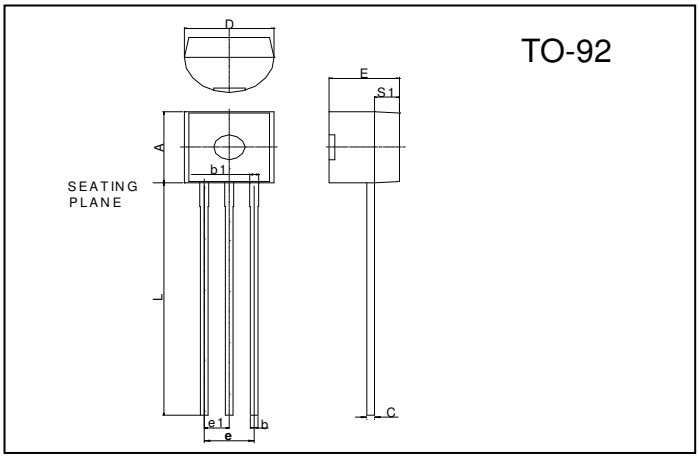
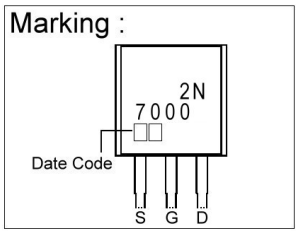
G2N7000 N-CHANNEL ENHANCEMENT MODE MOSFET

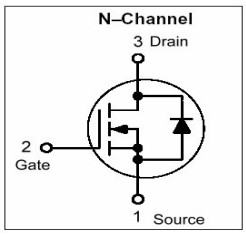
Description

The G2N7000 is designed for high voltage, high speed applications such as switching regulators, converters, solenoid and relay drivers.

Package Dimensions







REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.45	4.7	D	4.44	4.7
S_1	1.02	-	E	3.30	3.81
b	0.36	0.51	L	12.70	-
b_1	0.36	0.76	e1	1.150	1.390
C	0.36	0.51	e	2.42	2.66

Absolute Maximum Ratings at Ta = 25℃

Parameter		Symbol	Ratings	Unit
Operating Junction and Storage Temperature Range		T_j, Tstg	-55 ~ +150	℃
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage -Continuous		V_{GS}	±20	V
-Non-repetitive (tp≦50us)		V_{GSM}	±40	V
Drain Current -Continuous - Pulsed		I_D I_{DM}	200 500	mA
Power Dissipation	Ta=25℃	P_D	0.35	W
	Derate above 25℃		2.8	mW/℃
Thermal Resistance ,Junction-to-Ambient		$R_{\theta JA}$	357	℃/W
Maximum Lead Temperature for Soldering Purposes,1/16" from case for 10 seconds		T_L	300	℃

Electrical Characteristics (Tc= 25℃ unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	V_{GS}=0, I_D=250uA
Gate Threshold Voltage	$V_{GS(th)}$	0.8	-	3.0	V	V_{DS}= V_{GS}, I_D=1.0mA
Gate Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	uA	V_{DS}=60V, V_{GS}=0
On-State Drain Current	$I_{D(ON)}$	75	-	-	mA	V_{GS} =4.5V ,V_{DS}=10V
Static Drain-Source on-State Resistance	$R_{DS(ON)}$	-	-	5.0	Ω	V_{GS}=10V, I_D=500mA
		-	-	6.0		V_{GS}=4.5V, I_D=75mA
Drain-Source on-Voltage	$V_{DS(ON)}$	-	-	2.5	V	V_{GS}=10V, I_D=500mA
		-	-	0.45		V_{GS}=4.5V, I_D=75mA
Forward Transconductance	G_{FS}	100	-	-	mS	V_{DS}=10 V, I_D=200mA
Input Capacitance	C_{iss}	-	-	60	pF	V_{DS}=25V, V_{GS}=0V, f=1MHz
Output Capacitance	C_{oss}	-	-	25		
Reverse Transfer Capacitance	C_{rss}	-	-	5		

Switching Characteristics (Note 1)

Turn-on Delay Time	ton	-	-	10	ns	V_{DD}=15V, I_D=500mA R_G=25Ω, R_L=30Ω, V_{gen}=10V
Turn-off Delay Time	toff	-	-	10		

Note 1. Pulse Test: Pulse Width≦300us, Duty cycle≦2%.

Characteristics Curve

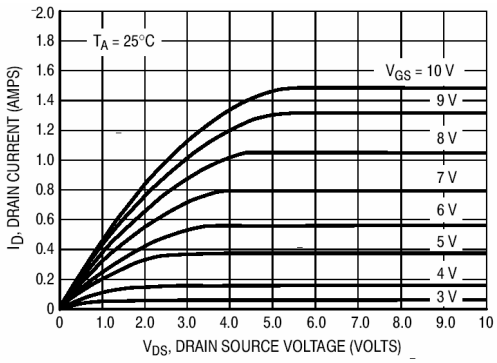


Figure 1. Ohmic Region

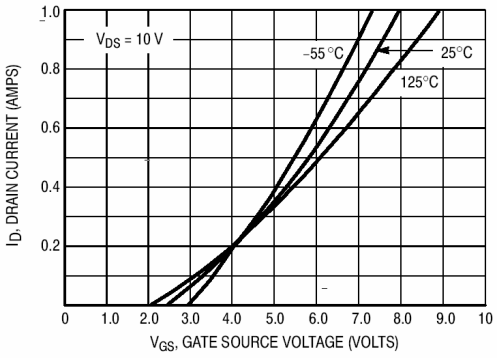


Figure 2. Transfer Characteristics

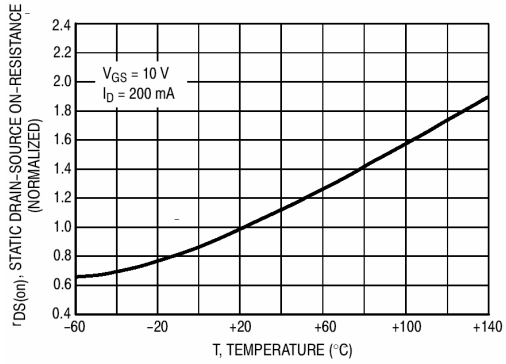


Figure 3. Temperature versus Static Drain−Source On−Resistance

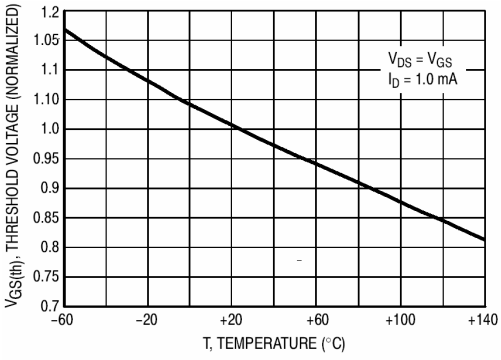


Figure 4. Temperature versus Gate Threshold Voltage

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