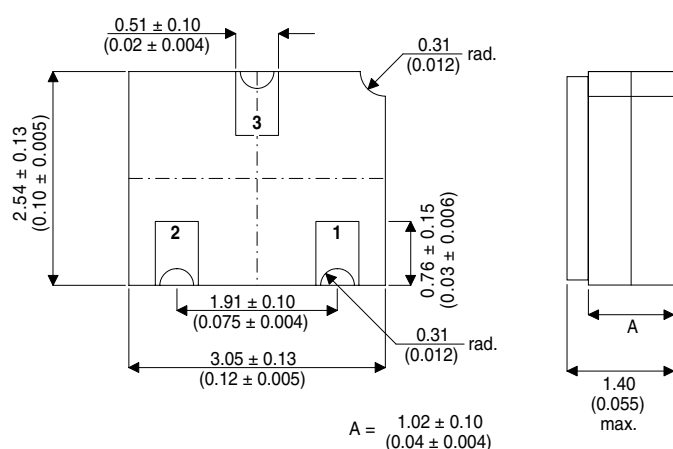


**SMALL SIGNAL
N-CHANNEL J-FET IN A
HERMETICALLY SEALED
CERAMIC SURFACE MOUNT PACKAGE
FOR HIGH RELIABILITY APPLICATIONS**

MECHANICAL DATA

Dimensions in mm (inches)



**SOT23 CERAMIC
(LCC1 PACKAGE)**

Underside View

PAD 1 – Source PAD 2 – Drain PAD 3 – Gate

FEATURES

- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- 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	1.7mW / °C	
T_j	Operating Junction Temperature Range	-55 to 150°C	
T_{stg}	Storage Temperature Range	-55 to 150°C	

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	$V_{GS} = -20$ $V_{DS} = 0V$ $T_{amb} = 125^\circ\text{C}$			-2	-100	pA
				-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	$V_{DS} = 15V$ $V_{GS} = 0V$ $f = 1kHz$		4.5	6	7.5	ms
g_{os} Common – Source Output Transconductance					15	50
C_{iss} Common – Source Input Capacitance	$V_{DS} = 15V$ $V_{GS} = 0V$ $f = 1MHz$			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	$V_{DS} = 10V$ $V_{GS} = 0V$ $f = 1kHz$			6		$\frac{nV}{\sqrt{Hz}}$

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