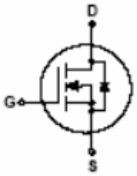
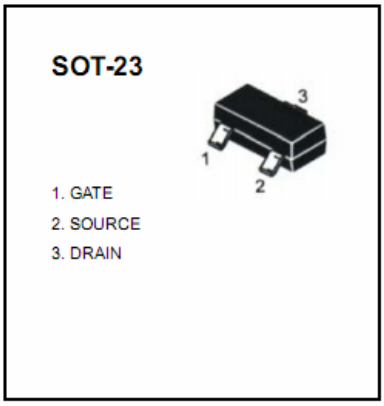
2N7002 MOSFET(N-Channel)

FEATURES

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





MARKING:7002

MAXIMUM RATINGS (TA=25℃ unless otherwise noted)

Symbol (符号)	Parameter (参数名称)	Value (额定值)	Units (单位)
V_{DS}	Drain-Source voltage	60	V
I_D	Drain current	115	mA
P_D	Power Dissipation	225	mW
Tj	Junction Temperature	150	℃
Tstg	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	60			V
Gate-Threshold Voltage	$V_{th(GS)}$	V_{DS}= V_{GS}, I_D=250 uA	1	1.7	2.5	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	uA
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	gfs	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	Ciss	V_{DS}=25V, V_{GS}=0V, f=1MHz			50	pF
Output Capacitance	Coss				25	
Reverse Transfer Capacitance	Crss				5	

SWITCHING TIME

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

Typical Characteristics

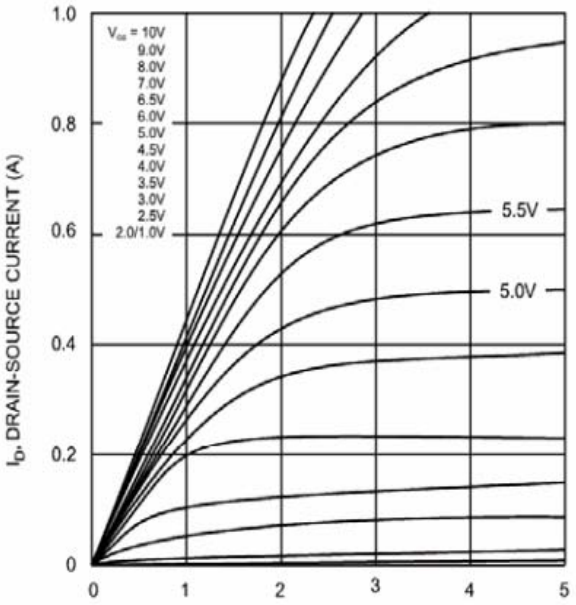


Fig. 1 On-Region Characteristics

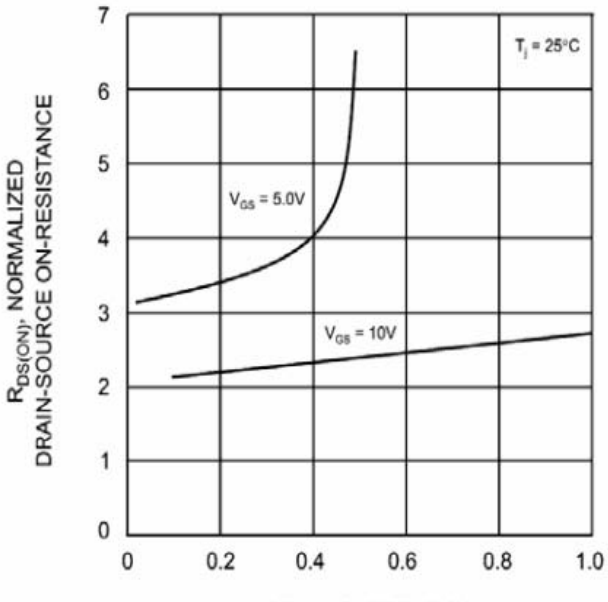


Fig. 2 On-Resistance vs Drain Current

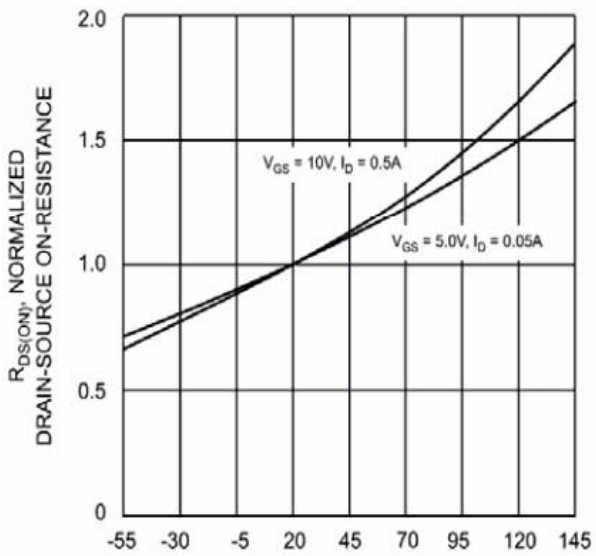


Fig. 3 On-Resistance vs Junction Temperature

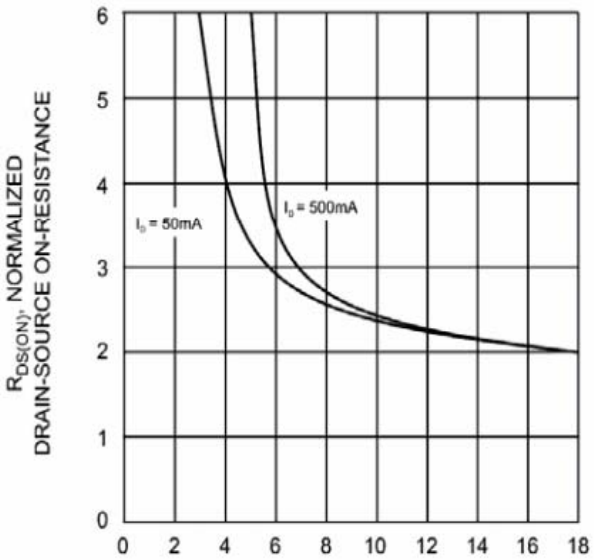


Fig. 4 On-Resistance vs. Gate-Source Voltage