

# SOT23 N-CANNEL ENHANCEMENT MODE VERTICAL DMOS FET

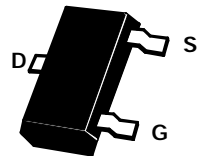
## 2N7002

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### FEATURES

\* 60 Volt  $V_{CE0}$

PARTMARKING DETAIL – 702



SOT23

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	$V_{DS}$	60	V
Continuous Drain Current at $T_{amb}=25^{\circ}C$	$I_D$	115	mA
Pulsed Drain Current	$I_{DM}$	800	mA
Gate-Source Voltage	$V_{GS}$	$\pm 40$	V
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	330	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	$V_{GS(th)}$	1	2.5	V	$I_D=250mA, V_{DS}=V_{GS}$
Gate-Body Leakage	$I_{GSS}$		10	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
Zero Gate Voltage Drain Current	$I_{DSS}$		1 500	$\mu A$ $\mu A$	$V_{DS}=48V, V_{GS}=0V$ $V_{DS}=48V, V_{GS}=0V, T=125^{\circ}C(2)$
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	$\Omega$ $\Omega$	$V_{GS}=10V, I_D=500mA$ $V_{GS}=5V, I_D=50mA$
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	$V_{DD}=30V, I_D=200mA$ $R_g=25\Omega, R_L=150\Omega$
Turn-Off Time (2)(3)	$t_{(off)}$		20	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  
Spice parameter data is available upon request for this device