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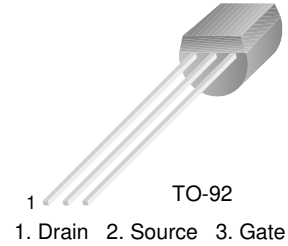


# U1897

## N-Channel JFET Switch

### Features

- This device is designed for low level analog switching, sample and hold circuits and chopper stabilized amplifiers.
- Sourced from Process 51.
- See J111 for characteristics.



### Absolute Maximum Ratings\* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{DG}$	Drain-Gate Voltage	40	V
$V_{GS}$	Gate-Source Voltage	-40	V
$I_{GF}$	Forward Gate Current	50	mA
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	-55 ~ 150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of  $150^\circ\text{C}$ .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics\* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$P_D$	Total Device Dissipation	625	mW
	Derate above $25^\circ\text{C}$	5.0	$\text{mW}/^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C}/\text{W}$

\* Device mounted on FR-4 PCB  $1.6'' \times 1.6'' \times 0.06''$

**Electrical Characteristics \***  $T_C = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max	Units
<b>Off Characteristics</b>					
$V_{(BR)GS}$	Gate-Source Breakdown Voltage	$I_G = -1.0 \mu\text{A}$ , $V_{DS} = 0$	-40		V
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 20 \text{ V}$ , $I_D = 1.0 \text{ nA}$	-5.0	-10	V
$I_{DGO}$	Drain-Gate Leakage Current	$V_{DG} = 20 \text{ V}$ , $I_S = 0$		-200	pA
<b>On Characteristics</b>					
$I_{DSS}$	Zero-Gate Voltage Drain Current *	$V_{DS} = 20 \text{ V}$ , $V_{GS} = 0$	30		mA
$r_{DS(on)}$	Static Drain-Source On Resistance	$I_D = 1.0 \text{ mA}$ , $V_{GS} = 0$		30	$\Omega$
<b>Small Signal Characteristics</b>					
$r_{ds(on)}$	Drain-Source On Resistance	$V_{DS} = V_{GS} = 0$ , $f = 1.0 \text{ kHz}$		30	$\Omega$
$C_{iss}$	Input Capacitance	$V_{DS} = 20$ , $V_{GS} = 0$ , $f = 1.0 \text{ MHz}$		16	pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{GS} = -20 \text{ V}$ , $f = 1.0 \text{ MHz}$		3.5	pF
<b>Switching Characteristics</b>					
$t_{on}$	Turn-On Time	$I_{D(on)} = 6.6 \text{ mA}$		25	ns
$t_{off}$	Turn-Off Time	$V_{GS(off)} = 12.0 \text{ V}$		40	ns

\* Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$



**NOTES:**

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. These ratings are based on a maximum junction temperature of 150degrees C.



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