.

Please contact Micross for full package and die dimensions

TO-72 (Bottom View)



TO-92 (Bottom View)



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