n-channel D-MOS FETs

Siliconix

designed for Military and Industrial Applications . . .

- **VHF/UHF Amplifiers**
- **Mixers**
- **Oscillators**
- **High-Speed Switching**
- **Normally "On" Switch**
- **Analog/Digital Switch**
- **Multiplexer**
- **Low-Voltage Switch**

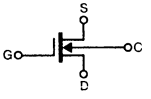
FEATURES
- **High Figure-of-Merit gfs/C**
- **High Speed Switch (< 1 /ns)**
- **High Gain**
- **Wide Dynamic Range-Input**
- **Low Voltage Requirements = Battery Operation**

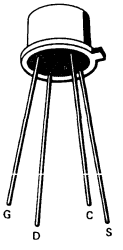
BENEFITS
- **High Frequency Gain**
- **High Speed Switching**
- **Low Distortion**

ABSOLUTE MAXIMUM RATINGS (°C)

Drain Current ..... 50 mA
Total Device Dissipation at 25°C
Case Temperature 1.2W
Storage Temperature Range ..... −65° to +200°C
Lead Temperature
(1/16 from case for 10 sec.) ..... 300°C
Operating Temperature Range ..... −55° to +150°C

TO-72
See Section 6





DC ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified.)

	Parameter		Test Conditions		Min	Typ	Max	Unit
1	BV_{DS}	Drain-Source Breakdown Voltage	I_D = 1 μA V_{GS} = V_{BS} = 0		25			V
2	I_{GSS}	Gate Reverse Current	V_{GS} = ±25V V_{BS} = 0			±0.01	±1.0	nA
3	$V_{GS(off)}$	Gate-Source Cutoff Voltage	V_{DS} = 10V, V_{BS} = 0 I_D = 1 μA			−1.0	−2.0	V
4	V_{GS}	Gate-Source Voltage	V_{DG} = 10V	I_D = 5 mA	0	+0.5	+1.0	V
5			V_{BS} = 0	I_D = 20 mA		+1.7	+2.5	V
6	I_{DSS}	Saturation Drain Current	V_{DS} = 10V V_{GS} = V_{BS} = 0		1.0		5.0	mA
7	r_{DS}	Drain-Source ON Resistance	V_{DS} = 100 mV V_{BS} = 0	V_{GS} = 0		150	200	Ω
8				V_{GS} = +5V		35	50	Ω

AC ELECTRICAL CHARACTERISTICS

	Parameter		Test Conditions		Min	Typ	Max	Unit
9	g_{fs}	Forward Transconductance	V_{DG} = 10V, V_{BS} = 0, f = 1 KHz	I_D = 20 mA	10	14	20	mmho
10				I_D = 5 mA	8	10		mmho
11	g_{os}	Common-Source Output Conductance	V_{DG} = 10V, V_{BS} = 0, I_D = 20 mA, f = 1 MHz			80	200	μmho
12	C_{iss}	Common-Source Input Capacitance	V_{DG} = 10V, V_{BS} = 0, I_D = 5 mA, f = 1 MHz			4.0	.0	pF
13	C_{rss}	Reverse Transfer Capacitance				1.5	2.5	pF

SWITCHING CHARACTERISTIC

		$t_{d(ON)}$ – ns		t_r – ns		t_{OFF} – ns	
V_{DD}	R_L	V_{IN} – 2 to + 0V	V_{IN} – 2 to +4V	–2 to +0V	–2 to +4V	–2 to +0V	–2 to +4V
		Typ	Typ	Typ	Typ	Typ	Typ
5	670	1.2	0.8	0.7	0.4	4.0	6.0
10	670	1.3	0.8	2.3	0.4	4.4	5.3
15	670	1.5	0.8	4.3	0.5	4.4	4.8