

2N4416  
2N4416A

SILICON  
N-CHANNEL JFETS



TO-72 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N4416 and 2N4416A are silicon N-Channel Junction Field Effect Transistors designed for VHF amplifier and mixer applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

Gate-Drain Voltage  
Gate-Source Voltage  
Drain-Source Voltage  
Gate Current  
Power Dissipation  
Operating and Storage Junction Temperature

SYMBOL	2N4416	2N4416A	UNITS
$V_{GD}$	30	35	V
$V_{GS}$	30	35	V
$V_{DS}$	30	35	V
$I_G$		10	mA
$P_D$		300	mW
$T_J, T_{stg}$		-65 to +200	$^\circ\text{C}$

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

SYMBOL	TEST CONDITIONS	2N4416		2N4416A		UNITS
		MIN	MAX	MIN	MAX	
$I_{GSS}$	$V_{GS}=20\text{V}, V_{DS}=0$	-	100	-	100	pA
$I_{GSS}$	$V_{GS}=20\text{V}, V_{DS}=0, T_A=150^\circ\text{C}$	-	100	-	100	nA
$I_{DSS}$	$V_{DS}=15\text{V}, V_{GS}=0$	5.0	15	5.0	15	mA
$BV_{GSS}$	$I_G=1.0\mu\text{A}$	30	-	35	-	V
$V_{GS(off)}$	$V_{DS}=15\text{V}, I_D=1.0\text{nA}$	-	6.0	2.5	6.0	V
$g_{FS}$	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{kHz}$	4,500	7,500	4,500	7,500	$\mu\text{S}$
$g_{OS}$	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{kHz}$	-	50	-	50	$\mu\text{S}$
$C_{rss}$	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{MHz}$	-	1.0	-	1.0	pF
$C_{iss}$	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{MHz}$	-	4.0	-	4.0	pF
$C_{oss}$	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{MHz}$	-	2.0	-	2.0	pF

**HIGH FREQUENCY CHARACTERISTICS:**

SYMBOL	TEST CONDITIONS	100MHz		400MHz		UNITS
		MIN	MAX	MIN	MAX	
$g_{iss}$	$V_{DS}=15\text{V}, V_{GS}=0$	-	100	-	1,000	$\mu\text{S}$
$b_{iss}$	$V_{DS}=15\text{V}, V_{GS}=0$	-	2,500	-	10,000	$\mu\text{S}$
$g_{oss}$	$V_{DS}=15\text{V}, V_{GS}=0$	-	75	-	100	$\mu\text{S}$
$b_{oss}$	$V_{DS}=15\text{V}, V_{GS}=0$	-	1,000	-	4,000	$\mu\text{S}$
$g_{fs}$	$V_{DS}=15\text{V}, V_{GS}=0$	-	-	4,000	-	$\mu\text{S}$
$G_{ps}$	$V_{DS}=15\text{V}, I_D=5.0\text{mA}$	18	-	10	-	dB
NF	$V_{DS}=15\text{V}, I_D=5.0\text{mA}, R_G=1.0\text{k}\Omega$	-	2.0	-	4.0	dB

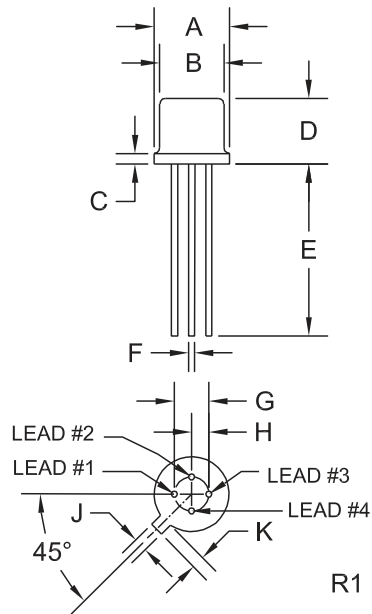
R2 (4-June 2013)

2N4416  
2N4416A

SILICON  
N-CHANNEL JFETS



TO-72 CASE - MECHANICAL OUTLINE



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.175	0.195	4.45	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
J	0.036	0.046	0.91	1.17
K	0.028	0.048	0.71	1.22

TO-72 (REV: R1)

LEAD CODE:

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

MARKING:

FULL PART NUMBER

R2 (4-June 2013)

2N4416  
2N4416A

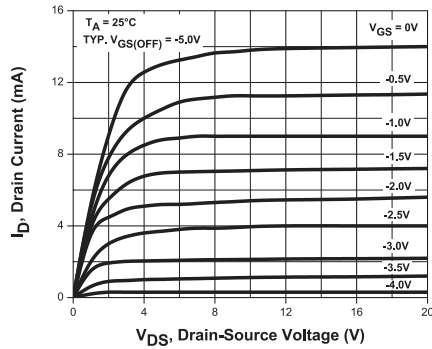
SILICON  
N-CHANNEL JFETS



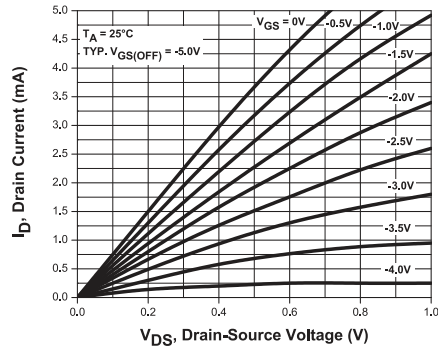
www.centrasemi.com

TYPICAL ELECTRICAL CHARACTERISTICS

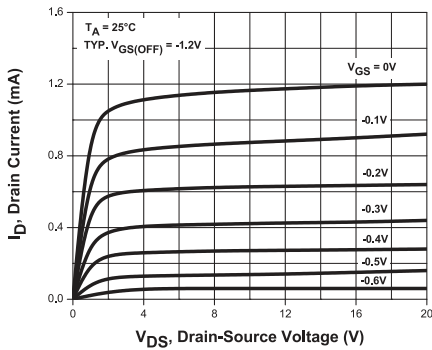
Output Characteristics



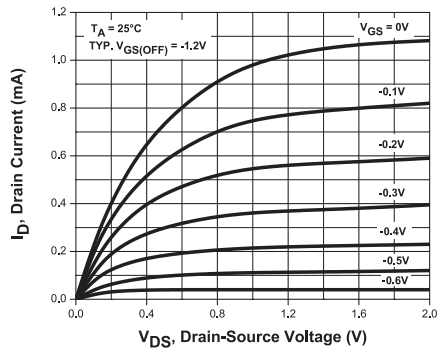
Output Characteristics



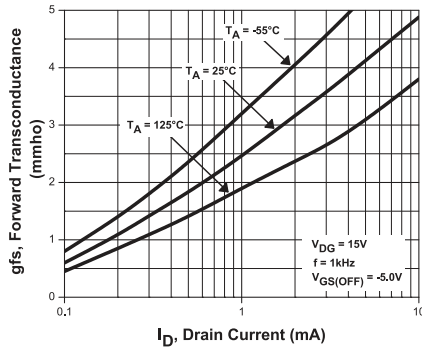
Output Characteristics



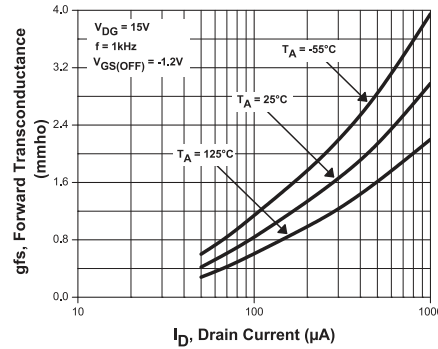
Output Characteristics



Forward Transconductance Characteristics



Forward Transconductance Characteristics



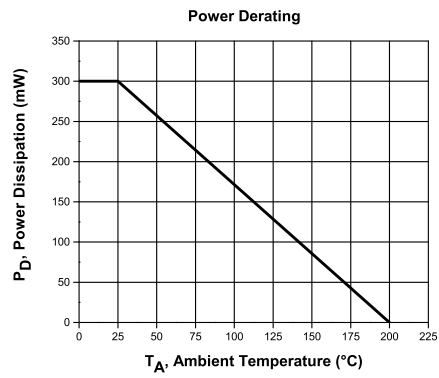
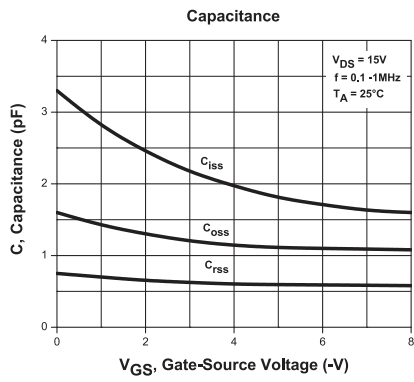
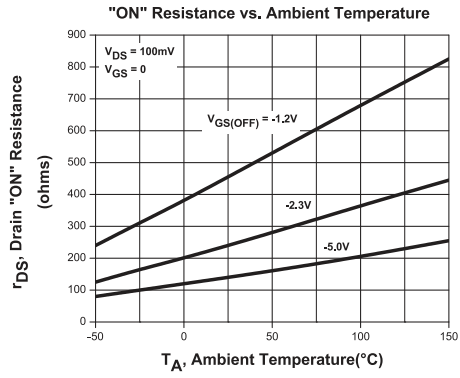
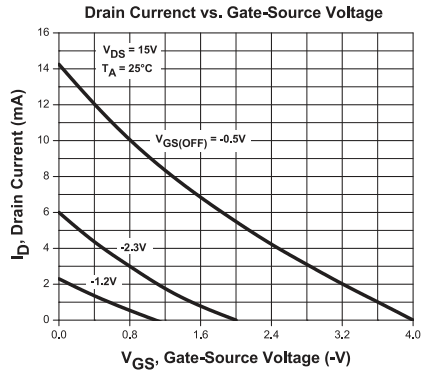
R2 (4-June 2013)

2N4416  
2N4416A

SILICON  
N-CHANNEL JFETS



TYPICAL ELECTRICAL CHARACTERISTICS



R2 (4-June 2013)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



---

### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

---

### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

---

### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

---

### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)