

3875081 G E SOLID STATE

01E 10980 D

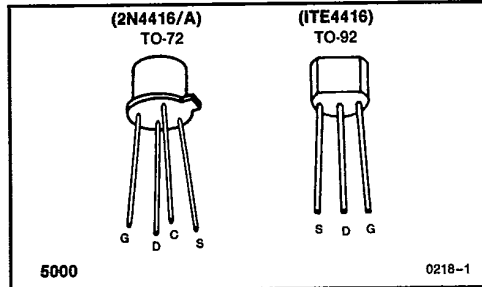


2N4416/A, ITE4416
N-Channel JFET
High Frequency Amplifier

2N4416/A, ITE4416

FEATURES

- Low Noise
- Low Feedback Capacitance
- Low Output Capacitance
- High Transconductance
- High Power Gain

PIN CONFIGURATIONS**ABSOLUTE MAXIMUM RATINGS**(T_A = 25°C unless otherwise noted)

Gate-Source or Gate-Drain Voltage

2N4416, ITE4416 -30V

2N4416A -35V

Gate Current 10mA

Storage Temperature Range

2N4416/2N4416A -65°C to +200°C

ITE4416 -55°C to +150°C

Operating Temperature Range

2N4416/2N4416A -65°C to +200°C

ITE4416 -55°C to +135°C

Lead Temperature (Soldering, 10sec) +300°C

Power Dissipation 300mW

Derate above 25°C 1.7mW/°C

2N4416/2N4416A 1.7mW/°C

ITE4416 2.7mW/°C

NOTE: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ORDERING INFORMATION

TO-92	TO-72
ITE 4416	2N4416
—	2N4416A

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Max	Units
I _{GSS}	Gate Reverse Current	V _{GS} = -20V, V _{DS} = 0		-0.1	nA
		T _A = 150°C		-0.1	μA
BV _{GSS}	Gate-Source Breakdown Voltage	I _G = -1μA, V _{DS} = 0	-30		V
			-35		
V _{GS(off)}	Gate-Source Cutoff Voltage	V _{DS} = 15V, I _D = 1nA		-6	V
			-2.5	-6	
V _{GS(f)}	Gate-Source Forward Voltage	I _G = 1mA, V _{DS} = 0		1	V
I _{DSS}	Drain Current at Zero Gate Voltage	V _{DS} = 15V, V _{GS} = 0	5	15	mA
g _{fs}	Common-Source Forward Transconductance	f = 1kHz	4500	7500	μS
g _{os}	Common-Source Output Conductance			50	μS
C _{rss}	Common-Source Reverse Transfer Capacitance (Note 1)	f = 1MHz		0.8	pF
C _{iss}	Common-Source Input Capacitance (Note 1)			4	pF
C _{oss}	Common-Source Output Capacitance (Note 1)			2	pF

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NOTE: All typical values have been characterized but are not tested.

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T-31-25

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

Symbol	Parameter	Test Conditions	100MHz		400MHz		Units
			Min	Max	Min	Max	
g_{iss}	Common-Source Input Conductance	$V_{DS} = 15\text{V}, V_{GS} = 0$ (Note 1)		100		1000	μS
b_{iss}	Common-Source Input Susceptance			2500		10,000	
g_{oss}	Common-Source Output Conductance			75		100	
b_{oss}	Common-Source Output Susceptance			1000		4000	
g_{fs}	Common-Source Forward Transconductance				4000		
G_{ps}	Common-Source Power Gain	$V_{DS} = 15\text{V}, I_D = 5\text{mA}$ (Note 1)	18		10		dB
NF	Noise Figure (Note 1)	$V_{DS} = 15\text{V}, I_D = 5\text{mA}, R_G = 1\text{k}\Omega$		2		4	

NOTE 1: For design reference only, not 100% tested.

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