

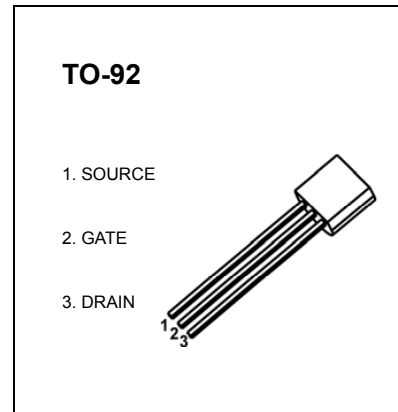
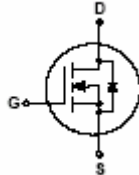


TO-92 Plastic-Encapsulate MOSFETS

2N7000 MOSFET (N-Channel)

FEATURES

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



MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ 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	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ +150	

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

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

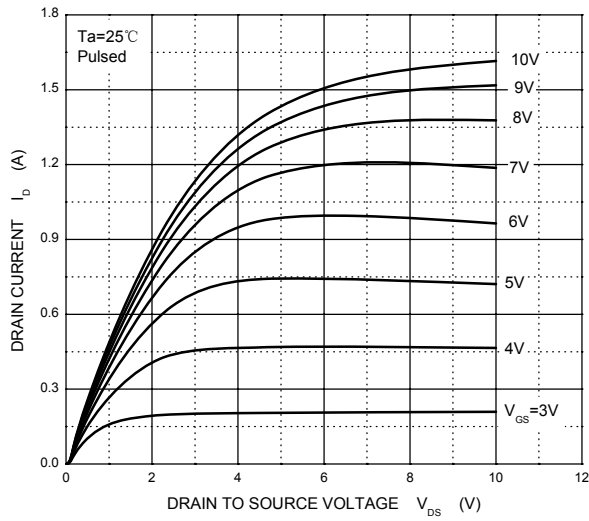
*Pulse test

**These parameters have no way to verify.

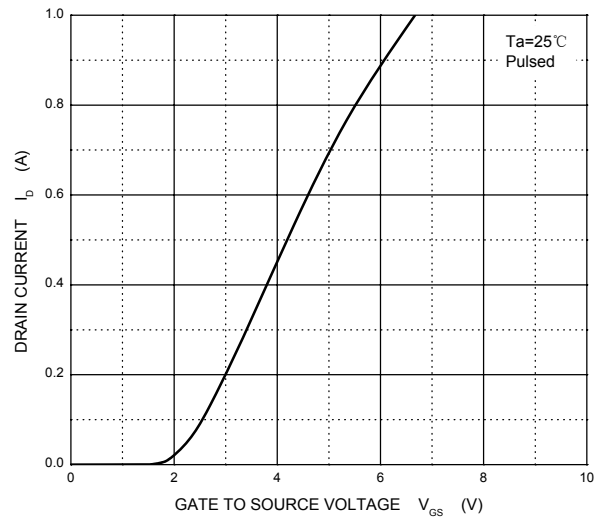
Typical Characteristics

2N7000

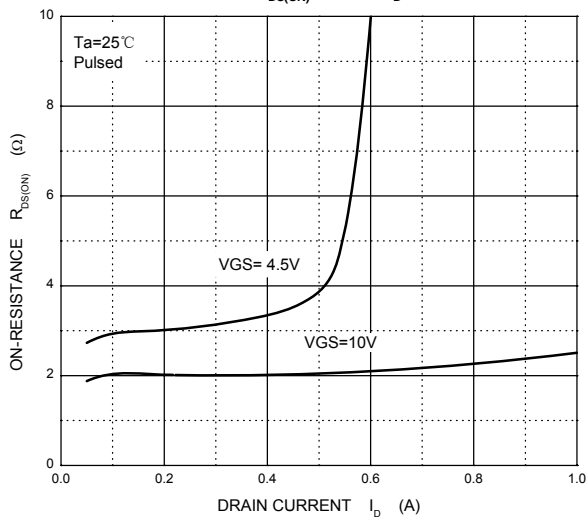
Output Characteristics



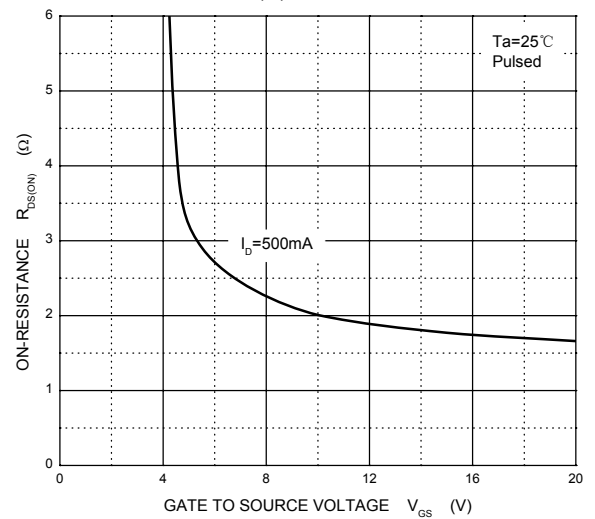
Transfer Characteristics



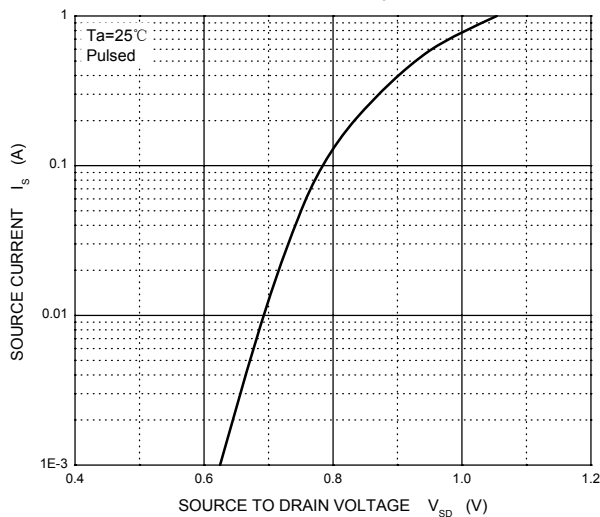
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



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