

ESD6100

2 Channel Very Low Capacitance ESD Protection Device in CSP

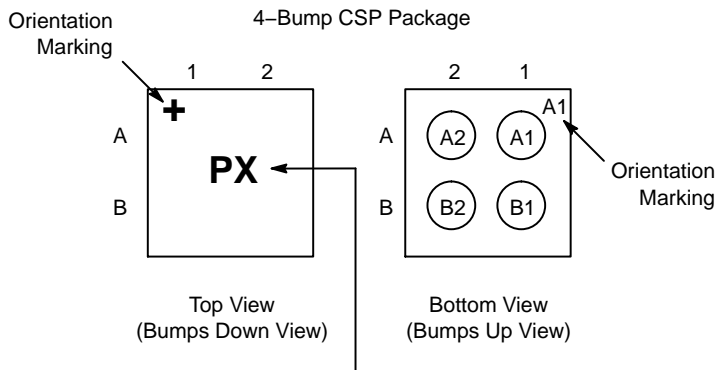
Product Description

The ESD6100 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 ESD6100 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

PACKAGE / PINOUT DIAGRAMS



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	



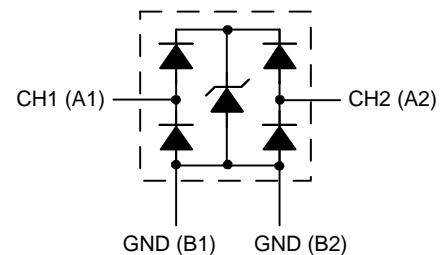
ON Semiconductor®

<http://onsemi.com>



WLCSP4
CASE 567CB

ELECTRICAL SCHEMATIC



MARKING DIAGRAM



P = ESD6100
X = Single Digit Date Code

ORDERING INFORMATION

Device	Package	Shipping†
ESD6100	WLCSP4 (Pb-Free)	10000/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.

ESD6100

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

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

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 = 1 mA	6			V
I _{LEAK}	Channel Leakage Current	V _{IN} = 3 V (Note 2)		1.0	100	nA
C _{IN}	Channel Input Capacitance	At 1 MHz, V _{IN} = 0 V (Note 2)			1.5	pF
ΔC _{IN}	Channel Input Capacitance Matching	At 1 MHz, V _{IN} = 0 V (Note 2)		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 and 3)				kV
			±8			
			±15			
V _{CL}	Channel Clamp Voltage Positive Transients Negative Transients	I _{PP} = 1 A, t _P = 8/20 μs (Note 2)		+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 (Note 2)		0.7 0.5		Ω

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. All parameters specified at T_A = 25°C unless otherwise noted.
2. These parameters are guaranteed by design and characterization.
3. Standard IEC 61000-4-2 with C_{Discharge} = 150 pF, R_{Discharge} = 330 Ω.

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

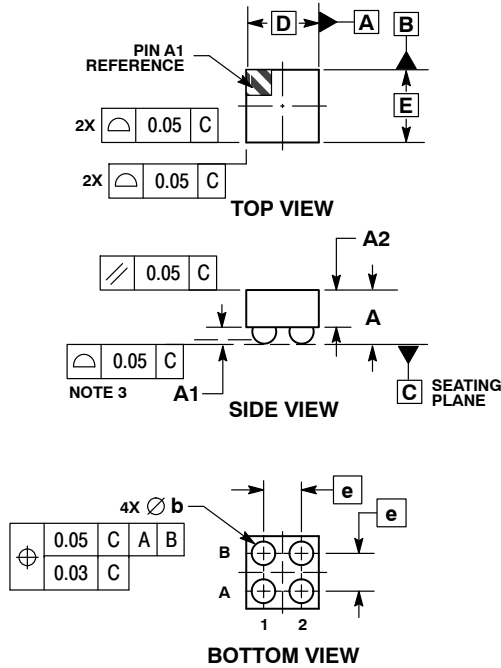
ON Semiconductor®



SCALE 4:1

WLCSP4, 0.8x0.8
CASE 567CB-01
ISSUE 0

DATE 26 JUL 2010

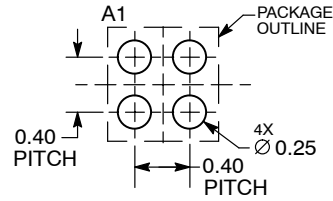


NOTES:

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

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.

DOCUMENT NUMBER:	98AON50305E	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	WLCSP4, 0.8X0.8	PAGE 1 OF 1

ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor 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. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

onsemi, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** 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. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** 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. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** 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 **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales