

2N4416
2N4416A

SILICON
N-CHANNEL JFETS



TO-72 CASE



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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	<u>2N4416</u>	<u>2N4416A</u>	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	<u>2N4416</u>		<u>2N4416A</u>		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	μS
g_{OS}	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{kHz}$	-	50	-	50	μS
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	<u>100MHz</u>		<u>400MHz</u>		UNITS
		MIN	MAX	MIN	MAX	
g_{iss}	$V_{DS}=15\text{V}, V_{GS}=0$	-	100	-	1,000	μS
b_{iss}	$V_{DS}=15\text{V}, V_{GS}=0$	-	2,500	-	10,000	μS
g_{oss}	$V_{DS}=15\text{V}, V_{GS}=0$	-	75	-	100	μS
b_{oss}	$V_{DS}=15\text{V}, V_{GS}=0$	-	1,000	-	4,000	μS
g_{fs}	$V_{DS}=15\text{V}, V_{GS}=0$	-	-	4,000	-	μS
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

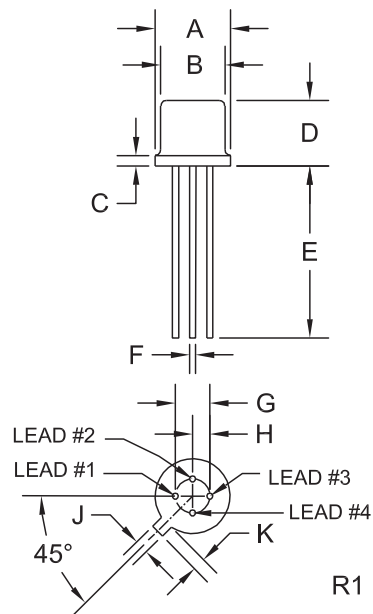
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TO-72 CASE - MECHANICAL OUTLINE



DIMENSIONS				
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

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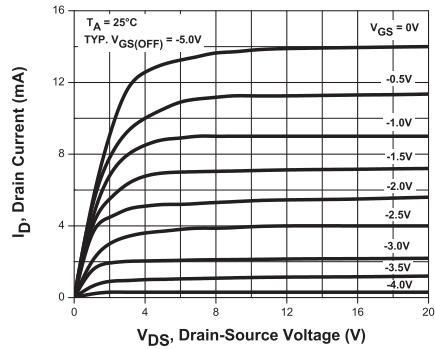
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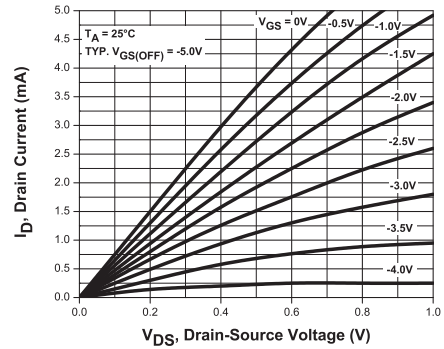
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TYPICAL ELECTRICAL CHARACTERISTICS

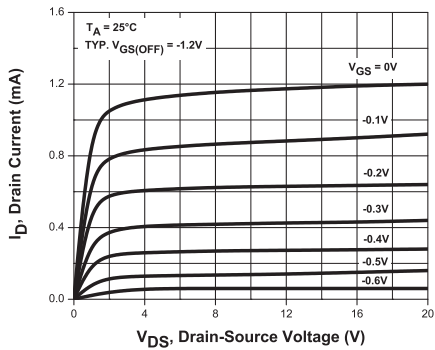
Output Characteristics



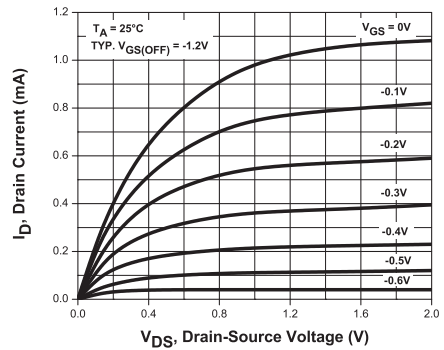
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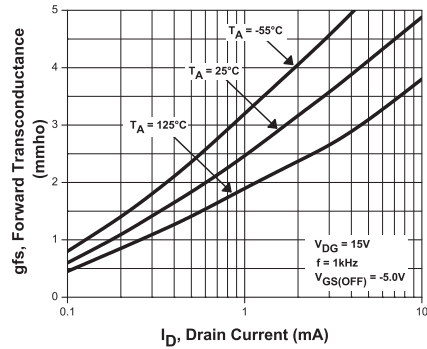
Output Characteristics



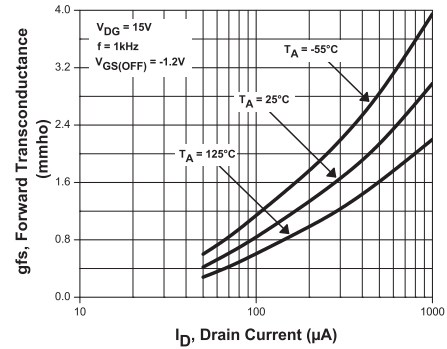
Output Characteristics



Forward Transconductance Characteristics



Forward Transconductance Characteristics



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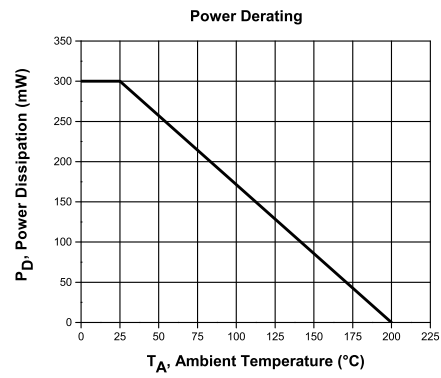
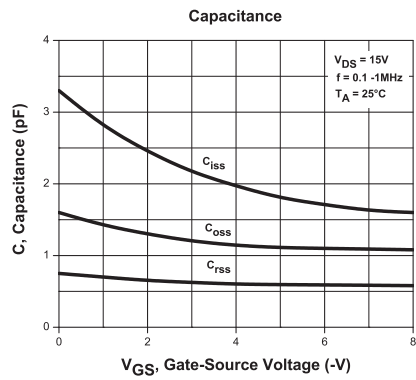
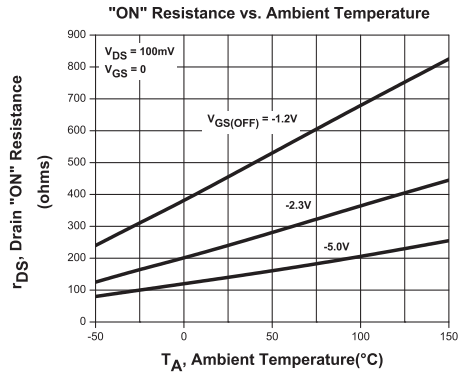
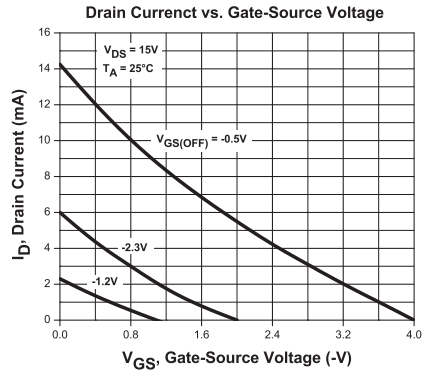
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TYPICAL ELECTRICAL CHARACTERISTICS



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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 (2nd 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).

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