



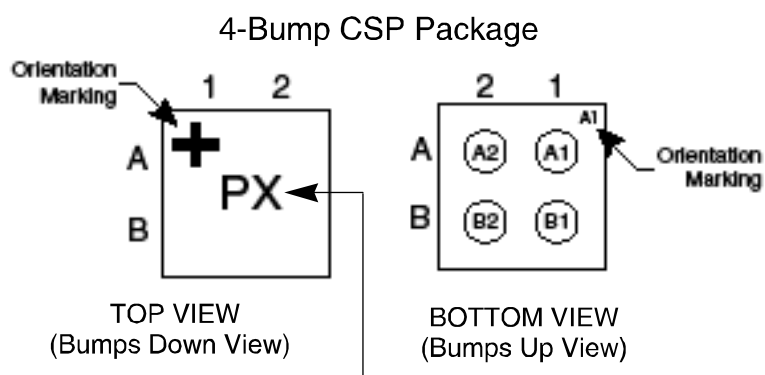
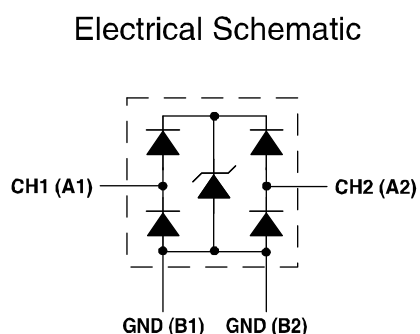
0.4mm Pitch Daisy Chain

CM6100

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)	$I_F = 8\text{mA}$	6			V
I_{LEAK}	Channel Leakage Current	$V_{IN} = 3\text{V}$		± 0.1	± 0.30	μA
C_{IN}	Channel Input Capacitance	At 1 MHz, $V_{IN}=0\text{V}$			1.5	pF
ΔC_{IN}	Channel Input Capacitance Matching	At 1 MHz, $V_{IN}=0\text{V}$		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	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$		+9.8 -1.5		V V
R_{DYN}	Dynamic Resistance Positive Transients Negative Transients	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$ Any I/O pin to Ground		0.7 0.5		Ω Ω

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

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

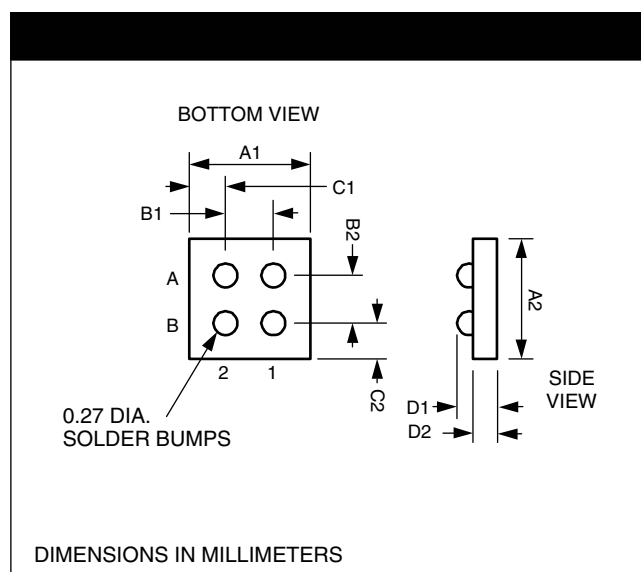
Mechanical Specification

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**

Technical drawing of a spherical roller bearing cross-section. The diagram shows a spherical roller (shaded gray) seated within a bearing housing. The roller has a diameter labeled d . The bearing housing has an inner diameter labeled D_{i2} and an outer diameter labeled D_{e2} . The roller is supported by a shaft with diameter d_1 . The housing has a shoulder height a and a shoulder radius r . The roller is positioned such that its center is at a distance b from the housing shoulder. The roller is held in place by a lock ring (lock washer) with thickness c and a lock ring nut with thickness h . The roller is also held in place by a lock ring (lock washer) with thickness c and a lock ring nut with thickness h . The roller is also held in place by a lock ring (lock washer) with thickness c and a lock ring nut with thickness h .

* Daisy Chain CM6000

Vertical Structure Dimensions (nominal)			
REF.	Parameter	Material	Dimension
a	Die Thickness	Silicon	396μm
h	Repassivation	Polyimide	10μm
d	UBM-(Ti/Cu)	Plated Cu	5.0μm
		Sputtered Cu	0.4μm
		Sputtered Ti	0.1μm
e	UBM Wetting Area Diameter		240μm
b	Bump Standoff		194μm
f	Solder Bump Diameter after Bump Reflow		270μm
c	Metal Pad Height	AlSiCu	1.5μm
g	Metal Pad Diameter		310μm
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

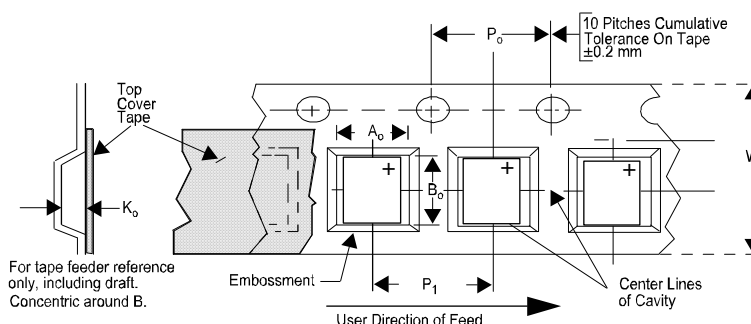



Figure 2. Tape and Reel Mechanical Data

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