

2N4391
2N4392
2N4393

SILICON
N-CHANNEL JFET



TO-18 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N4391 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 ($T_C=25^\circ\text{C}$)
Operating and Storage Junction Temperature

SYMBOL

V_{GD} 40
 V_{GS} 40
 I_G 50
 P_D 1.8
 T_J, T_{stg} -65 to +175

UNITS

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

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

| SYMBOL | TEST CONDITIONS | 2N4391 | | 2N4392 | | 2N4393 | | UNITS |
|---------------|--|--------|-----|--------|-----|--------|-----|---------------|
| | | MIN | MAX | MIN | MAX | MIN | MAX | |
| I_{GSS} | $V_{GS}=20\text{V}$ | - | 0.1 | - | 0.1 | - | 0.1 | nA |
| I_{GSS} | $V_{GS}=20\text{V}, T_A=125^\circ\text{C}$ | - | 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 |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=12\text{V}, T_A=150^\circ\text{C}$ | - | 0.2 | - | - | - | - | μA |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=7.0\text{V}, T_A=150^\circ\text{C}$ | - | - | - | 0.2 | - | - | μA |
| $I_{D(OFF)}$ | $V_{DS}=20\text{V}, V_{GS}=5.0\text{V}, T_A=150^\circ\text{C}$ | - | - | - | - | - | 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} | $V_{GS}=12\text{V}, V_{DS}=0, f=1.0\text{MHz}$ | - | 4.0 | - | - | - | - | pF |
| C_{rss} | $V_{GS}=7.0\text{V}, V_{DS}=0, f=1.0\text{MHz}$ | - | - | - | 4.0 | - | - | pF |
| C_{rss} | $V_{GS}=5.0\text{V}, V_{DS}=0, f=1.0\text{MHz}$ | - | - | - | - | - | 4.0 | pF |
| C_{iss} | $V_{DS}=20\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | - | 14 | - | 14 | - | 14 | pF |

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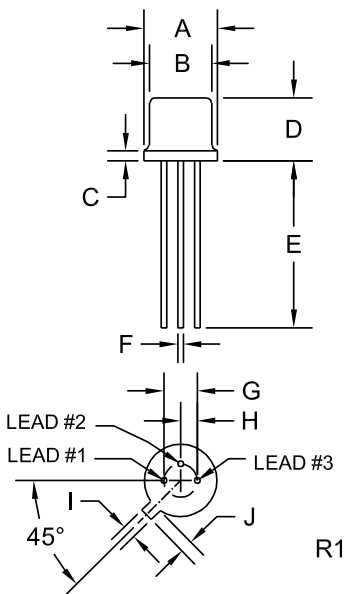
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | 2N4391 | | 2N4392 | | 2N4393 | | 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-18 CASE - MECHANICAL OUTLINE



| SYMBOL | DIMENSIONS | | | |
|---------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A (DIA) | 0.209 | 0.230 | 5.31 | 5.84 |
| B (DIA) | 0.178 | 0.195 | 4.52 | 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 | |
| I | 0.036 | 0.046 | 0.91 | 1.17 |
| J | 0.028 | 0.048 | 0.71 | 1.22 |

TO-18 (REV: R1)

LEAD CODE:

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

MARKING: FULL PART NUMBER

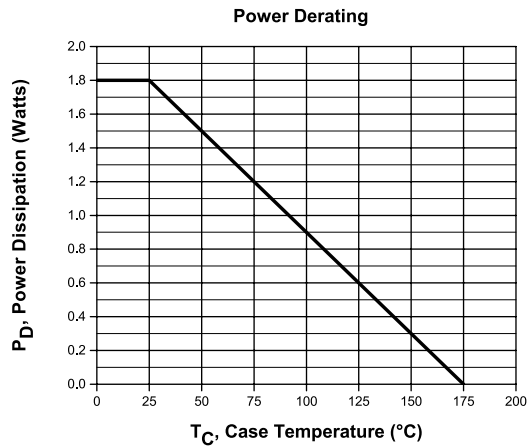
R3 (18-August 2022)

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TYPICAL ELECTRICAL CHARACTERISTICS



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).

CONTACT US

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