

2N7002DCSM

MECHANICAL DATA

Dimensions in mm (inches)

2.29 ± 0.20 1.65 ± 0.13 1.40 ± 0.15 (0.055 ± 0.006) (0.09 ± 0.008) 4.32 ± 0.13 (0.170 ± 0.005) 0.23 rad. -6 1.27 ± 0.13 $A = 1.27 \pm 0.005$ (0.05 ± 0.005) 6.22 ± 0.13 (0.245 ± 0.005)

DUAL N-CHANNEL ENHANCEMENT MODE MOS TRANSISTOR

FEATURES

- V_{(BR)DSS} = 60V
- $RDS_{(ON)} = 7.5\Omega$
- $I_D = 0.115A$

CERAMIC LCC2 PACKAGE (underside view)

PAD 1 - Drain 1 PAD 4 - Drain 2 PAD 2 - Gate 1 PAD 5 - Source 2 **PAD 3 - Gate 2** PAD 6 - Source 1

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

		PER SIDE TOTAL DEVIC	TAL DEVICE		
V_{DS}	Drain – Source Voltage	60V	60V		
V_{GS}	Gate – Source Voltage	±40V	±40V		
I_D	Drain Current	±0.115A	±0.115A		
I_{DM}	Pulsed Drain Current *	0.8A	0.8A		
P_{D}	Power Dissipation	200mW 400mW	00mW		
	Derate Above 25°C	1.60mW/°C 2.0mW/°C	.0mW/°C		
T_j	Operating Junction Temperature Range	−55 to 150°C	−55 to 150°C		
T_{stg}	Storage Temperature Range	−55 to 150°C	−55 to 150°C		
R $_{\theta JA}$	Thermal Resistance, Junction to Ambient	625°C/W 250°C/W	625°C/W 250°C/W		

^{*} Pulse width limited by maximum junction temperature.

Semelab PIc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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

	Parameter	Test Co	nditions	Min.	Тур.	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	1	2.15	2.5	1 °	
I _{GSS}	Gate – Body Leakage Current	$V_{GS} = \pm 20 VV_{DS} = 0 V$				±100	nA	
I _{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 60V$	$V_{GS} = 0V$			1	μΑ	
			T _{CASE} = 125°C			500		
I _{D(on)*}	On-State Drain Current	V _{DS} ≥2V _{DS(Of}	V _{OS} = 10V	500	1000		mA	
R _{DS(on)*}	Drain – Source On Resistance	$V_{GS} = 5V$,		5	7.5		
		I _D = 50mA	T _{CASE} = 125°C		9	13.5		
		V _{GS} = 10V			2.5	7.5	Ω	
		I _D = 0.5A	T _{CASE} = 125°C		4.4	13.5	1	
V _{DS(on)*}	Drain – Source On Voltage	$V_{GS} = 5V$	I _D = 50mA		0.25	0.375		
		V _{GS} = 10V			1.25	3.75	V	
		I _D = 0.5A	T _{CASE} = 125°C		2.2	6.75	-	
g _{FS*}	Forward Transconductance	$V_{DS} = 10V$	I _D = 0.2A	80	170		ms	
g _{OS*}	Common Source Output Conductance	$V_{DS} = 5V$	I _D = 50mA		500		μs	
	DYNAMIC CHARACTERISTICS	•			ı	I		
C _{iss}	Input Capacitance	V _{DS} = 25V			16	50		
C _{oss}	Output Capacitance	$V_{GS} = 0V$			11	25	pF	
C _{rss}	Reverse Transfer Capacitance	f = 1MHz			2	5	-	
	SWITCHING CHARACTERISTICS	•						
t _{ON}	Turn-On Time		V _{GEN} = 10V		7	20	ne	
t _{OFF}	Turn-Off Time	$R_{L} = 150\Omega$ $I_{D} = 0.2A$	$R_G = 25\Omega$		7	20	ns	

^{*} Pulse Test: PW = 80 μs , $\delta \le 1\%$

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