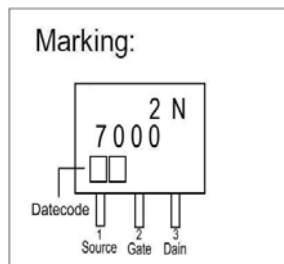
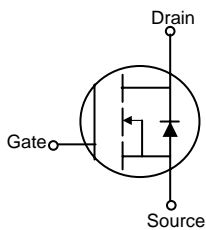
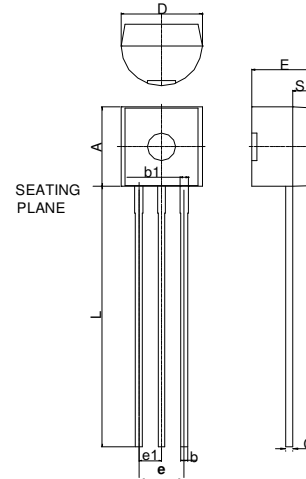


RoHS Compliant Product

Description

The 2N7000 is designed for high voltage, high speed applications such as switching regulators, converters, solenoid and relay drives.

TO-92



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.45	4.7	D	4.44	4.7
S1	1.02	-	E	3.30	3.81
b	0.36	0.51	L	12.70	-
b1	0.36	0.76	e1	1.150	1.390
C	0.36	0.51	e	2.42	2.66

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	-Continuous	± 20
		-Non-Repetitive ($t_p \leq 50\mu s$)	± 40
Drain Current	I_D	-Continuous	200
		-Pulsed	500
Power Dissipation	P_D	- $T_A = 25^\circ C$	0.35
		- Derate Above $25^\circ C$	2.8
Thermal Resistance, Junction-To-Ambient	$R_{\theta JA}$	357	$^\circ C/W$
Operating Junction and Storage Temperature Range	T_j, T_{stg}	-55~+150	$^\circ C$
Max. Lead Temperature For Soldering Purposes, 1/16" From Case For 10 Seconds	T_L	300	$^\circ C$

Electrical Characteristics(T_j=25°C Unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	BV _{DSS}	60	-	-	V	V _{GS} =0V, 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}	-	-	±10	nA	V _{GS} =±15V, V _{DS} =0
Zero Gate Voltage Drain Current	I _{DSS}	-	-	1	uA	V _{DS} =48V, V _{GS} =0
On-State Drain Current	I _{D(ON)}	75	-	-	mA	V _{DS} =10V, V _{GS} =4.5V
Static Drain-Source On-Resistance	R _{DS(ON)}	-	-	5	Ω	V _{GS} =10V, I _D =500mA
		-	-	6		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
Input Capacitance	C _{iss}	-	-	60	pF	V _{GS} =0V V _{DS} =25V f=1.0MHz
Output Capacitance	C _{oss}	-	-	25		
Reverse Transfer Capacitance	C _{rss}	-	-	5		
Forward Transconductance	G _{fs}	100	-	-	mS	V _{DS} =10V, I _D =200mA

Switching Characteristics¹

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Turn-on Delay Time	T _{ON}	-	-	10	nS	V _{DD} =15V, I _D =500mA R _G =25 Ω R _L =30 Ω V _{GEN} =10V
Turn-off Delay Time	T _{OFF}	-	-	10		

Notes: 1. Pulse width ≤300us, duty cycle ≤2%.

Characteristics Curve

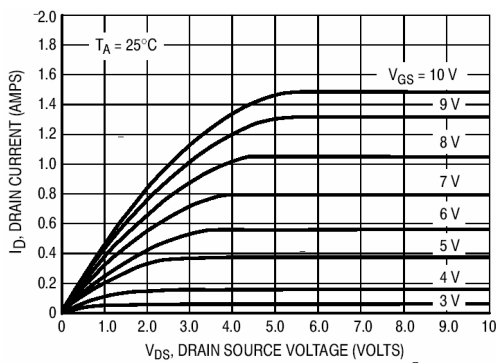


Figure 1. Ohmic Region

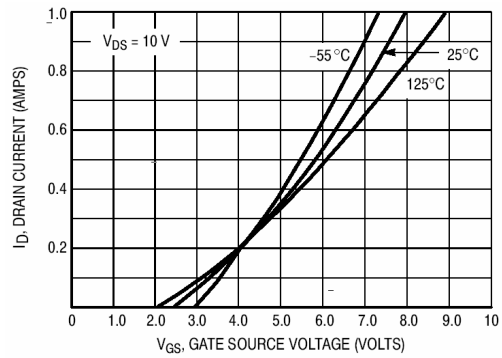


Figure 2. Transfer Characteristics

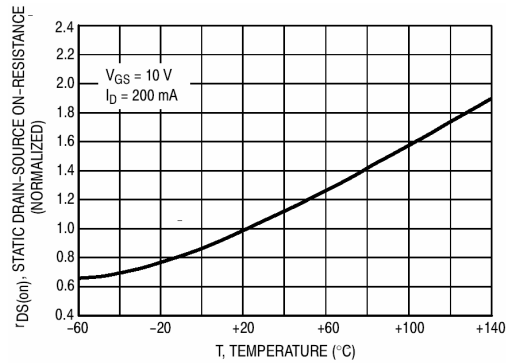


Figure 3. Temperature versus Static Drain-Source On-Resistance

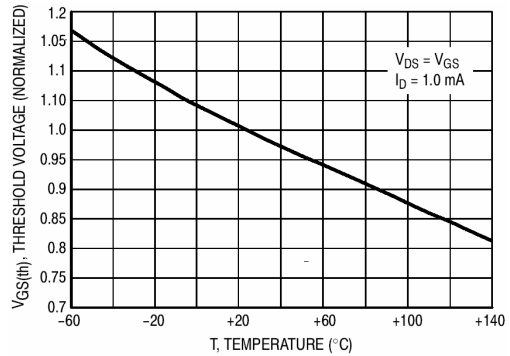


Figure 4. Temperature versus Gate Threshold Voltage