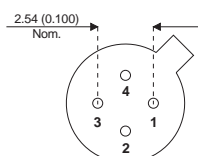
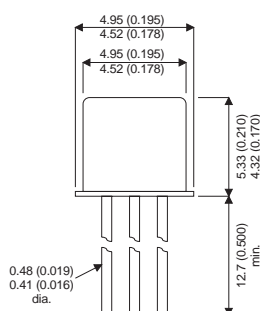


MECHANICAL DATA

Dimensions in mm (inches)



TO-72
(TO-206AF)

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

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

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

($T_{amb} = 25^{\circ}\text{C}$ 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

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
STATIC CHARACTERISTICS						
$V_{(BR)GSS}$ Gate – Source Breakdown Voltage	$V_{DS} = 0V$ $I_G = -1\mu A$	2N4416	-30	-36	V	
		2N4416A	-35	-36		
$V_{GSS(off)}$ Gate – Source Cut-off Voltage	$V_{DS} = 15V$ $I_D = 1nA$	2N4416		-3	-6	V
		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
		$T_{amb} = 125^\circ\text{C}$		-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		pA
$V_{GS(F)}$ 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	
\bar{e}_n Equivalent Input Noise Voltage	$V_{DS} = 10V$ $f = 1kHz$	$V_{GS} = 0V$		6		$\frac{nV}{\sqrt{Hz}}$

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

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