

# CM1242-33CP

## 1-Channel ESD Protection Device in 0201 CSP

### Description

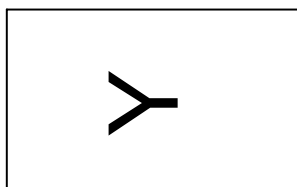
The CM1242-33CP is a 2-bump ESD protection device in 0201 CSP form factor. It is fully compliant with IEC 61000-4-2. The CM1242-33CP is also RoHS II compliant and has a pure tin finish.

**Table 1. PIN DESCRIPTIONS**

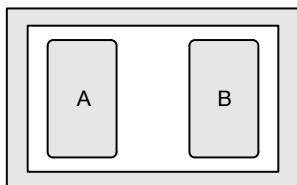
Pin	Description
A	ESD Channel Pin 1
B	ESD Channel Pin 2

### PACKAGE / PINOUT DIAGRAMS

Top View  
(Bumps Down)



Bottom View  
(Bumps Up)



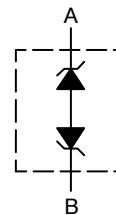
**ON Semiconductor®**

<http://onsemi.com>

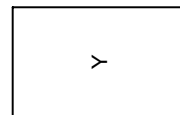


WLCSP2  
CP SUFFIX  
CASE 567AV

### BLOCK DIAGRAM



### MARKING DIAGRAM



Y = Specific Device Code

### ORDERING INFORMATION

Device	Package	Shipping
CM1242-33CP	CSP (Pb-Free)	10,000/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.

# CM1242-33CP

## SPECIFICATIONS

**Table 2. STANDARD OPERATING CONDITIONS**

Parameter	Rating	Units
Storage Temperature Range	-55 to +150	°C
Operating Temperature Range	-40 to +85	°C
Maximum Input Voltage	±5.5	V

**Table 3. ELECTRICAL OPERATING CHARACTERISTICS** (Note 1)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
$V_B$	Breakdown Voltage	$I_F = +10 \text{ mA}$ $I_F = -10 \text{ mA}$	6.0 -9.0	7.6 -7.6	9.0 -6.0	V
$I_{LEAK}$	Channel Leakage Current	$V_{IN} = \pm 3.3 \text{ V}$		±0.1	±0.5	μA
$C_{IN}$	Channel Input Capacitance	At 1 MHz, $V_{IN} = 0 \text{ V}$	45	55	66	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)	±30 ±30			kV
$V_{CL}$	Channel Clamp Voltage Positive Transients Negative Transients	$I_{PP} = 1 \text{ A}$ , $t_p = 8/20 \text{ μs}$		+8.6 -8.6		V
$R_{DYN}$	Dynamic Resistance Positive Transients Negative Transients	$I_{PP} = 1 \text{ A}$ , $t_p = 8/20 \text{ μs}$		0.4 0.4		Ω

1.  $T_A = 25^\circ\text{C}$  unless otherwise specified.

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

# CM1242-33CP

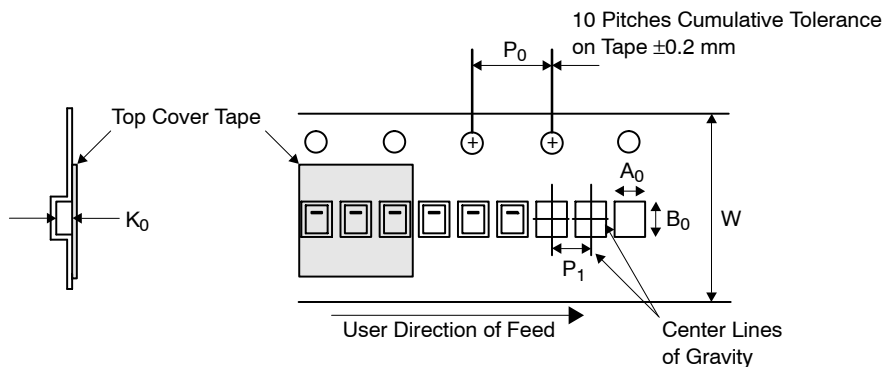
## MECHANICAL SPECIFICATIONS

### CM1242-33CP Mechanical Specifications

The CM1242-33CP is supplied in a 2-bump Chip Scale Package (CSP). Dimensions are presented below.

**Table 4. 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 Diameter	Qty per Reel	$P_0$	$P_1$
CM1242-33CP	0.60 X 0.30 X 0.275	0.67 X 0.37 X 0.35	8 mm	178 mm (7")	10,000	4 mm	2 mm



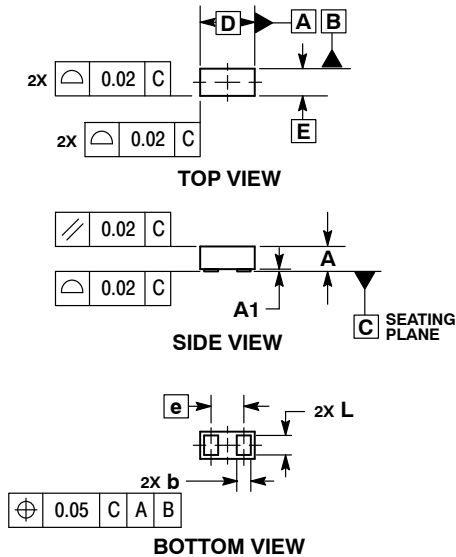
**Figure 1. Tape and Reel Mechanical Data**



SCALE 12:1

**WLCSP2, 0.6x0.3**  
CASE 567AV  
ISSUE C

DATE 22 SEP 2017



## NOTES:

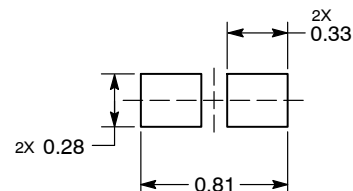
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.250	0.275	0.300
A1	0.000	0.025	0.050
b	0.140	0.155	0.170
D	0.570	0.600	0.630
E	0.270	0.300	0.330
e	0.36 BSC		
L	0.190	0.215	0.240

**GENERIC**  
**MARKING DIAGRAM\***


X = Specific Device Code

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

**RECOMMENDED**  
**SOLDER FOOTPRINT\***


DIMENSIONS: MILLIMETERS

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

<b>DOCUMENT NUMBER:</b>	<b>98AON49805E</b>	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
<b>DESCRIPTION:</b>	<b>WLCSP2, 0.6X0.3</b>	<b>PAGE 1 OF 1</b>

onsemi and onsemi are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding the 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. onsemi 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](http://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](http://www.onsemi.com/design/resources/technical-documentation)  
onsemi Website: [www.onsemi.com](http://www.onsemi.com)

### ONLINE SUPPORT: [www.onsemi.com/support](http://www.onsemi.com/support)

For additional information, please contact your local Sales Representative at  
[www.onsemi.com/support/sales](http://www.onsemi.com/support/sales)

