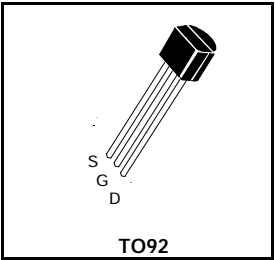


# N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

ISSUE 2- NOVEMBER 94

## 2N7000



### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Emitter Voltage	$V_{CES}$	60	V
Continuous Drain Current	$I_D$	0.2	A
Pulsed Drain Current	$I_{DM}$	0.5	A
Gate Source Voltage	$V_{GS}$	$\pm 40$	V
Power Dissipation at $T_{amb}=25^\circ C$	$P_{tot}$	400	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^\circ C$

### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ C$ unless otherwise stated)

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	$BV_{DSS}$	60		V	$I_D=10\mu A, V_{GS}=0V$
Gate-Source Threshold Voltage	$V_{GS(th)}$	0.8	3.0	V	$I_D=1mA, V_{DS}=V_{GS}$
Gate-Body Leakage	$I_{GSS}$		10	nA	$V_{GS}=\pm 15V, V_{DS}=0V$
Zero Gate Voltage Drain Current	$I_{DSS}$		1 1	$\mu A$ mA	$V_{DS}=48V, V_{GS}=0$ $V_{DS}=48V, V_{GS}=0V, T=125^\circ C(2)$
On-State Drain Current(1)	$I_{D(on)}$	75		mA	$V_{DS}=10V, V_{GS}=4.5V$
Static Drain-Source On-State Voltage (1)	$V_{DS(on)}$		2.5 0.4	V V	$V_{GS}=10V, I_D=500mA$ $V_{GS}=4.5V, I_D=75mA$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		5	$\Omega$	$V_{GS}=10V, I_D=500mA$
Forward Transconductance(1)(2)	$g_{fs}$	100		mS	$V_{DS}=10V, I_D=200mA$
Input Capacitance (2)	$C_{iss}$		60	pF	$V_{DS}=25V, V_{GS}=0V, f=1MHz$
Common Source Output Capacitance (2)	$C_{oss}$		25	pF	
Reverse Transfer Capacitance (2)	$C_{rss}$		5	pF	
Turn-On Time (2)(3)	$t_{(on)}$		10	ns	$V_{DD}=15V, I_D=500mA$ $R_g=25\Omega, R_L=25\Omega$
Turn-Off Time (2)(3)	$t_{(off)}$		10	ns	

(1) Measured under pulsed conditions. Width=300 $\mu s$ . Duty cycle  $\leq 2\%$  (2) Sample test.  
 (3) Switching times measured with 50 $\Omega$  source impedance and <5ns rise time on a pulse generator