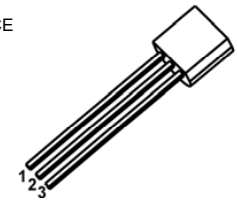
TO-92 Plastic-Encapsulate MOSFETS

2N7000 MOSFET (N-Channel)

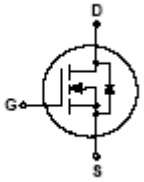
TO-92

1. SOURCE
2. GATE
3. DRAIN



FEATURES

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



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Continuous Drain Current	I_D	0.2	A
Power Dissipation	P_D	0.625	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	200	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55 ~+150	

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

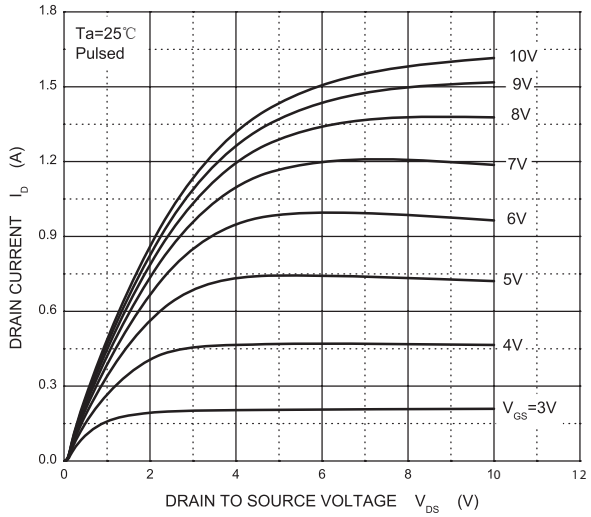
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0 V, I_D=10μA	60			V
Gate-Threshold Voltage*	$V_{(GS)th}$	V_{DS}=V_{GS}, I_D=1mA	0.8		3	
Gate-body Leakage	I_{GSS}	V_{DS}=0 V, V_{GS}=±15 V			±10	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60 V, V_{GS}=0 V			1	μA
On-state Drain Current	$I_{D(ON)}$	V_{GS}=4.5 V, V_{DS}=10 V	75			mA
Drain-Source On-Resistance*	$R_{DS(on)}$	V_{GS}=4.5V, I_D=75mA			6	Ω
		V_{GS}=10V, I_D=500mA			5	
Forward Trans conductance*	g_{fs}	V_{DS}=10 V, I_D=200mA	100			ms
Drain-source on-voltage*	$V_{DS(on)}$	V_{GS}=10V, I_D=500mA			2.5	V
		V_{GS}=4.5V, I_D=75mA			0.45	V
Input Capacitance **	C_{iss}	V_{DS}=25V, V_{GS}=0V, f=1MHz			60	pF
Output Capacitance **	C_{oss}				25	
Reverse Transfer Capacitance **	C_{rss}				5	
Turn-on Time **	$t_{d(on)}$	V_{DD}=15 V, R_L=30Ω			10	ns
Turn-off Time **	$t_{d(off)}$	I_D=500mA,V_{GEN}=10 V R_G=25Ω			10	

*Pulse test

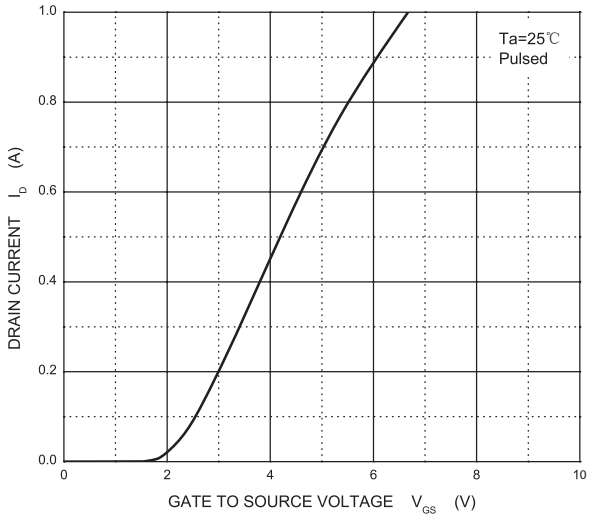
**These parameters have no way to verify.

Typical Characteristics 2N7000

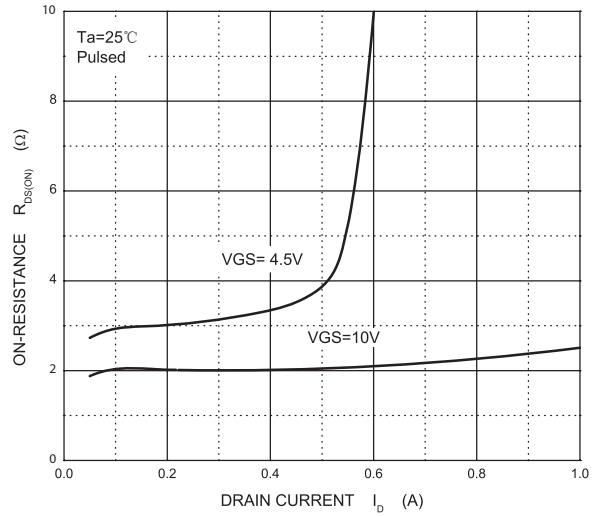
Output Characteristics



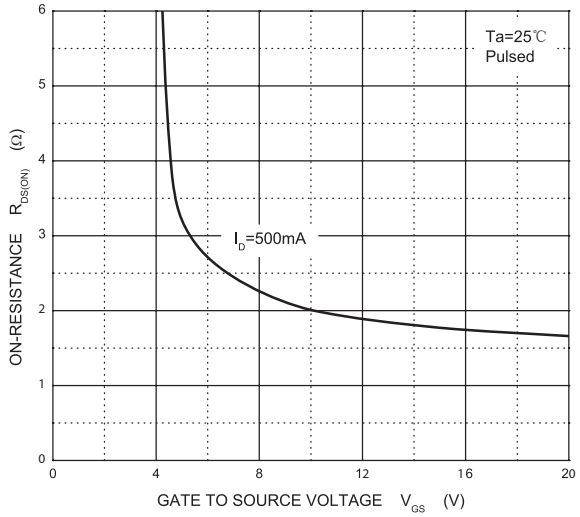
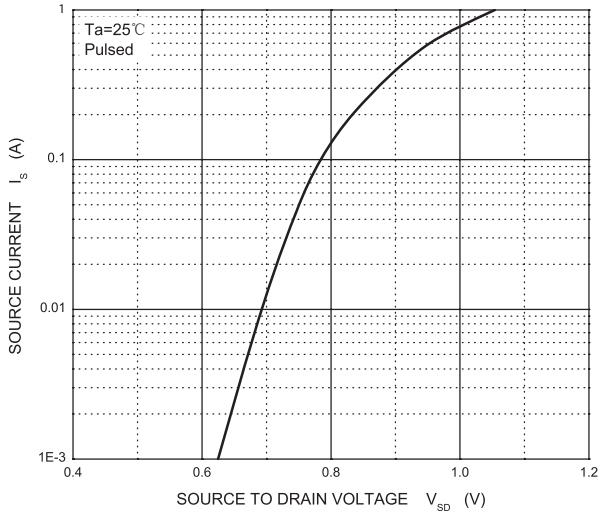
Transfer Characteristics



$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}