

2N7002

2N7002 N-Channel MOSFET

General description

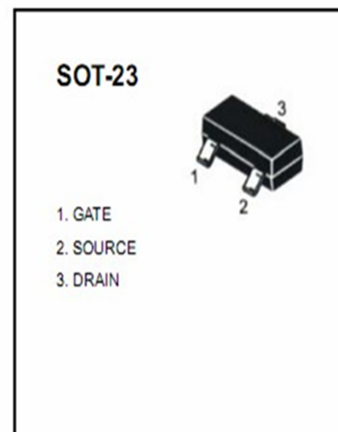
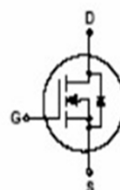
N-Channel MOSFET

Features:

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

Device Marking:

Device Type	Marking
2N7002	7002 or 7002K



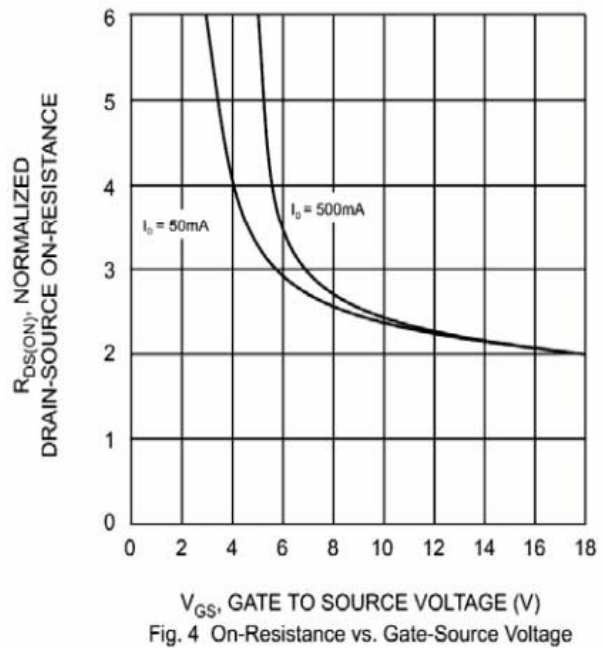
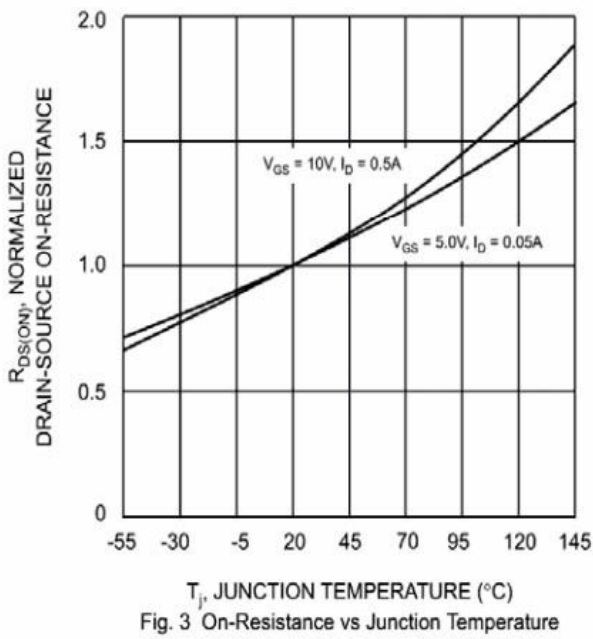
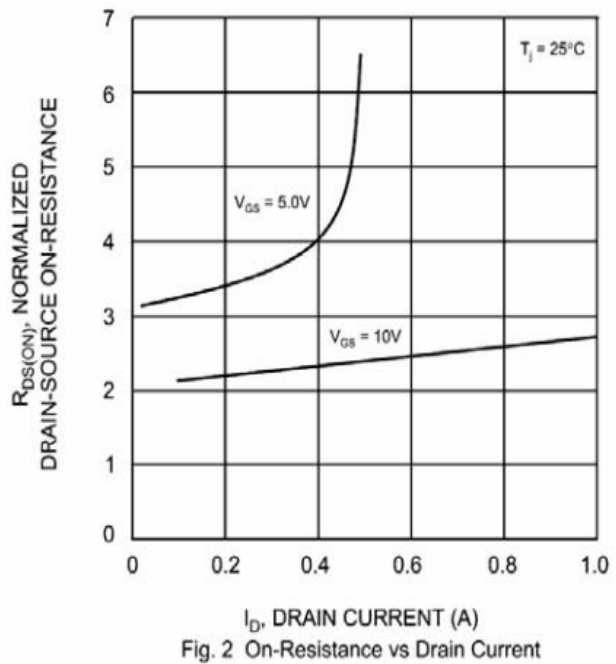
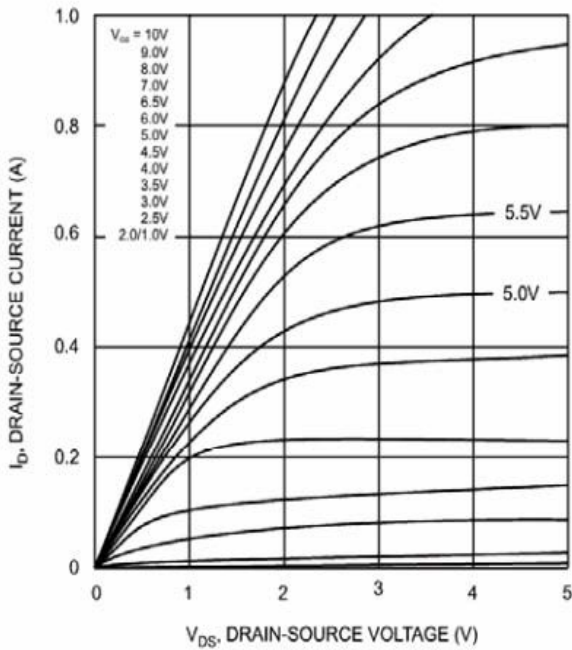
Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	60	V
I_D	Drain current	115	mA
P_D	Power Dissipation	225	mW
T_j	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55-150	°C

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Threshold Voltage	$V_{th(GS)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.7	2.5	V
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
On-state Drain Current	$I_{D(ON)}$	$V_{DS}=7V, V_{GS}=10V$	500			mA
Drain-Source On-Resistance	$r_{DS(ON)}$	$V_{GS}=10V, I_D=100mA$		1	2	Ω
		$V_{GS}=4.5V, I_D=50mA$		1.1	3	Ω
Forward Trans conductance	g_{fs}	$V_{DS}=10V, I_D=200mA$	80		500	ms
Drain-source on-voltage	$V_{DS(ON)}$	$V_{GS}=10V, I_D=500mA$	0.5		3.75	V
		$V_{GS}=5V, I_D=50mA$	0.05		0.375	V
Diode Forward Voltage	V_{SD}	$I_S=115mA, V_{GS}=0V$	0.55		1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$			50	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				5	
Turn-on Time	$t_d(on)$	$V_{DD}=25V, R_L=50\Omega, I_D=500mA, V_{GEN}=10V, R_G=25\Omega$			20	ns
Turn-off Time	$t_d(off)$				40	ns

Typical Performance Characteristics



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