



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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PN4391
PN4392
PN4393

**N-CHANNEL
SILICON JFET**



TO-92 CASE



www.centralemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR PN4391 series types are N-Channel silicon JFETs designed for analog switching and chopper applications.

MARKING: FULL PART NUMBER

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

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

SYMBOL

V_{GD} 40
 V_{GS} 40
 I_G 50
 P_D 625
 T_J, T_{stg} -65 to +150

UNITS

V
V
mA
mW
 $^\circ\text{C}$

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

| SYMBOL | TEST CONDITIONS | PN4391 | | PN4392 | | PN4393 | | UNITS |
|---------------|--|--------|-----|--------|-----|--------|-----|---------------|
| | | MIN | MAX | MIN | MAX | MIN | MAX | |
| I_{GSS} | $V_{GS}=20\text{V}$ | - | 0.1 | - | 0.1 | - | 0.1 | nA |
| I_{GSS} | $V_{GS}=20\text{V}, T_A=100^\circ\text{C}$ | - | 0.2 | - | 0.2 | - | 0.2 | μA |
| I_{DSS} | $V_{DS}=20\text{V}$ | 50 | 150 | 25 | 75 | 5.0 | 30 | mA |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=12\text{V}$ | - | 0.1 | - | - | - | - | nA |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=7.0\text{V}$ | - | - | - | 0.1 | - | - | nA |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=5.0\text{V}$ | - | - | - | - | - | 0.1 | nA |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=12\text{V}, T_A=100^\circ\text{C}$ | - | 0.2 | - | - | - | - | μA |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=7.0\text{V}, T_A=100^\circ\text{C}$ | - | - | - | 0.2 | - | - | μA |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=5.0\text{V}, T_A=100^\circ\text{C}$ | - | - | - | - | - | 0.2 | μA |
| BV_{GSS} | $I_G=1.0\mu\text{A}$ | 40 | - | 40 | - | 40 | - | V |
| $V_{GS(OFF)}$ | $V_{DS}=20\text{V}, I_D=1.0\text{nA}$ | 4.0 | 10 | 2.0 | 5.0 | 0.5 | 3.0 | V |
| $V_{GS(f)}$ | $V_{DS}=0, I_G=1.0\text{mA}$ | - | 1.0 | - | 1.0 | - | 1.0 | V |
| $V_{DS(ON)}$ | $I_D=12\text{mA}$ | - | 0.4 | - | - | - | - | V |
| $V_{DS(ON)}$ | $I_D=6.0\text{mA}$ | - | - | - | 0.4 | - | - | V |
| $V_{DS(ON)}$ | $I_D=3.0\text{mA}$ | - | - | - | - | - | 0.4 | V |
| $r_{DS(ON)}$ | $I_D=1.0\text{mA}, V_{GS}=0$ | - | 30 | - | 60 | - | 100 | Ω |
| $r_{ds(on)}$ | $V_{GS}=0, I_D=0, f=1.0\text{kHz}$ | - | 30 | - | 60 | - | 100 | Ω |
| C_{rss} | $V_{GS}=12\text{V}, V_{DS}=0, f=1.0\text{MHz}$ | - | 3.5 | - | - | - | - | pF |
| C_{rss} | $V_{GS}=7.0\text{V}, V_{DS}=0, f=1.0\text{MHz}$ | - | - | - | 3.5 | - | - | pF |
| C_{rss} | $V_{GS}=5.0\text{V}, V_{DS}=0, f=1.0\text{MHz}$ | - | - | - | - | - | 3.5 | pF |
| C_{iss} | $V_{DS}=20\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | - | 14 | - | 14 | - | 14 | pF |

R1 (30-January 2012)

PN4391
PN4392
PN4393

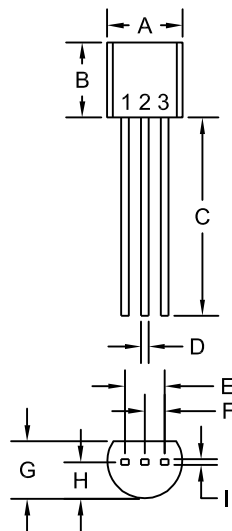
N-CHANNEL
SILICON JFET



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

| SYMBOL | TEST CONDITIONS | PN4391 | | PN4392 | | PN4393 | | UNITS |
|-----------|---------------------------|--------|-----|--------|-----|--------|-----|-------|
| | | MIN | MAX | MIN | MAX | MIN | MAX | |
| t_r | $I_{D(ON)}=12\text{mA}$ | - | 5.0 | - | - | - | - | ns |
| t_r | $I_{D(ON)}=6.0\text{mA}$ | - | - | - | 5.0 | - | - | ns |
| t_r | $I_{D(ON)}=3.0\text{mA}$ | - | - | - | - | - | 5.0 | ns |
| t_f | $V_{GS(OFF)}=12\text{V}$ | - | 15 | - | - | - | - | ns |
| t_f | $V_{GS(OFF)}=7.0\text{V}$ | - | - | - | 20 | - | - | ns |
| t_f | $V_{GS(OFF)}=5.0\text{V}$ | - | - | - | - | - | 30 | ns |
| t_{on} | $I_{D(ON)}=12\text{mA}$ | - | 15 | - | - | - | - | ns |
| t_{on} | $I_{D(ON)}=6.0\text{mA}$ | - | - | - | 15 | - | - | ns |
| t_{on} | $I_{D(ON)}=3.0\text{mA}$ | - | - | - | - | - | 15 | ns |
| t_{off} | $V_{GS(OFF)}=12\text{V}$ | - | 20 | - | - | - | - | ns |
| t_{off} | $V_{GS(OFF)}=7.0\text{V}$ | - | - | - | 35 | - | - | ns |
| t_{off} | $V_{GS(OFF)}=5.0\text{V}$ | - | - | - | - | - | 50 | ns |

TO-92 CASE - MECHANICAL OUTLINE



R1

| SYMBOL | DIMENSIONS | | | |
|---------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A (DIA) | 0.175 | 0.205 | 4.45 | 5.21 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.500 | - | 12.70 | - |
| D | 0.016 | 0.022 | 0.41 | 0.56 |
| E | 0.100 | | 2.54 | |
| F | 0.050 | | 1.27 | |
| G | 0.125 | 0.165 | 3.18 | 4.19 |
| H | 0.080 | 0.105 | 2.03 | 2.67 |
| I | 0.015 | | 0.38 | |

TO-92 (REV: R1)

LEAD CODE:

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

MARKING: FULL PART NUMBER

R1 (30-January 2012)

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 (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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