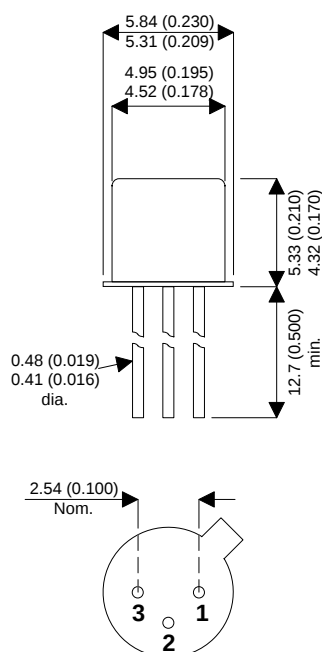


## MECHANICAL DATA

Dimensions in mm (inches)



## TO-18 METAL PACKAGE

### Underside View

PIN 1 – Source    PIN 2 – Drain    PIN 3 – Gate  
(Gate is connected to case)

## JFET SWITCHING N CHANNEL- DEPLETION

### FEATURES

- LOW ON RESISTANCE
- FAST SWITCHING
- MILITARY OPTIONS AVAILABLE

### APPLICATIONS:

- SWITCHING APPLICATIONS

## ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ unless otherwise stated)

|           |                                                |                         |
|-----------|------------------------------------------------|-------------------------|
| $V_{DS}$  | Drain–Source Voltage                           | 40V                     |
| $V_{DG}$  | Drain–Gate Voltage                             | 40V                     |
| $V_{GS}$  | Gate–Source Voltage                            | 40V                     |
| $I_{GF}$  | Forward Gate Current                           | 50mA                    |
| $P_D$     | Total Device Dissipation @ $T_C = 25^{\circ}C$ | 1.8W                    |
|           | Derate above $25^{\circ}C$                     | 10mW/ $^{\circ}C$       |
| $T_J$     | Operating Junction Temperature Range           | –65 to +175 $^{\circ}C$ |
| $T_{STG}$ | Storage Temperature Range                      | –65 to +175 $^{\circ}C$ |

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

| Parameter                    |                                              | Test Conditions           |                                                 | Min. | Typ. | Max. | Unit |
|------------------------------|----------------------------------------------|---------------------------|-------------------------------------------------|------|------|------|------|
| OFF CHARACTERISTICS          |                                              |                           |                                                 |      |      |      |      |
| V <sub>(BR)GSS</sub>         | Gate Source Breakdown Voltage <sup>1</sup>   | I <sub>G</sub> = 1.0μA    | V <sub>DS</sub> = 0                             | 40   |      |      | V    |
| I <sub>GSS</sub>             | Gate Reverse Current                         | V <sub>GS</sub> = 20V     | V <sub>DS</sub> = 0                             |      |      | 0.1  | nA   |
|                              |                                              | V <sub>GS</sub> = 20V     | V <sub>DS</sub> = 0<br>T <sub>A</sub> = 150°C   |      |      | 0.2  | μA   |
| V <sub>GS</sub>              | Gate Source Voltage                          | V <sub>DS</sub> = 20V     | I <sub>D</sub> = 1.0nA                          | -0.2 |      | -5   | V    |
| V <sub>GS(f)</sub>           | Gate Source Forward Voltage                  | I <sub>G</sub> = 1.0mA    | V <sub>DS</sub> = 0                             |      |      | 1.0  | V    |
| I <sub>D(off)</sub>          | Drain Cut-off Current                        | V <sub>GS</sub> = 7V      | V <sub>DS</sub> = 20V                           |      |      | 0.1  | nA   |
|                              |                                              | V <sub>GS</sub> = 7V      | V <sub>DS</sub> = 20V<br>T <sub>A</sub> = 150°C |      |      | 0.2  | μA   |
| ON CHARACTERISTICS           |                                              |                           |                                                 |      |      |      |      |
| I <sub>DSS</sub>             | Zero Gate voltage Drain Current <sup>1</sup> | V <sub>GS</sub> = 0V      | V <sub>DS</sub> = 20V                           | 25   |      | 75   | mA   |
| V <sub>DS(on)</sub>          | Drain Source On-Voltage                      | I <sub>D</sub> = 6mA      | V <sub>GS</sub> = 0                             |      |      | 0.4  | V    |
| r <sub>DS(on)</sub>          | Static Drain Source On Resistance            | I <sub>D</sub> = 1.0mA    | V <sub>GS</sub> = 0                             |      |      | 60   | Ω    |
| ELECTRICAL CHARACTERISTICS   |                                              |                           |                                                 |      |      |      |      |
| C <sub>iss</sub>             | Input Capacitance                            | V <sub>GS</sub> = 0V      | V <sub>DS</sub> = 20V<br>f = 1.0MHz             |      |      | 14   | pF   |
| C <sub>rss</sub>             | Reverse Transfer Capacitance                 | V <sub>GS</sub> = 7V      | V <sub>DS</sub> = 0V<br>f = 1.0MHz              |      |      | 3.5  |      |
| SMALL SIGNAL CHARACTERISTICS |                                              |                           |                                                 |      |      |      |      |
| r <sub>ds(on)</sub>          | Drain–Source “ON” Resistance                 | V <sub>GS</sub> = 0V      | I <sub>D</sub> = 0<br>f = 1.0kHz                |      |      | 60   | Ω    |
| SWITCHING CHARACTERISTICS    |                                              |                           |                                                 |      |      |      |      |
| t <sub>on</sub>              | Turn–On Time                                 | I <sub>D(on)</sub> = 6mA  |                                                 |      |      | 15   | ns   |
| t <sub>off</sub>             | Turn–Off Time                                | V <sub>GS(on)</sub> = 7V  |                                                 |      |      | 35   |      |
| t <sub>r</sub>               | RiseTime                                     | I <sub>D(on)</sub> = 6mA  |                                                 |      |      | 5.0  |      |
| t <sub>f</sub>               | FallTime                                     | V <sub>GS(off)</sub> = 7V |                                                 |      |      | 20   |      |

- 1) Pulse test : Pulse Width < 100 $\mu\text{s}$  ,Duty Cycle < 2%
- 2)  $f_t$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.