SOT23 N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

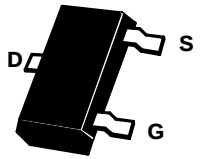
ISSUE 4 – APRIL 2006

2N7002

FEATURES

* 60 Volt V_{CEO}

PARTMARKING DETAIL – 702



SOT23

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DS}	60	V
Continuous Drain Current at T_{amb}=25°C	I_D	115	mA
Pulsed Drain Current	I_{DM}	800	mA
Gate-Source Voltage	V_{GS}	± 40	V
Power Dissipation at T_{amb}=25°C	P_{tot}	330	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	$V_{GS(th)}$	1	2.5	V	I_D=250mA, V_{DS}= V_{GS}
Gate-Body Leakage	I_{GSS}		10	nA	V_{GS}=± 20V, V_{DS}=0V
Zero Gate Voltage Drain Current	I_{DSS}		1 500	μA μA	V_{DS}=48V, V_{GS}=0V V_{DS}=48V, V_{GS}=0V, T=125°C(2)
On-State Drain Current(1)	$I_{D(on)}$	500		mA	V_{DS}=25V, V_{GS}=10V
Static Drain-Source On-State Voltage (1)	$V_{DS(on)}$		3.75 375	V mV	V_{GS}=10V, I_D=500mA V_{GS}=5V, I_D=50mA
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		7.5 7.5	Ω Ω	V_{GS}=10V, I_D=500mA V_{GS}=5V, I_D=50mA
Forward Transconductance (1)(2)	g_{fs}	80		mS	V_{DS}=25V, I_D=500mA
Input Capacitance (2)	C_{iss}		50	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)	$t_{(on)}$		20	ns	V_{DD}≈30V, I_D=200mA R_g=25Ω, R_L=150Ω
Turn-Off Time (2)(3)	$t_{(off)}$		20	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
Spice parameter data is available upon request for this device