**PN4391**
**PN4392**
**PN4393**

**N-CHANNEL**
**SILICON JFET**




**TO-92 CASE**

Central Semiconductor Corp.

www.centralsemi.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°C) | **SYMBOL** | | **UNITS** |
|---|---|---|---|
| Gate-Drain Voltage | $V_{GD}$ | 40 | V |
| Gate-Source Voltage | $V_{GS}$ | 40 | V |
| Gate Current | $I_G$ | 50 | mA |
| Power Dissipation | $P_D$ | 625 | mW |
| Operating and Storage Junction Temperature | $T_J$, $T_{stg}$ | -65 to +150 | °C |

**ELECTRICAL CHARACTERISTICS:** ($T_A$=25°C unless otherwise noted)

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

R1 (30-January 2012)

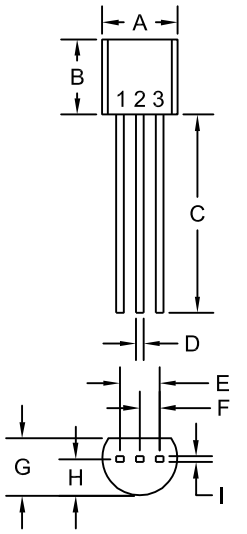
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**ELECTRICAL CHARACTERISTICS - Continued:** ($T_A$=25°C unless otherwise noted)

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

## TO-92 CASE - MECHANICAL OUTLINE




R1

| DIMENSIONS | | | | |
|---|---|---|---|---|
| | INCHES | | MILLIMETERS | |
| SYMBOL | 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)