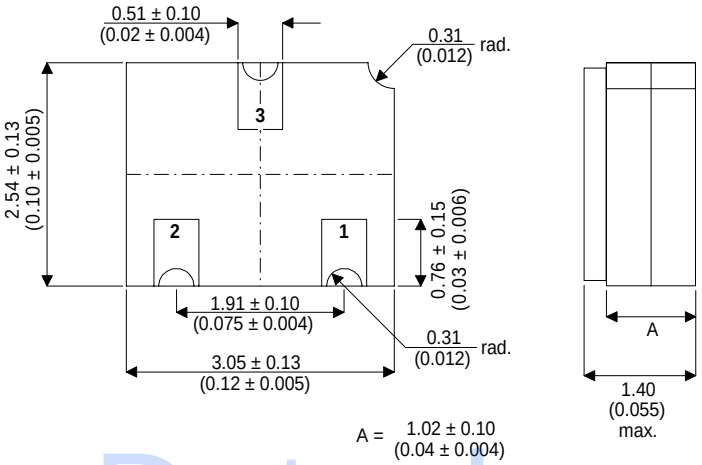
2N7000CSM

MECHANICAL DATA
Dimensions in mm (inches)



SOT23 CERAMIC
(LCC1 PACKAGE)

Underside View

PAD 1 – Gate PAD 2 – Source PAD 3 – Drain

N–CHANNEL ENHANCEMENT MODE MOS TRANSISTOR

FEATURES

- **$V_{(BR)DSS}$ = 60V**
- **$RDS_{(ON)}$ = 5Ω**
- **I_D = 200mA**
- **Hermetic Ceramic Surface Mount package**
- **Screening Options Available**

Datasheet.Directory

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	@ T_{CASE} = 25°C	200mA
I_{DM}	Pulsed Drain Current *		500mA
P_D	Power Dissipation	@ T_{CASE} = 25°C	300mW
T_j	Operating Junction Temperature Range		–55 to 150°C
T_{stg}	Storage Temperature Range		–55 to 150°C

* Pulse width limited by maximum junction temperature.

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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	70		V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}	I_D = 0.25mA	0.8		3.0	V
I_{GSS}	Gate – Body Leakage Current	V_{GS} = ±20V	V_{DS} = 0V			-10	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 60V	V_{GS} = 0V			1	μA
			T_{CASE} = 125°C			1	mA
$I_{D(on)}$*	On–State Drain Current	V_{DS}≥2$V_{DS(ON)}$	V_{GS} = 4.5V	75			mA
$R_{DS(on)}$*	Drain – Source On Resistance	V_{GS} = 10V				5	Ω
		I_D = 0.5A	T_{CASE} = 125°C			9	Ω
$V_{DS(on)}$*	Drain – Source On Voltage	V_{GS} = 4.5V	I_D = 75mA			0.4	V
		V_{GS} = 10V	I_D = 0.5A			2.5	V
g_{FS}*	Forward Transconductance	V_{GS} = 10V	I_D = 0.5A	100			ms
	DYNAMIC CHARACTERISTICS						
C_{iss}	Input Capacitance	V_{DS} = 25V				60	pF
C_{oss}	Output Capacitance	V_{GS} = 0V				25	pF
C_{rss}	Reverse Transfer Capacitance	f = 1MHz				5	pF
	SWITCHING CHARACTERISTICS						
t_{ON}	Turn–On Time	V_{DD} = 30V	V_{GEN} = 10V			10	ns
		R_L = 150Ω	R_G = 25Ω				
t_{OFF}	Turn–Off Time	I_D = 0.2A				10	ns

* Pulse Test: PW = 80 μs , δ ≤ 1%

	Parameter	Min.	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient			416	°C/W