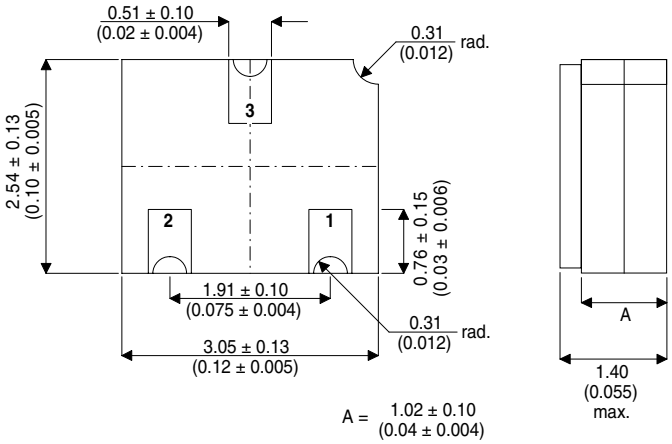
2N4416CSM
2N4416ACSM

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°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	

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

2N4416CSM
2N4416ACSM

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	
$\bar{e}_n$	Equivalent Input Noise Voltage	V_{DS} = 10V f = 1kHz	V_{GS} = 0V		6		$\frac{nV}{\sqrt{Hz}}$

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