1-Channel Ultra Small 0201 Package ESD Protection Device in 0201

Description

The CM1242–07CP is a 2–bump ESD protection device in 0201 form factor. It is fully compliant with IEC 61000–4–2. The CM1242–07CP is also RoHS II compliant and has a pure tin finish.

Features

- Low Capacitance < 5.8 pF
- Low Clamping Voltage
- Small Body Outline Dimensions:0.60 mm x 0.30 mm
- Low Body Height: 0.275 mm
- Stand-off Voltage: ±5.0 V
- Low Dynamic Resistance: $< 1.5 \Omega$
- IEC61000-4-2 Level 4 ESD Protection
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant

Table 1. PIN DESCRIPTIONS

Pin	Description
А	ESD Channel Pin 1
В	ESD Channel Pin 2

PACKAGE / PINOUT DIAGRAMS

Top View (Bumps Down)



Bottom View (Bumps Up)





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WLCSP2 CP SUFFIX CASE 567AV





MARKING DIAGRAM



A = Specific Device Code

ORDERING INFORMATION

Device	Package	Shipping		
CM1242-07CP	(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.

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	Тур	Max	Units
VB	Breakdown Voltage	l _F = +1.0 mA l _F = -1.0 mA	6.0 -9.0	7.6 -7.6	9.0 -6.0	V
I _{LEAK}	Channel Leakage Current	V _{IN} = ±5.0 V		±1.0	±100	nA
C _{IN}	Channel Input Capacitance	At 1 MHz, V _{IN} = 0 V	4.6	5.8	7.0	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)	±17 ±17			kV
V _{CL}	Channel Clamp Voltage Positive Transients Negative Transients	I _{PP} = 1 A, t _p = 8/20 μs		+9.8 -9.8		v
R _{DYN}	Dynamic Resistance Positive Transients Negative Transients	I _{PP} = 1 A, t _p = 8/20 μs		1.5 1.5		Ω

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

2. Standard IEC 61000–4–2 with C_{Discharge} = 150 pF, R_{Discharge} = 330 Ω .



Figure 1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2



Figure 2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2



MECHANICAL SPECIFICATIONS

CM1242-07CP Mechanical Specifications

The CM1242–07CP is supplied in a 2-bump custom package. Dimensions are presented below.

Table 4. TAPE AND REEL SPECIFICATIONS

Part Number	Chip Size (mm)	Pocket Size (mm) B ₀ X A ₀ X K ₀	Tape Width W	Reel Diameter	Qty per Reel	Po	P ₁
CM1242-07CP	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 7. Tape and Reel Mechanical Data

CM1242-07CP Board Level Application.

Refer to Application Note AND8398/D - Board Level Application Note for 0201 DSN2 Package.





WLCSP2, 0.6x0.3 CASE 567AV ISSUE C

DATE 22 SEP 2017





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.

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