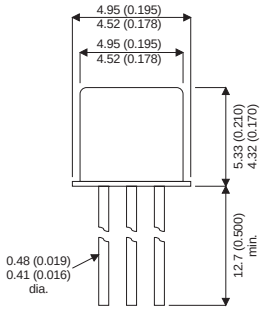
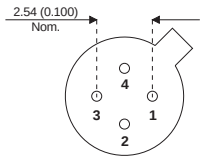
2N4416
2N4416A

SMALL SIGNAL N–CHANNEL J–FET THAT IS DESIGNED TO PROVIDE HIGH PERFORMANCE AMPLIFICATION AT HIGH FREQUENCIES

MECHANICAL DATA
Dimensions in mm (inches)





TO-72
(TO-206AF)

PIN 1 - Case PIN 2 - Gate
PIN 3 -Drain PIN 4 - Source

FEATURES

- **EXCELLENT HIGH FREQUENCY GAINS**
- **CECC SCREENING OPTIONS**
- **SPACE QUALITY LEVEL OPTIONS**

APPLICATIONS:

The 2N4416 and 2N4416A are N-Channel JFETs designed to provide high-performance amplification, especially at high-frequency.

ABSOLUTE MAXIMUM RATINGS

	(T_{amb} = 25°C unless otherwise stated)	2N4416	2N4416A
V_{GD}	Gate – Drain Voltage	–30V	–35V
V_{GS}	Gate – Source Voltage	–30V	–35V
I_G	Gate Current	10mA	
P_D	Power Dissipation	300mW	
	Derate	2.4mW / °C	
T_j	Operating Junction Temperature Range	–55 to 150°C	
T_{stg}	Storage Temperature Range	–55 to 200°C	

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

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2N4416
2N4416A

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

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
	STATIC CHARACTERISTICS						
$V_{(BR)GSS}$	Gate – Source Breakdown Voltage	V_{DS} = 0V	**2N4416**	–30	–36		V
		I_G = –1µA	**2N4416A**	–35	–36		
$V_{GSS(off)}$	Gate – Source Cut–off Voltage	V_{DS} = 15V	**2N4416**		–3	–6	
		I_D = 1nA	**2N4416A**	–2.5	–3	–6	
I_{DSS}*	Saturation Current	V_{DS} = 15V	V_{GS} = 0V	5	10	15	mA
I_{GSS}	Gate Reverse Current	V_{GS} = –20	V_{DS} = 0V		–2	–100	pA
			T_{amb} = 125°C		–4	–100	nA
I_G	Gate Operating Current	V_{DG} = 10V	I_D = 1mA		–20		pA
$I_{D(off)}$	Drain Cut–off Current	V_{DS} = 10V	V_{GS} = –10V		2		
$V_{GS(F)}$	Gate – Source Forward Voltage	I_G = 1mA	V_{DS} = 0V		0.7		V
$R_{DS(on)}$	Drain – Source On Resistance	V_{GS} = 0V	I_D = 1mA		150		Ω
	DYNAMIC CHARACTERISTICS						
g_{fs}	Common – Source Forward Transconductance	V_{DS} = 15V f = 1kHz	V_{GS} = 0V	4.5	6	7.5	ms
g_{os}	Common – Source Output Transconductance				15	50	µs
C_{iss}	Common – Source Input Capacitance	V_{DS} = 15V f = 1MHz	V_{GS} = 0V		2.2	4	pF
C_{rss}	Common – Source Reverse Transfer Capacitance				0.7	0.8	
C_{oss}	Common – Source Output Capacitance				1	2	
$\overline{e}_n$	Equivalent Input Noise Voltage	V_{DS} = 10V f = 1kHz	V_{GS} = 0V		6		$\frac{nV}{\sqrt{Hz}}$

Pulse Test; PW = 300µs, Duty Cycle # 3%

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