depletion-type n-channel MOSFETs *designed for . . .*

- **Small-Signal Amplifiers**
- **Ultra-High Input Impedance Amplifiers**
  - **Electrometers**
  - **Smoke Detectors**
  - **pH Meters**
- **Low-Level Chopper Amplifiers**

Performance Curves MA See Section 4

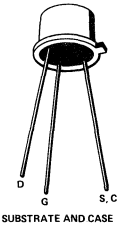
BENEFITS

- Insignificant Loading in High Impedance Circuits
  $R_{IN} > 10^{15}\ \Omega$
- Minimum Error in Low-Level Choppers
  $r_{DS(on)} < 100\ \Omega$ (M101)
- Good Off-Isolation as a Switch
  $I_{D(off)} < 1$ nA

ABSOLUTE MAXIMUM RATINGS (25°C)

Drain-to-Source Voltage . . . . . 20 V
Gate-to-Channel Voltage (Note 1) . . . . . ±60 V
Drain Current . . . . . 20 mA
Total Device Dissipation at (or below)
25°C Free-Air Temperature (Note 2) . . . . . 300 mW
Storage Temperature Range . . . . . -65 to +200°C
Operating Junction Temperature. . . . . -55 to +150°C
Lead Temperature
(1/16" from case for 10 seconds) . . . . . .255°C

TO-18
See Section 5



SUBSTRATE AND CASE INTERNALLY CONNECTED TO SOURCE PIN.

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

		Characteristic		M100 Min	M100 Typ	M100 Max	M101 Min	M101 Typ	M101 Max	Unit	Test Conditions	
1	STATIC	BV_{DSX}	Drain-Source Breakdown Voltage	20			20			V	I_D = 1 μA, V_{GS} = -10 V	
2		$V_{GS(off)}$	Gate-Source Cutoff Voltage			-5			-8		V_{DS} = 10 V, I_D = 1 μA	
3		I_{DSS}	Saturation Drain Current	1.5		4.5	4.0		12.0	mA	V_{DS} = 10 V, V_{GS} = 0	
4		$I_{D(off)}$	Drain Cutoff Current			1			1	nA	V_{DS} = 5 V, V_{GS} = -10 V	
5		r_{GS}	Common-Source Parallel Input Resistance	10^{13}	10^{16}		10^{13}	10^{16}		Ω	V_{GS} = 30 V, V_{DS} = 0	
6		$r_{DS(on)}$	Drain-Source ON Resistance		350			300			V_{GS} = 0, V_{DS} = 0	
7					150			100			V_{GS} = 10 V, V_{DS} = 0	
8	DYN	g_{fs}	Common-Source Forward Transconductance	1,000		4,000	1,500		5,000	μmho	V_{DS} = 10 V, V_{GS} = 0	f = 1 kHz
9		C_{iss}	Common-Source Input Capacitance		3.0	7.5		3.0	7.5	pF		f = 140 kHz

MA

NOTES:

1. Permanent damage may result if voltages greater than ±60 V are applied to the gate.
2. Derate linearly to 150°C free-air temperature at rate of 2.4 mW/°C.