

2N4391  
2N4392  
2N4393

N-CHANNEL  
SILICON 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	
$I_{GSS}$	$V_{GS}=20V$	-	0.1	-	0.1	-	0.1	nA
$I_{GSS}$	$V_{GS}=20V, T_A=125^\circ\text{C}$	-	0.2	-	0.2	-	0.2	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=20V$	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
$I_{D(OFF)}$	$V_{DS}=20V, V_{GS}=12V, T_A=150^\circ\text{C}$	-	0.2	-	-	-	-	$\mu\text{A}$
$I_{D(OFF)}$	$V_{DS}=20V, V_{GS}=7.0V, T_A=150^\circ\text{C}$	-	-	-	0.2	-	-	$\mu\text{A}$
$I_{D(OFF)}$	$V_{DS}=20V, V_{GS}=5.0V, T_A=150^\circ\text{C}$	-	-	-	-	-	0.2	$\mu\text{A}$
$BV_{GSS}$	$I_G=1.0\mu\text{A}$	40	-	40	-	40	-	V
$V_{GS(OFF)}$	$V_{DS}=20V, I_D=1.0\text{nA}$	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	$\Omega$
$r_{ds(on)}$	$V_{GS}=0, I_D=0, f=1.0\text{kHz}$	-	30	-	60	-	100	$\Omega$
$C_{rss}$	$V_{GS}=12V, V_{DS}=0, f=1.0\text{MHz}$	-	3.5	-	-	-	-	pF
$C_{rss}$	$V_{GS}=7.0V, V_{DS}=0, f=1.0\text{MHz}$	-	-	-	3.5	-	-	pF
$C_{rss}$	$V_{GS}=5.0V, V_{DS}=0, f=1.0\text{MHz}$	-	-	-	-	-	3.5	pF
$C_{iss}$	$V_{DS}=20V, V_{GS}=0, f=1.0\text{MHz}$	-	14	-	14	-	14	pF

R1 (30-January 2012)

2N4391  
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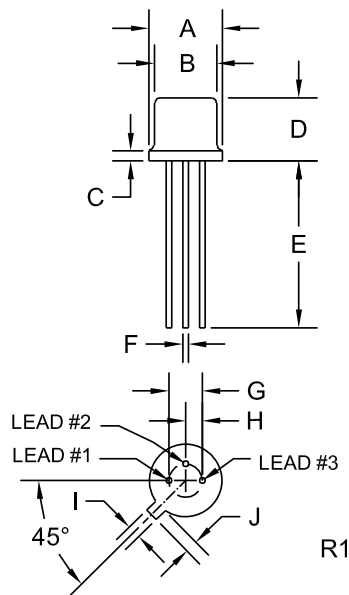
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

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**

R1 (30-January 2012)

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