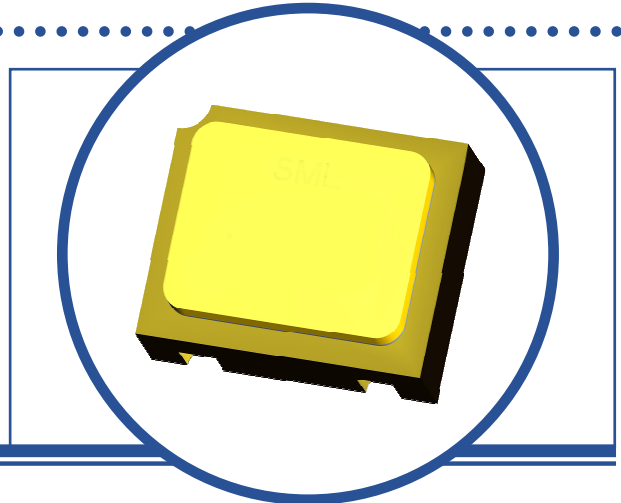


N-CHANNEL ENHANCEMENT MODE MOSFET

2N7002CSM

- $V_{DSS} = 60V$, $I_D = 115mA$, $R_{DS(ON)} = 7.5\Omega$
- Fast Switching
- Low Threshold Voltage
- Integral Source-Drain Body Diode
- Hermetic Ceramic Surface Mount Package (SOT-23 compatible)
- High Reliability Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise stated)

V_{DS}	Drain – Source Voltage		60V
V_{GS}	Gate – Source Voltage		$\pm 40V$
I_D	Continuous Drain Current	$T_C = 25^\circ C$	115mA
I_D	Continuous Drain Current	$T_C = 100^\circ C$	75mA
I_{DM}	Pulsed Drain Current ⁽¹⁾		800mA
P_T	Total Power Dissipation at	$T_A \leq 25^\circ C$	350mW
		De-rate $T_C > 25^\circ C$	2.8mW/ $^\circ C$
T_J	Operating Temperature Range		-55 to +150 $^\circ C$
T_{stg}	Storage Temperature Range		-55 to +150 $^\circ C$

THERMAL PROPERTIES

Symbols	Parameters	Max	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	357	$^\circ C/W$

Notes

- (1) Repetitive Rating: Pulse width limited by maximum junction temperature
 (2) Pulse Width $\leq 300\mu s$, $\delta \leq 2\%$

N-CHANNEL ENHANCEMENT MODE MOSFET 2N7002CSM

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 10\mu\text{A}$	60			V
$V_{GS(th)}$	Gate Threshold Voltage	$I_D = 250\mu\text{A}$ $V_{DS} \geq V_{GS}$	1.0		2.5	V
		$I_D = 1.0\text{mA}$ $T_A = -55^\circ\text{C}$			2.5	
I_{GSS}	Gate-Source Leakage Current	$V_{GS} = \pm 20\text{V}$ $V_{DS} = 0\text{V}$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 60\text{V}$			1.0	μA
		$T_A = 125^\circ\text{C}$			500	
$V_{DS(on)}^{(2)}$	Static Drain-Source On-State Voltage	$V_{GS} = 5\text{V}$ $I_D = 50\text{mA}$			1.5	V
		$V_{GS} = 10\text{V}$ $I_D = 0.5\text{A}$			3.75	
$R_{DS(on)}^{(2)}$	Static Drain-Source On-State Resistance	$V_{GS} = 5\text{V}$ $I_D = 50\text{mA}$			7.5	Ω
		$T_A = 125^\circ\text{C}$			13.5	
		$V_{GS} = 10\text{V}$ $I_D = 0.5\text{A}$			7.5	
		$T_A = 125^\circ\text{C}$			13.5	
$g_{fs}^{(2)}$	Forward Transconductance	$V_{DS} = 10\text{V}$ $I_D = 0.2\text{A}$	80			$\text{m}\Omega$
$V_{SD}^{(2)}$	Body Diode Forward Voltage	$V_{GS} = 0$ $I_S = 0.2\text{A}$	0.7		1.2	V

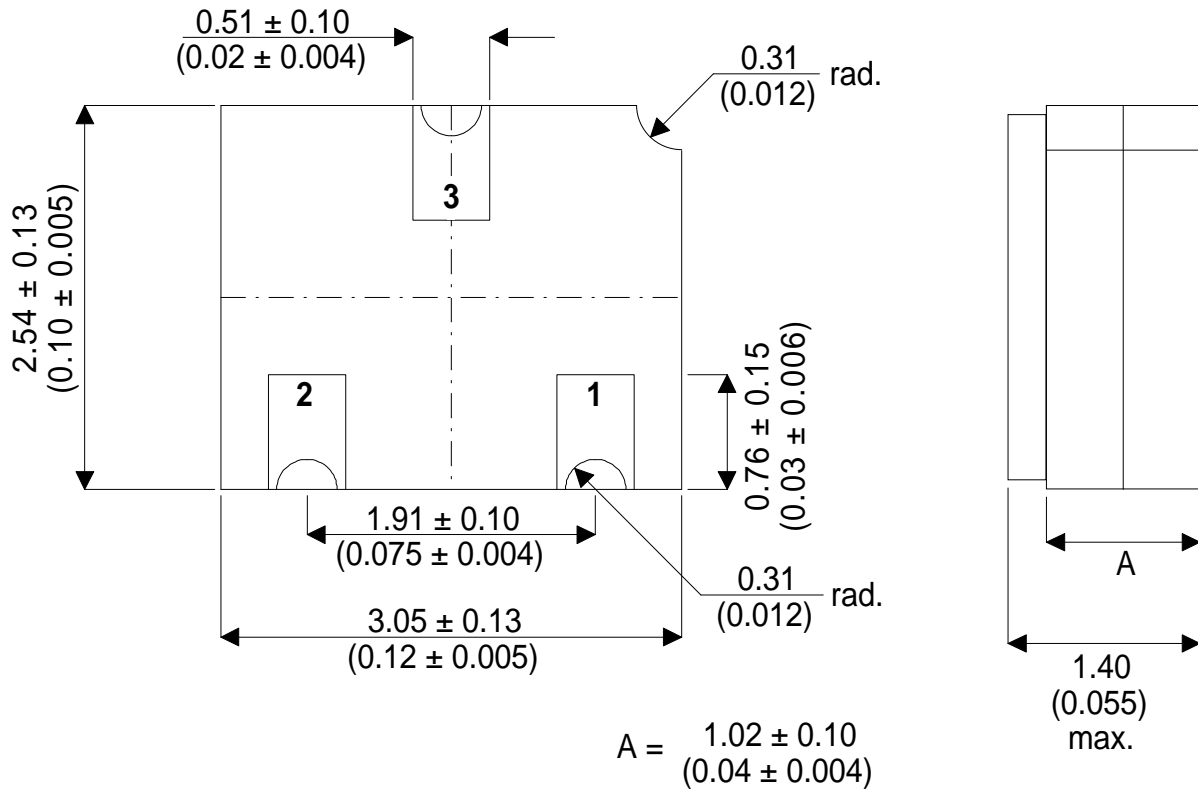
DYNAMIC CHARACTERISTICS

C_{iss}	Input Capacitance	$V_{GS} = 0$			50	pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$			25	
C_{rss}	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$			5	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 30\text{V}$			20	ns
$t_{d(off)}$	Turn-Off Delay Time	$I_D = 0.2\text{A}$ $R_G = 50\Omega$			20	

N-CHANNEL ENHANCEMENT MODE MOSFET 2N7002CSM

MECHANICAL DATA

Dimensions in mm (inches)



LCC1 (SOT-23 Ceramic) Underside View

Pad 1	Pad 2	Pad 3
Gate	Source	Drain