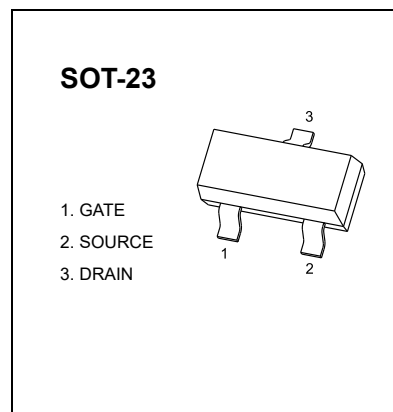


SOT-23 Plastic-Encapsulate MOSFETS

2N7002 MOSFET (N-Channel)

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60 V	2.5Ω@10V	115mA
	3Ω@5V	



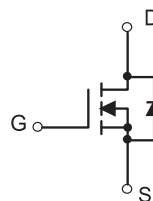
FEATURE

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

Equivalent Circuit



MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	0.115	A
Power Dissipation	P_D	0.225	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-50 ~ +150	$^\circ\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25\text{ }^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{ V}$, $I_D=250\text{ }\mu\text{A}$	60			V
Gate-Threshold Voltage	$V_{th(GS)}$	$V_{DS}=V_{GS}$, $I_D=250\text{ }\mu\text{A}$	1	1.6	2.5	
Gate-body Leakage	I_{GSS}	$V_{DS}=0\text{ V}$, $V_{GS}=\pm 20\text{ V}$			± 80	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{ V}$, $V_{GS}=0\text{ V}$			80	nA
On-state Drain Current	$I_{D(ON)}$	$V_{GS}=10\text{ V}$, $V_{DS}=7\text{ V}$	500			mA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{ V}$, $I_D=500\text{ mA}$		0.9	2.5	Ω
		$V_{GS}=5\text{ V}$, $I_D=50\text{ mA}$		1.1	3	
Forward Trans conductance	g_{fs}	$V_{DS}=10\text{ V}$, $I_D=200\text{ mA}$	80			ms
Drain-source on-voltage	$V_{DS(on)}$	$V_{GS}=10\text{ V}$, $I_D=500\text{ mA}$			3.75	V
		$V_{GS}=5\text{ V}$, $I_D=50\text{ mA}$			0.375	V
Diode Forward Voltage	V_{SD}	$I_S=115\text{ mA}$, $V_{GS}=0\text{ V}$	0.55		1.2	V
Input Capacitance *	C_{iss}	$V_{DS}=25\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$			50	pF
Output Capacitance *	C_{oss}				25	
Reverse Transfer Capacitance *	C_{rss}				5	

Turn-on Time *	$t_{d(on)}$	$V_{DD}=25\text{ V}$, $R_L=50\Omega$, $I_D=500\text{ mA}$, $V_{GEN}=10\text{ V}$ $R_G=25\Omega$			20	ns
Turn-off Time *	$t_{d(off)}$				40	

SWITCHING TIME

*These parameters have no way to verify.

Typical Characteristics

