

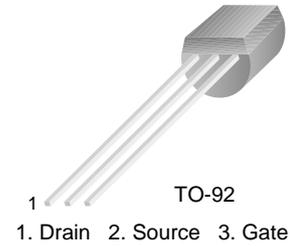


U1897

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°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°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
Off Characteristics					
$V_{(BR)GS}$	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
On Characteristics					
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	Ω
Small Signal Characteristics					
$r_{ds(on)}$	Drain-Source On Resistance	$V_{DS} = V_{GS} = 0$, $f = 1.0 \text{ kHz}$		30	Ω
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
Switching Characteristics					
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:

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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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