CM6100

2 Channel Very Low Capacitance ESD Protection Device in CSP

ON Semiconductor®

**WLCSP4
CASE 567CB**

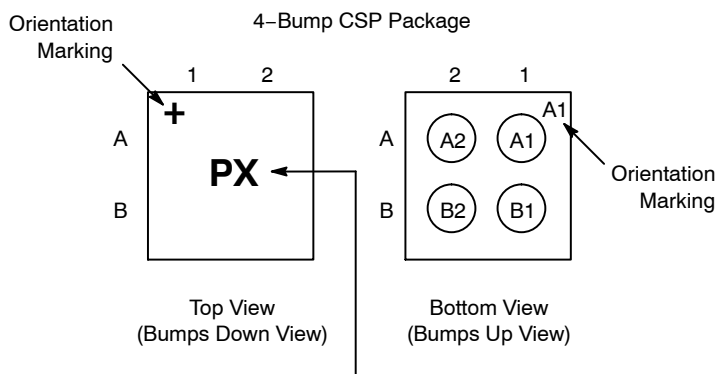## Product Description

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

Table 1. PIN DESCRIPTIONS

4−bump CSP Package	
Pin	**Description**
A1	ESD Channel 1
A2	ESD Channel 2
B1 and B2	Device Ground

ELECTRICAL SCHEMATIC

CH1 (A1) — CH2 (A2)

GND (B1)   GND (B2)

PACKAGE / PINOUT DIAGRAMS

4−Bump CSP Package

Orientation Marking

Top View
(Bumps Down View)

Bottom View
(Bumps Up View)

MARKING DIAGRAM

PX

P = CM6100
X = Single Digit Date Code

ORDERING INFORMATION

Device	Package	Shipping†
CM6100	WLCSP4 (Pb−Free)	5000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

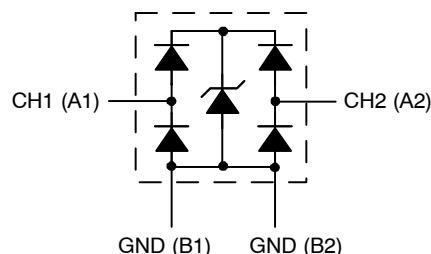| WHERE X =		
A = ww01, ww02	J = ww19, ww20	S = ww37, ww38
B = ww03, ww04	K = ww21, ww22	T = ww39, ww40
C = ww05, ww06	L = ww23, ww24	U = ww41, ww42
D = ww06, ww08	M = ww25, ww26	V = ww43, ww44
E = ww08, ww10	N = ww27, ww28	W = ww45, ww46
F = ww11, ww12	O = ww29, ww30	X = ww47, ww48
G = ww13, ww14	P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

ELECTRICAL SPECIFICATIONS AND CONDITIONS

Table 2. PARAMETERS AND OPERATING CONDITIONS

Parameter	Rating	Units
Storage Temperature Range	−55 to +150	°C
Operating Temperature Range	−40 to +85	°C

**Table 3. ELECTRICAL OPERATING CHARACTERISTICS** (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 mA	6			V
I_{LEAK}	Channel Leakage Current	V_{IN} = 3 V		±0.1	±0.30	μA
C_{IN}	Channel Input Capacitance	At 1 MHz, V_{IN} = 0 V			1.5	pF
ΔC_{IN}	Channel Input Capacitance Matching	At 1 MHz, V_{IN} = 0 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	(Note 2)	±8 ±15			kV
V_{CL}	Channel Clamp Voltage Positive Transients Negative Transients	I_{PP} = 1 A, t_P = 8/20 μs		+9.8 −1.5		V
R_{DYN}	Dynamic Resistance Positive Transients Negative Transients	I_{PP} = 1 A, t_P = 8/20 μs Any I/O pin to Ground		0.7 0.5		Ω

1. All parameters specified at T_A = 25°C unless otherwise noted.
2. Standard IEC 61000−4−2 with $C_{Discharge}$ = 150 pF, $R_{Discharge}$ = 330 Ω.

PACKAGE DIMENSIONS

WLCSP4, 0.8x0.8
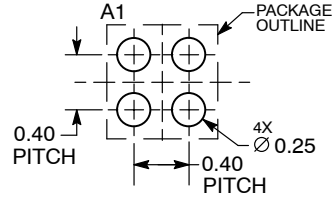CASE 567CB–01
ISSUE O
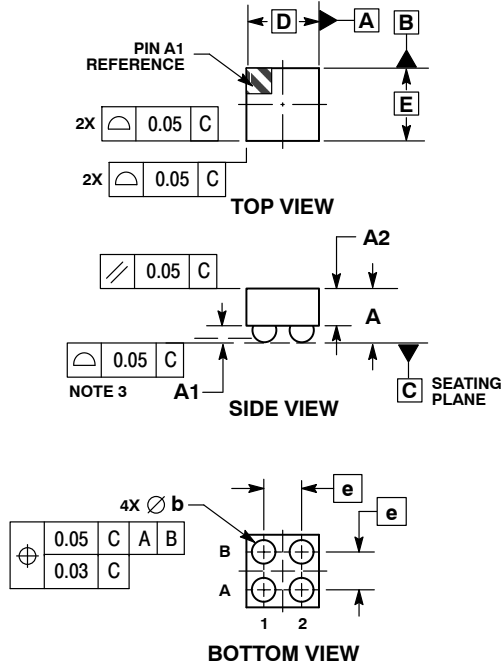
NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. COPLANARITY APPLIES TO SPHERICAL CROWNS OF SOLDER BALLS.

DIM	MILLIMETERS	
	MIN	MAX
A	0.57	0.63
A1	0.17	0.24
A2	0.41 REF	
b	0.24	0.29
D	0.80 BSC	
E	0.80 BSC	
e	0.40 BSC	

TOP VIEW

SIDE VIEW

BOTTOM VIEW

RECOMMENDED SOLDERING FOOTPRINT*

DIMENSIONS: MILLIMETERS

*For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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VBUS054DD-HF4-GS08 VBUS54DD-HS4-G4-08 EMIF03-SIM02F2 EMIF07-LCD02F3 SCM1293A-04SO 82356240030 TQP200002
VESD12A1A-HD1-GS08 CPDUR5V0R-HF ESD3V3D7-TP ESDA6V1LY ESDAVLC12-1BV2 EMIF06-USD05F3 EMIF06-USD04F3
EMIF03-SIM03F3 GMF05LC-HSF-GS08 CM1263-06DE CPDQ5V0USP-HF CPDU12V0U-HF CPDU5V0USP-HF RCLAMP3324P.TNT
RCLAMP7534P.TNT TPD1E0B04DPLT TPD1E10B09QDPYRQ1 MMBZ27VCL,215 MMBZ33VCL,215 IP4786CZ32S,118
DF2S5.6ASL,L3F DF2S5.6FS(TPL3) DF2S6.2ASL,L3F DF2S6.2CT,L3F DF2S6.8FS,L3M DF2S8.2FS,L3M DF5A5.6JE,LM
EMI5206MUTAG EMI6316FCTBG EMI8141MUTAG EMIF03-SIM05F3 MSMP13A-M3/89A ESD5V0D5-TP ESD5Z6.0T5G
ESD7321MUT5G