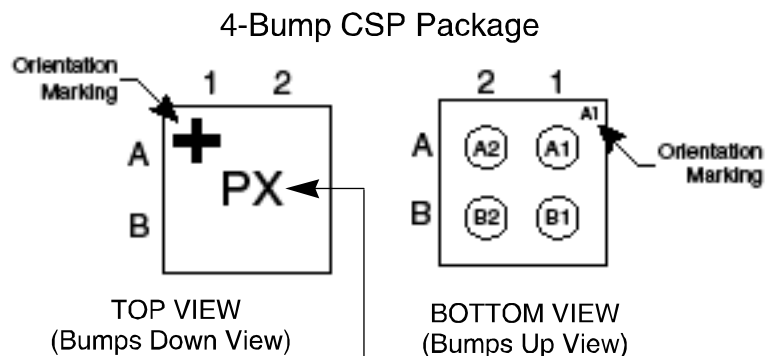
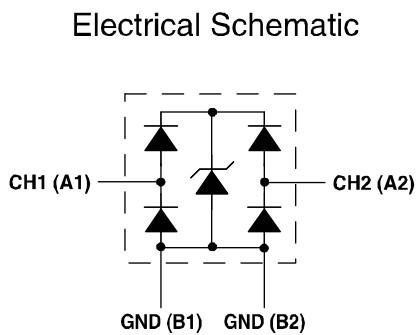




Product Description

The 6100 is a 4-bump very low capacitance ESD protection device in 0.4mm CSP form factor. It is fully compliant with IEC 61000-4-2. The CM6100 is RoHS II compliant.

Electrical Schematic / Pin Description



WHERE X =		
A = ww01, ww02	J = ww19, ww20	S = ww37, ww38
B = ww03, ww04	K = ww21, ww22	T = ww39, ww40
C = ww05, ww06	L = ww23, ww24	U = ww41, ww42
D = ww06, ww08	M = ww25, ww26	V = ww43, ww44
E = ww08, ww10	N = ww27, ww28	W = ww45, ww46
F = ww11, ww12	O = ww29, ww30	X = ww47, ww48
G = ww13, ww14	P = ww31, ww32	Y = ww49, ww50
H = ww15, ww16	Q = ww33, ww34	Z = ww51, ww52
I = ww17, ww18	R = ww35, ww36	

Notes:

1) These drawings are not to scale.

Pin Information

PIN DESCRIPTIONS				
PIN	DESCRIPTION		PIN	DESCRIPTION
A1	ESD Channel 1		B1	Device Ground
A2	ESD Channel 2		B2	Device Ground

Ordering Information

PART NUMBERING INFORMATION				
Bumps	Package	Variation	Ordering Part Number ¹	Part Marking
4	CSP	CSP-SAC105	CM6100	P

Note 1: Parts are shipped in Tape & Reel form unless otherwise specified.

Electrical Specifications and Conditions

PARAMETERS AND OPERATING CONDITIONS		
PARAMETER	RATING	UNITS
Storage Temperature Range	-55 to +150	°C
Operating Temperature Range	-40 to +85	°C

ELECTRICAL OPERATING CHARACTERISTICS (SEE NOTE 1)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
V_{IN}	Input Operating Supply Voltage			3.0	5.5	V
V_B	Breakdown Voltage (Positive)	$I_F = 8mA$	6			V
I_{LEAK}	Channel Leakage Current	$V_{IN} = 3V$		± 0.1	± 0.30	μA
C_{IN}	Channel Input Capacitance	At 1 MHz, $V_{IN}=0V$			1.5	pF
ΔC_{IN}	Channel Input Capacitance Matching	At 1 MHz, $V_{IN}=0V$		0.02		pF
V_{ESD}	ESD Protection Peak Discharge Voltage at any channel input a) Contact discharge per IEC 61000-4-2 standard b) Air discharge per IEC 61000-4-2 standard	Notes 2	± 8 ± 15			kV kV
V_{CL}	Channel Clamp Voltage Positive Transients Negative Transients	$I_{PP} = 1A, t_p = 8/20\mu s$		+9.8 -1.5		V V
R_{DYN}	Dynamic Resistance Positive Transients Negative Transients	$I_{PP} = 1A, t_p = 8/20\mu s$ Any I/O pin to Ground		0.7 0.5		Ω Ω

Note 1: All parameters specified at $T_A = 25^\circ C$ unless otherwise noted.

Note 2: Standard IEC 61000-4-2 with $C_{Discharge} = 150pF, R_{Discharge} = 330\Omega$.

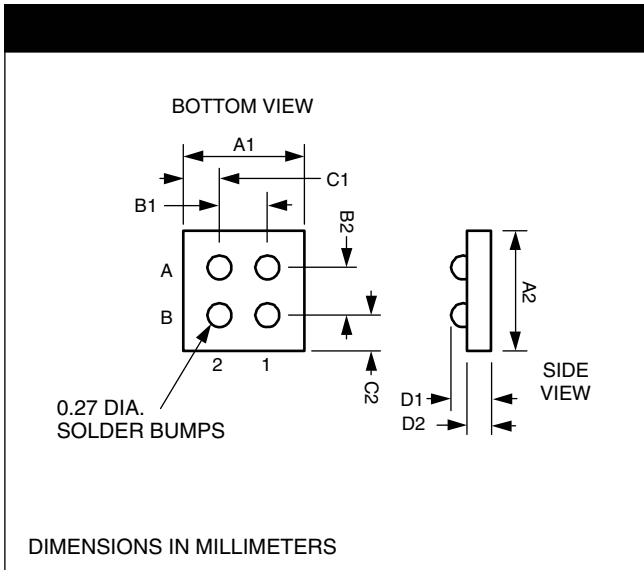
Mechanical Specification

CSP-4 Mechanical Specifications

The CM6100 is supplied in a 4 bump Chip Scale Package (CSP).

Controlling dimension: millimeters

PACKAGE DIMENSIONS						
Package	Custom CSP					
Bumps	4					
Dim	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A1	0.755	0.800	0.845	0.0297	0.0315	0.0333
A2	0.755	0.800	0.845	0.0297	0.0315	0.0333
B1	0.395	0.400	0.405	0.0156	0.0157	0.0159
B2	0.395	0.400	0.405	0.0156	0.0157	0.0159
C1	0.150	0.200	0.250	0.0059	0.0079	0.0098
C2	0.150	0.200	0.250	0.0059	0.0079	0.0098
D1	0.570	0.600	0.630	0.0224	0.0236	0.0248
D2	0.394	0.406	0.418	0.0155	0.0160	0.0165



**Package Dimensions for
CM6100 Chip Scale Package**

Vertical Structure Specification*

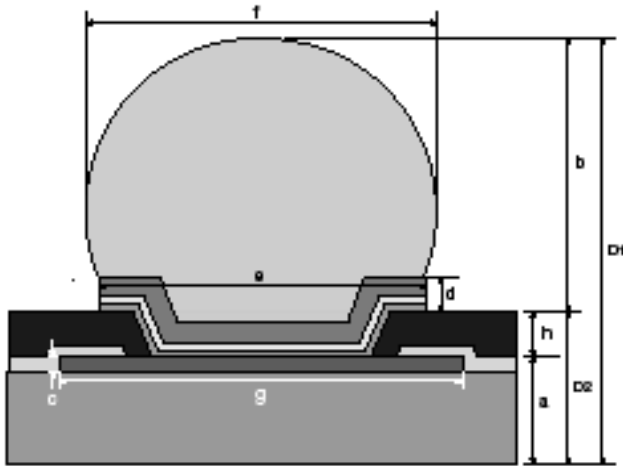


Figure 1. Sectional View

* Daisy Chain CM6000

Vertical Structure Dimensions (nominal)

REF.	Parameter	Material	Dimension
a	Die Thickness	Silicon	396 μ m
h	Repassivation	Polyimide	10 μ m
d	UBM-(Ti/Cu)	Plated Cu	5.0 μ m
		Sputtered Cu	0.4 μ m
		Sputtered Ti	0.1 μ m
e	UBM Wetting Area Diameter		240 μ m
b	Bump Standoff		194 μ m
f	Solder Bump Diameter after Bump Reflow		270 μ m
c	Metal Pad Height	AlSiCu	1.5 μ m
g	Metal Pad Diameter		310 μ m
D2			0.406mm
D1	Finished Thickness		0.600mm

Mechanical Specification (cont'd)

CSP Tape and Reel Specifications

PART NUMBER	CHIP SIZE (mm)	POCKET SIZE (mm) $B_0 \times A_0 \times K_0$	TAPE WIDTH W	REEL DIA.	QTY PER REEL	P_0	P_1
CM6100	0.8 X 0.8 X 0.60	0.89 x 0.91 x 0.67	8mm	178mm (7")	5000	4mm	4mm

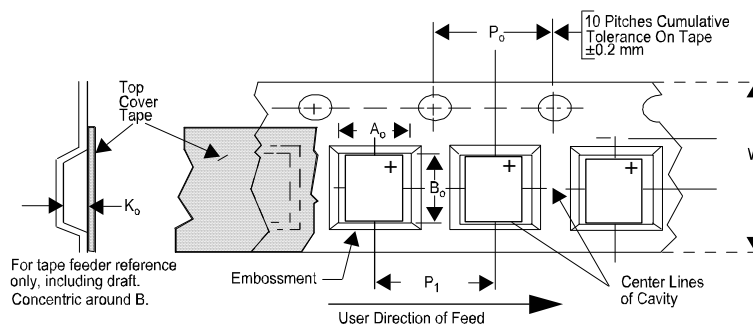


Figure 2. Tape and Reel Mechanical Data

ON Semiconductor and are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855
Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81-3-5773-3850

ON Semiconductor Website: www.onsemi.com
Order Literature: <http://www.onsemi.com/orderlit>
For additional information, please contact your local Sales Representative