n-channel JFETs *designed for . . .*

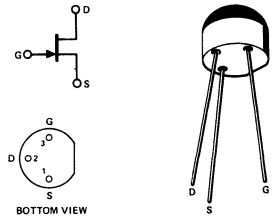
- **Analog Switches**
- **Choppers**
- **Commutators**

Performance Curves NC
See Section 4

BENEFITS

- Low Insertion Loss
  $R_{DS(on)} < 30\ \Omega$ (U1897E)
- No Error or Offset Voltage Generated by Closed Switch
  Purely Resistive

TO-106
See Section 5



ABSOLUTE MAXIMUM RATINGS (25°C)

Gate-Drain or Gate-Source Voltage . . . . . –40 V
Forward Gate Current . . . . . 10 mA
Total Continuous Device Dissipation
at (or Below) T_A = 25°C
(Derate 3.5 mW/°C to 125°C) . . . . . 350 mW
Storage Temperature Range . . . . . –55 to +125°C
Operating Temperature Range . . . . . –55 to +125°C
Lead Temperature
(1/16" from case for 10 seconds) . . . . . 300°C

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

		Characteristic		U1897E Min	U1897E Max	U1898E Min	U1898E Max	U1899E Min	U1899E Max	Unit	Test Conditions
1	STATIC	BV_{GSS}	Gate-Source Breakdown Voltage	–40		–40		–40		V	I_G = –1 μA, V_{DS} = 0
2		BV_{DGO}	Drain-Gate Breakdown Voltage	40		40		40			I_G = –1 μA, I_S = 0
3		BV_{SGO}	Source-Gate Breakdown Voltage	40		40		40			I_G = –1 μA, I_D = 0
4		I_{GSS}	Gate Reverse Current		–400		–400		–400	pA	V_{GS} = –20 V, V_{DS} = 0
5		I_{DGO}	Drain-Gate Leakage Current		200		200		200		V_{DG} = 20 V, I_S = 0
6		I_{SGO}	Source-Gate Leakage Current		200		200		200		V_{SG} = 20 V, I_D = 0
7		$I_{D(off)}$	Drain Cutoff Current		200		200		200		V_{DS} = 20 V, V_{GS} = –12 V (U1897E)
8					10		10		10	nA	V_{GS} = –8 V (U1898E) / V_{GS} = –6 V (U1899E), T_A = 85°C
9		$V_{GS(off)}$	Gate-Source Cutoff Voltage	–5.0	–10	–2.0	–7.0	–1.0	–5.0	V	V_{DS} = 20 V, I_D = 1 nA
10		I_{DSS}	Saturation Drain Current (Note 1)	30		15		8.0		mA	V_{DS} = 20 V, V_{GS} = 0
11		$V_{DS(on)}$	Drain-Source ON Voltage		0.2		0.2		0.2	V	V_{GS} = 0, I_D = 6.6 mA (U1897E); I_D = 4.0 mA (U1898E), I_D = 2.5 mA (U1899E)
12		$r_{DS(on)}$	Static Drain-Source ON Resistance		30		50		80	Ω	I_D = 1 mA, V_{GS} = 0
13	DYNAMIC	C_{DG}	Drain-Gate Capacitance		5		5		5	pF	V_{DG} = 20 V, I_S = 0
14		C_{SG}	Source-Gate Capacitance		5		5		5		V_{SG} = 20 V, I_D = 0
15		C_{iss}	Common-Source Input Capacitance		16		16		16		V_{DS} = 20 V, V_{GS} = 0, f = 1 MHz
16		C_{rss}	Common-Source Reverse Transfer Capacitance		3.5		3.5		3.5		
17		$t_{d(on)}$	Turn ON Delay Time		15		15		20	ns	Switching Time Test Conditions
18		t_r	Rise Time		10		20		40		
19		t_{off}	Turn OFF Time		40		60		80		

Switching Time Test Conditions	U1897E	U1898E	U1899E
V_{DD}	3 V	3 V	3 V
$V_{GS(on)}$	0	0	0
$V_{GS(off)}$	–12 V	–8 V	–6 V
R_L	430 Ω	700 Ω	1100 Ω
$I_{D(on)}$	6.6 mA	4 mA	2.5 mA

NC

NOTE:
1. Pulse test pulsewidth = 300 μs; duty cycle ≤ 3%.