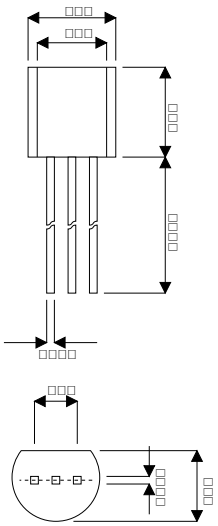
2N7000

MECHANICAL DATA
Dimensions in mm (inches)



TO92 PACKAGE

PIN 1 – Drain PIN 2 – Gate PIN 3 – Drain

N–CHANNEL ENHANCEMENT MODE MOS TRANSISTOR

FEATURES

- $V_{(BR)DSS}$ = 60V
- $RDS_{(ON)}$ = 5Ω
- I_D = 1A

ABSOLUTE MAXIMUM RATINGS (T_{CASE} = 25°C unless otherwise stated)

V_{DS}	Drain – Source Voltage		60V
V_{GS}	Gate – Source Voltage		±40V
I_D	Drain Current		200mA
I_{DM}	Pulsed Drain Current		500mA
P_D	Power Dissipation	@ T_{CASE} = 25°C	400mW
	Derate above 25°C		3.2mW/°C
T_j, T_{stg}	Operating and Storage Temperature Range		–55 to 150°C
T_L	Maximum Lead Temperature for Soldering Purposes, 1/16 from case for 10 seconds		300°C

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SEME LAB

2N7000

ELECTRICAL CHARACTERISTICS (T_{CASE} = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
	STATIC CHARACTERISTICS						
$V_{(BR)DSS}$	Gate – Source Breakdown Voltage	V_{GS} = 0V	I_D = 10μA	60			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}	I_D = 1mA	0.8		3.0	
I_{GSS}	Gate – Body Leakage Current Forward	V_{GSF} = 15V	V_{DS} = 0V			-10	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 48V	V_{GS} = 0V			1	μA
			T_J = 125°C			1	mA
$I_{D(on)}$*	On–State Drain Current	V_{GS} = 4.5	V_{DS} = 10V	75			mA
$R_{DS(on)}$*	Drain – Source On Resistance	V_{GS} = 10V				5	Ω
		I_D = 0.5A	T_{CASE} = 125°C			9	
$V_{DS(on)}$*	Drain – Source On Voltage	V_{GS} = 10V	I_D = 0.5A			2.5	V
		V_{GS} = 4.5V	I_D = 75mA			0.4	
g_{FS}*	Forward Transconductance	V_{GS} = 10V	I_D = 200mA	100			μmhos
	DYNAMIC CHARACTERISTICS						
C_{iss}	Input Capacitance	V_{DS} = 25V				60	pF
C_{oss}	Output Capacitance	V_{GS} = 0V				25	
C_{rss}	Reverse Transfer Capacitance	f = 1MHz				5	
	SWITCHING CHARACTERISTICS						
t_{ON}	Turn–On Time	V_{DD} = 15V	R_L = 25Ω			10	ns
t_{OFF}	Turn–Off Time	R_G = 25Ω	I_D = 600mA			10	

* Pulse Test: PW = 300 μs , δ ≤ 2%

	THERMAL CHARACTERISTIC	Min.	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient			312.5	°C/W