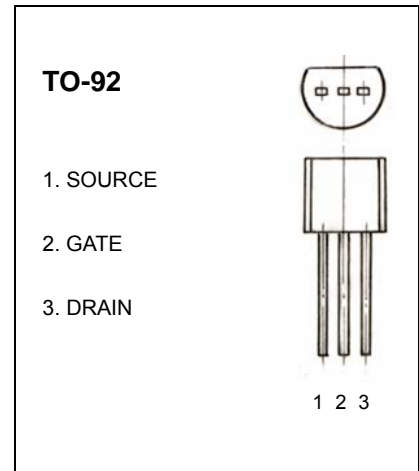
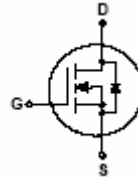


2N7000 MOSFET(N-Channel)

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)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	60	V
I_D	Drain Current	200	mA
P_D	Power Dissipation	350	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-150	$^\circ\text{C}$

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0, I_D=10\mu\text{A}$	60			V
Gate-Threshold Voltage*	$V_{th(GS)}$	$V_{DS}=V_{GS}, I_D=1\text{mA}$	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	Ω
Forward Trans conductance*	g_{fs}	$V_{DS}=10\text{V}, I_D=200\text{mA}$	100			ms
Drain-Source On-Voltage*	$V_{DS(ON)}$	$I_D=500\text{mA}, V_{GS}=10\text{V}$			2.5	V
		$I_D=75\text{mA}, V_{GS}=4.5\text{V}$			0.45	
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	

* pulse test

SWITCHING TIME

Turn-on Time	$t_{d(on)}$	$V_{DD}=15\text{V}, R_L=30\Omega$ $I_D=500\text{mA}, V_{GEN}=10\text{V}$ $R_{GEN}=25\Omega$			10	ns
Turn-off Time	$t_{d(off)}$	$V_{DD}=15\text{V}, R_L=30\Omega$ $I_D=500\text{mA}, V_{GEN}=10\text{V}$ $R_{GEN}=25\Omega$			10	ns

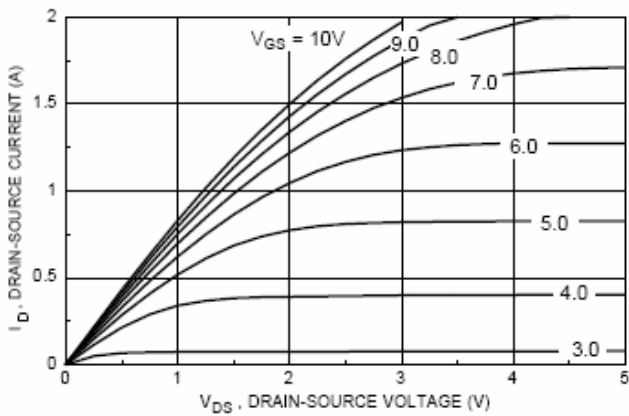


Figure 1. On-Region Characteristics

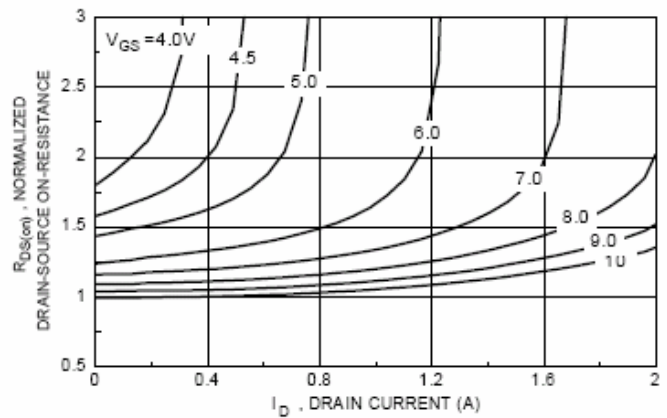


Figure 2. On-Resistance Variation with Gate Voltage and Drain Current

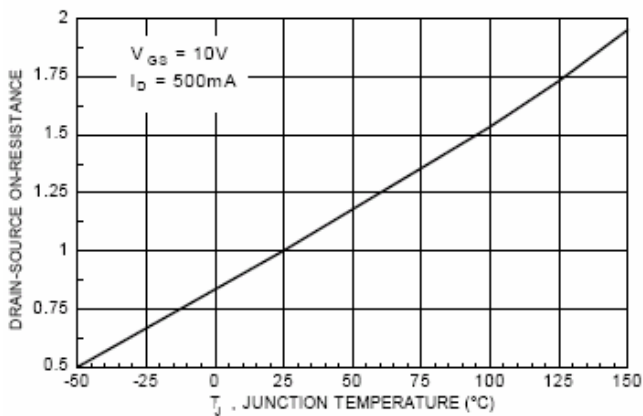


Figure 3. On-Resistance Variation with Temperature

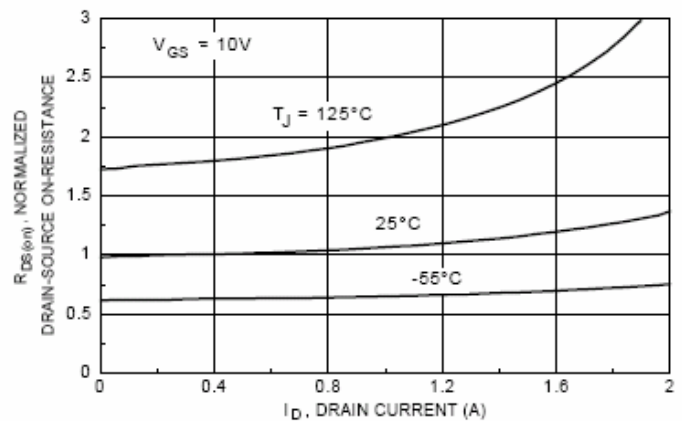


Figure 4. On-Resistance Variation with Drain Current and Temperature

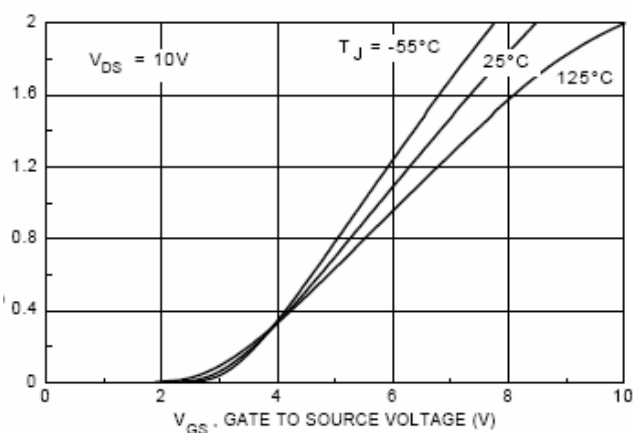


Figure 5. Transfer Characteristics

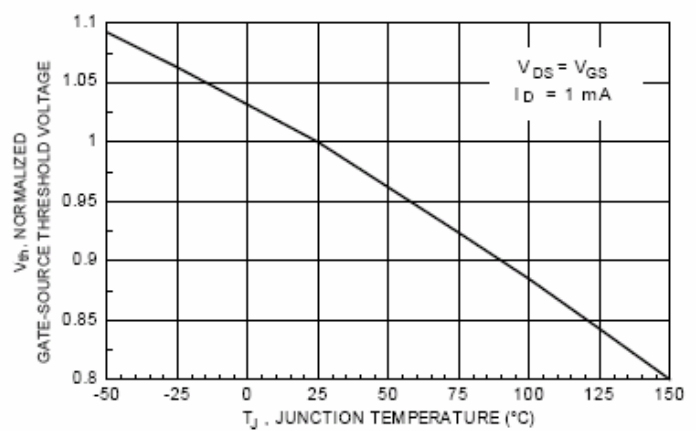


Figure 6. Gate Threshold Variation with Temperature

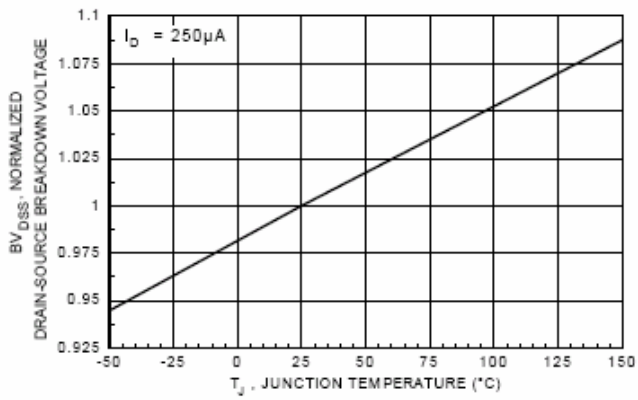


Figure 7. Breakdown Voltage Variation with Temperature

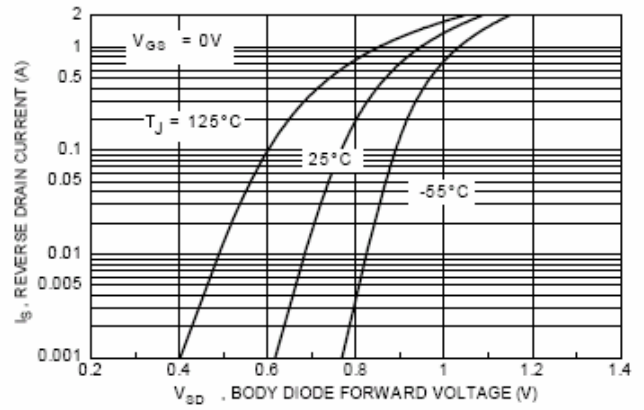


Figure 8. Body Diode Forward Voltage Variation with Temperature

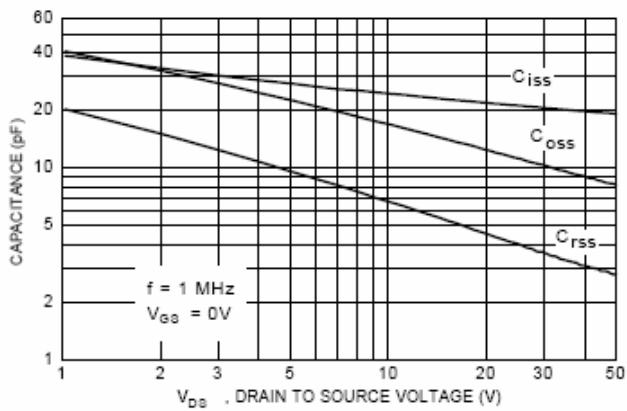


Figure 9. Capacitance Characteristics

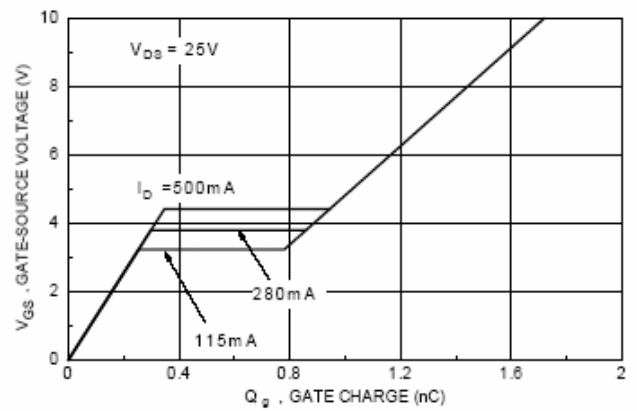


Figure 10. Gate Charge Characteristics