N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

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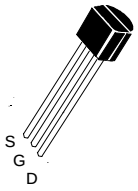
2N7000



TO92

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 Vootage	V_{GS}	±40	V
Power Dissipation at T_{amb}=25°C	P_{tot}	400	mW
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated)

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	BV_{DSS}	60		V	I_D=10μA, V_{GS}=0V
Gate-Source Threshold Voltage	$V_{GS(th)}$	0.8	3.0	V	ID=1mA, V_{DS}= V_{GS}
Gate-Body Leakage	I_{GSS}		10	nA	V_{GS}=± 15V, V_{DS}=0V
Zero Gate Voltage Drain Current	I_{DSS}		1 1	μA mA	V_{DS}=48V, V_{GS}=0 V_{DS}=48V, V_{GS}=0V, T=125°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	Ω	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=25Ω, R_L=25Ω
Turn-Off Time (2)(3)	$t_{(off)}$		10	ns	

(1) Measured under pulsed conditions. Width=300μs. Duty cycle ≤2% (2) Sample test.
(3) Switching times measured with 50Ω source impedance and <5ns rise time on a pulse generator