

SST4416

FEATURES

- High Gain >4.5 mS
- High Frequency Operation >400 MHz
- Low Noise

APPLICATIONS

- VHF/UHF Amplifiers
- Oscillators
- Mixers

DESCRIPTION

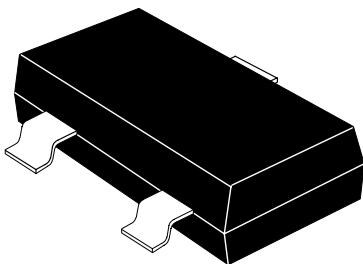
Calogic's SST4416 is an N-Channel JFET housed in a surface mount SOT-23 plastic package. The device is well suited for designs that require low noise at high frequencies (4 dB maximum at 400 MHz) while maintaining high gain.

ORDERING INFORMATION

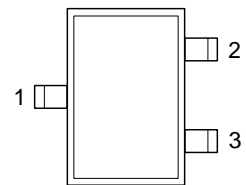
Part	Package	Temperature Range
SST4416	Plastic SOT-23 Package	-55°C to +150°C

NOTE: For Sorted Chips in Carries, See 2N4416 Series

PIN CONFIGURATION



- 1 GATE
- 2 SOURCE
- 3 DRAIN



TOP VIEW

CJ1

PRODUCT MARKING

SST4416	Z16
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ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Parameter/Test Condition	Symbol	Limit	Unit
Gate-Drain Voltage	V_{GD}	-30	V
Gate-Source Voltage	V_{GS}	-30	V
Gate Current	I_G	10	mA
Power Dissipation	P_D	350	mW
Power Derating		3.18	mW/ $^{\circ}\text{C}$
Operating Junction Temperature	T_J	-55 to 130	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-65 to 150	$^{\circ}\text{C}$
Lead Temperature (1/16" from case for 10 seconds)	T_L	300	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	CHARACTERISTICS	TYP ¹	MIN	MAX	UNIT	TEST CONDITIONS
STATIC						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	-35	-30		V	$I_G = -1\text{mA}, V_{DS} = 0\text{V}$
$V_{GS(OFF)}$	Gate-Source Cut off Voltage	-3		-6		$V_{DS} = 15\text{V}, I_D = 1\text{nA}$
I_{DSS}	Saturation Drain Current	10	5	15	mA	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$
I_{GSS}	Gate Reverse Current	-0.002		-1	nA	$V_{GS} = -15\text{V}, V_{DS} = 0\text{V}$
		-0.6			mA	$T_A = 125^{\circ}\text{C}$
DYNAMIC						
g_{fs}	Common-Source Forward Transconductance	6.5	4.5	7.5	mS	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$ $f = 1\text{kHz}$
g_{os}	Common-Source Output Conductance	15		50	mS	
C_{iss}	Common-Source Input Capacitance	2.0		4	pF	$V_{DS} = -15\text{V}, V_{GS} = 0\text{V}$ $f = 1\text{MHz}$
C_{rss}	Common-Source Reverse Transfer Capacitance	0.7		0.8		
C_{oss}	Common-Source Output Capacitance	1		2		
HIGH-FREQUENCY			100MHz		400MHz	
			MIN	MAX	MIN	MAX
g_{iss}	Common-Source Input Conductance			100		1000
b_{iss}	Common-Source Input Subceptance			2500		10,000
g_{oss}	Common-Source Output Conductance			75		100
b_{oss}	Common-Source Output Subceptance			1000		4000
g_{fg}	Common-Source Forward Transconductance				4000	
G_{pg}	Common-Source Power Gain		18		10	
NF	Noise Figure			2		4

NOTES: 1. Pulse test duration = 300s.