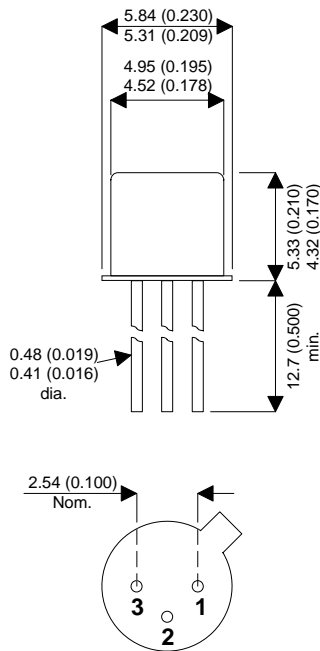


MECHANICAL DATA

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 $^{\circ}C$

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
$V_{(BR)GSS}$	Gate Source Breakdown Voltage ¹	$I_G = 1.0\mu\text{A}$ $V_{DS} = 0$	40		V
I_{GSS}	Gate Reverse Current	$V_{GS} = 20\text{V}$ $V_{DS} = 0$		0.1	nA
		$V_{GS} = 20\text{V}$ $V_{DS} = 0$ $T_A = 150^\circ\text{C}$		0.2	μA
V_{GS}	Gate Source Voltage	$V_{DS} = 20\text{V}$ $I_D = 1.0\text{nA}$	-0.2	-5	V
$V_{GS(f)}$	Gate Source Forward Voltage	$I_G = 1.0\text{mA}$ $V_{DS} = 0$		1.0	V
$I_{D(off)}$	Drain Cut-off Current	$V_{GS} = 7\text{V}$ $V_{DS} = 20\text{V}$		0.1	nA
		$V_{GS} = 7\text{V}$ $V_{DS} = 20\text{V}$ $T_A = 150^\circ\text{C}$		0.2	μA
ON CHARACTERISTICS					
I_{DSS}	Zero Gate voltage Drain Current ¹	$V_{GS} = 0\text{V}$ $V_{DS} = 20\text{V}$	25	75	mA
$V_{DS(on)}$	Drain Source On-Voltage	$I_D = 6\text{mA}$ $V_{GS} = 0$		0.4	V
$r_{DS(on)}$	Static Drain Source On Resistance	$I_D = 1.0\text{mA}$ $V_{GS} = 0$		60	Ω
ELECTRICAL CHARACTERISTICS					
C_{iss}	Input Capacitance	$V_{GS} = 0\text{V}$ $V_{DS} = 20\text{V}$ $f = 1.0\text{MHz}$		14	pF
C_{rss}	Reverse Transfer Capacitance	$V_{GS} = 7\text{V}$ $V_{DS} = 0\text{V}$ $f = 1.0\text{MHz}$		3.5	
SMALL SIGNAL CHARACTERISTICS					
$r_{ds(on)}$	Drain-Source "ON" Resistance	$V_{GS} = 0\text{V}$ $I_D = 0$ $f = 1.0\text{kHz}$		60	Ω
SWITCHING CHARACTERISTICS					
t_{on}	Turn-On Time	$I_{D(on)} = 6\text{mA}$		15	ns
t_{off}	Turn-Off Time	$V_{GS(on)} = 7\text{V}$		35	
t_r	RiseTime	$I_{D(on)} = 6\text{mA}$		5.0	
t_f	FallTime	$V_{GS(off)} = 7\text{V}$		20	

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