

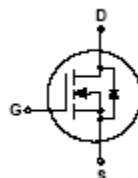


TO-92 Plastic-Encapsulate MOSFET

2N7000 MOSFET(N-Channel)

FEATURES

- High density cell design for low RDS(ON)
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability



TO-92

1. SOURCE
2. GATE
3. DRAIN



MAXIMUM RATINGS* T_A=25°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	400	mW
T _J , T _{stg}	Junction and Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS(T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =10μA	60	70		V
Gate-Threshold Voltage*	V _{th(GS)}	V _{DS} =V _{GS} , I _D =1mA	0.8	2.1	3	
Gate-body Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±15V			±10	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
		V _{DS} =60V, V _{GS} =0V, T _J =125°C			500	
On-state Drain Current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =10V	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	Ω
Forward Transconductance*	g _{fs}	V _{DS} =10V, I _D =200mA	100			ms
Drain-Source On-Voltage*	V _{DS(ON)}	I _D =500mA, V _{GS} =10V		0.6	2.5	V
		I _D =75mA, V _{GS} =4.5V		0.14	0.4	
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	

* pulse test

SWITCHING TIME

Turn-on Time	t _{d(on)}	V _{DD} =15V, R _L =25Ω I _D =500mA, V _{GS} =10V R _{GEN} =25Ω			10	ns
Turn-off Time	t _{d(off)}	V _{DD} =15V, R _L =25Ω I _D =500mA, V _{GS} =10V R _{GEN} =25Ω			10	ns

Typical Characteristics

2N7000

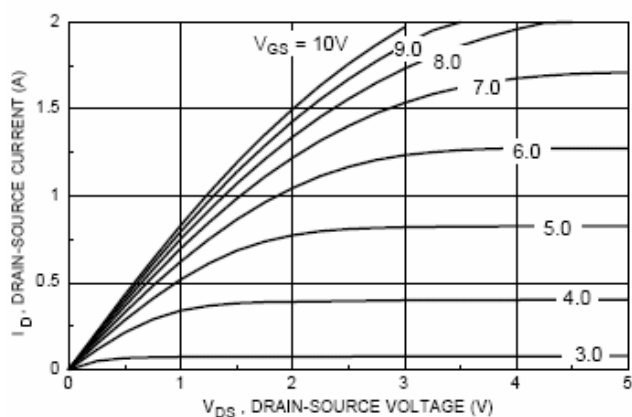


Figure 1. On-Region Characteristics

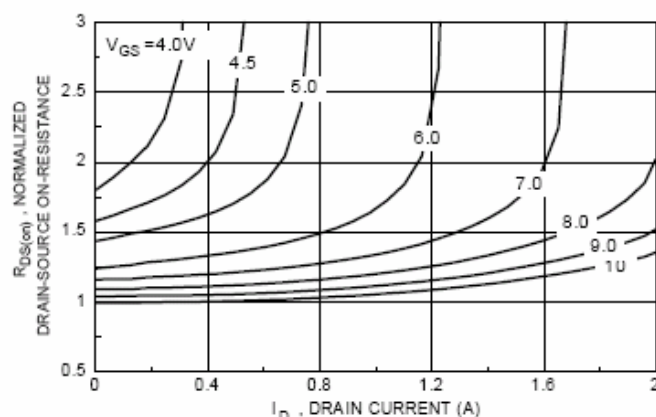


Figure 2. On-Resistance Variation with Gate Voltage and Drain Current

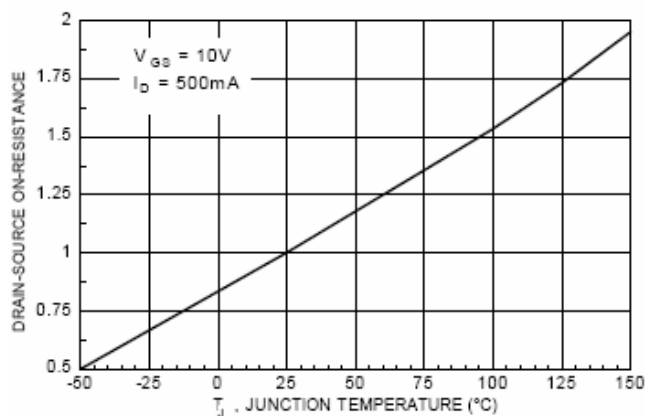


Figure 3. On-Resistance Variation with Temperature

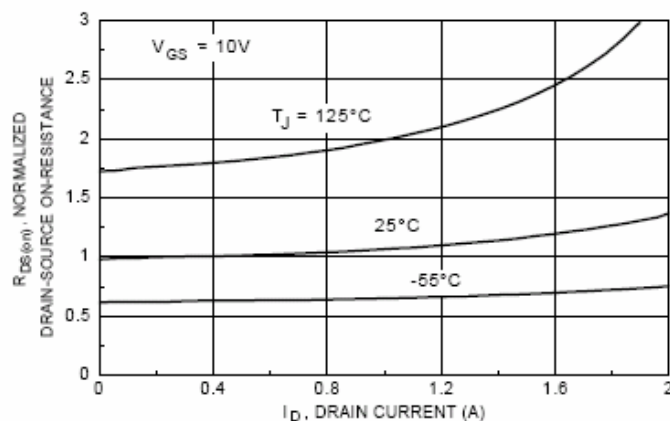


Figure 4. On-Resistance Variation with Drain Current and Temperature

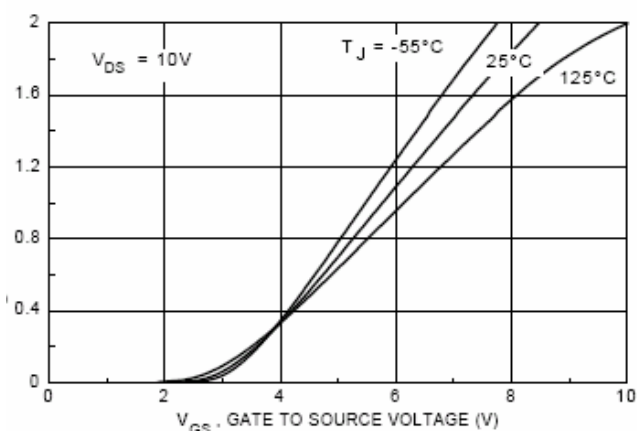


Figure 5. Transfer Characteristics

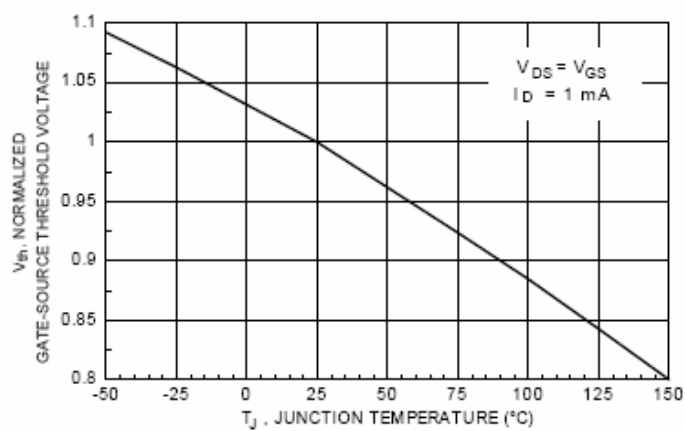


Figure 6. Gate Threshold Variation with Temperature

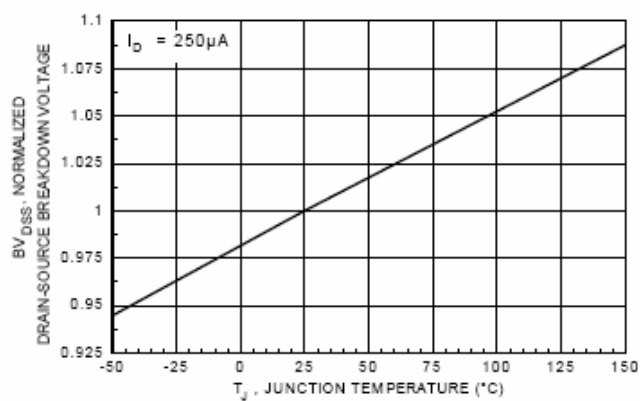


Figure 7. Breakdown Voltage Variation with Temperature

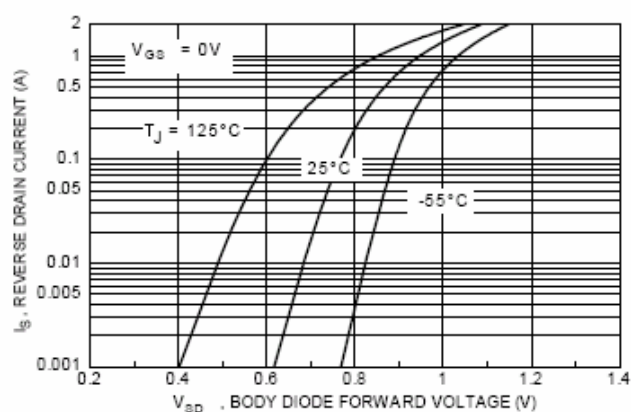


Figure 8. Body Diode Forward Voltage Variation with Temperature

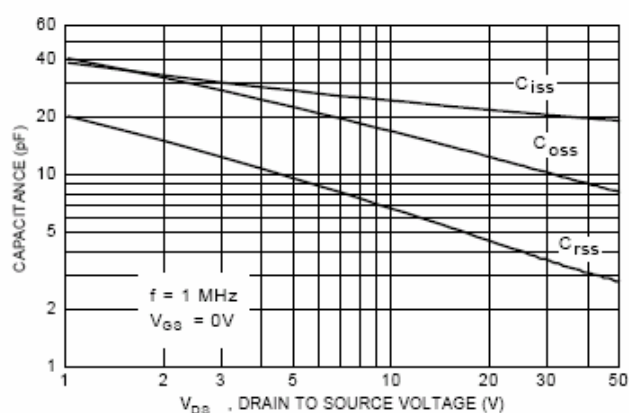


Figure 9. Capacitance Characteristics

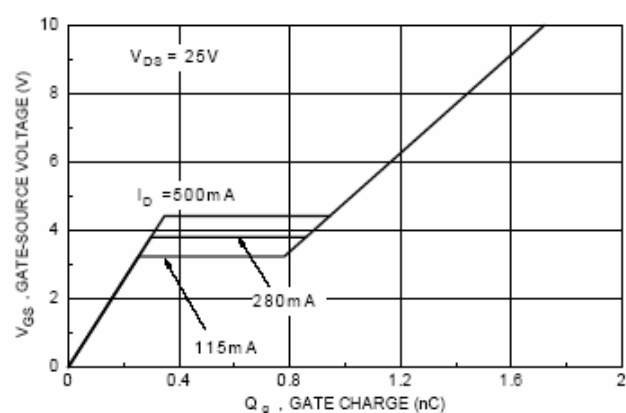


Figure 10. Gate Charge Characteristics