

# CM1242-07CP

## 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

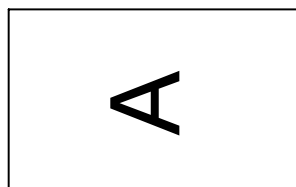
- Low Capacitance < 5.8 pF
- Low Clamping Voltage
- Small Body Outline Dimensions: 0.60 mm x 0.30 mm
- Low Body Height: 0.275 mm
- Stand-off Voltage:  $\pm 5.0$  V
- Low Dynamic Resistance: < 1.5  $\Omega$
- IEC61000-4-2 Level 4 ESD Protection
- These Devices are Pb-Free, Halogen Free/BFR Free and are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

**Table 1. PIN DESCRIPTIONS**

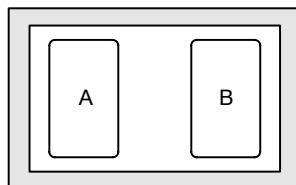
Pin	Description
A	ESD Channel Pin 1
B	ESD Channel Pin 2

### PACKAGE / PINOUT DIAGRAMS

Top View  
(Bumps Down)



Bottom View  
(Bumps Up)



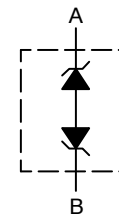
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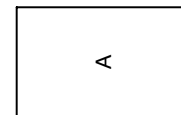


**WLCSP2  
CP SUFFIX  
CASE 567AV**

### BLOCK DIAGRAM



### 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.

# CM1242-07CP

## SPECIFICATIONS

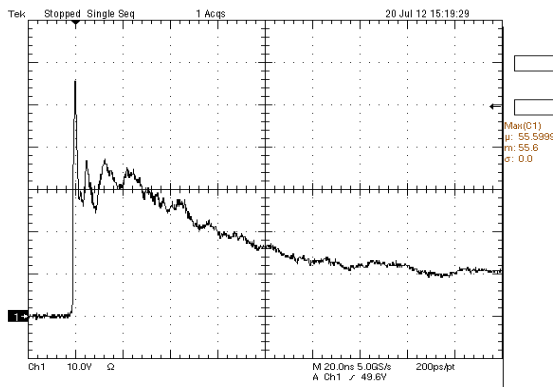
**Table 2. STANDARD OPERATING CONDITIONS**

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

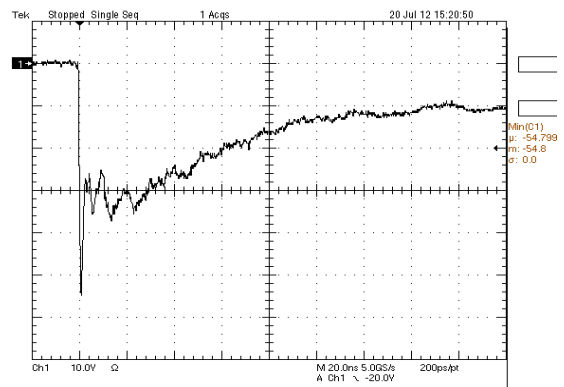
**Table 3. ELECTRICAL OPERATING CHARACTERISTICS** (Note 1)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
$V_B$	Breakdown Voltage	$I_F = +1.0 \text{ mA}$ $I_F = -1.0 \text{ mA}$	6.0 -9.0	7.6 -7.6	9.0 -6.0	V
$I_{LEAK}$	Channel Leakage Current	$V_{IN} = \pm 5.0 \text{ V}$		±1.0	±100	nA
$C_{IN}$	Channel Input Capacitance	At 1 MHz, $V_{IN} = 0 \text{ V}$	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	$I_{PP} = 1 \text{ A}$ , $t_p = 8/20 \mu\text{s}$		+9.8 -9.8		V
$R_{DYN}$	Dynamic Resistance Positive Transients Negative Transients	$I_{PP} = 1 \text{ A}$ , $t_p = 8/20 \mu\text{s}$		1.5 1.5		Ω

- $T_A = 25^\circ\text{C}$  unless otherwise specified.
- Standard IEC 61000-4-2 with  $C_{Discharge} = 150 \text{ pF}$ ,  $R_{Discharge} = 330 \Omega$ .



**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**

# CM1242-07CP

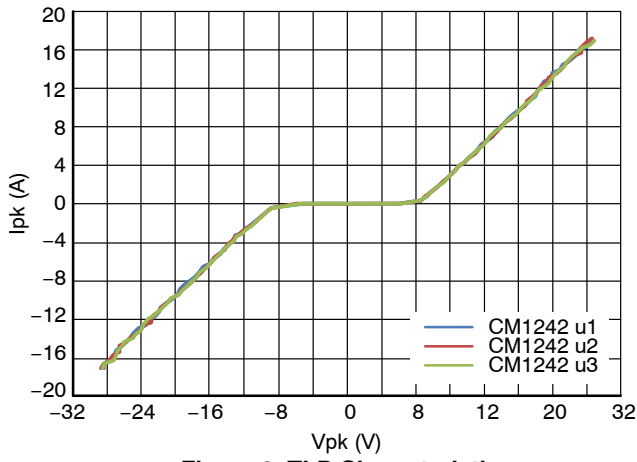


Figure 3. TLP Characteristics

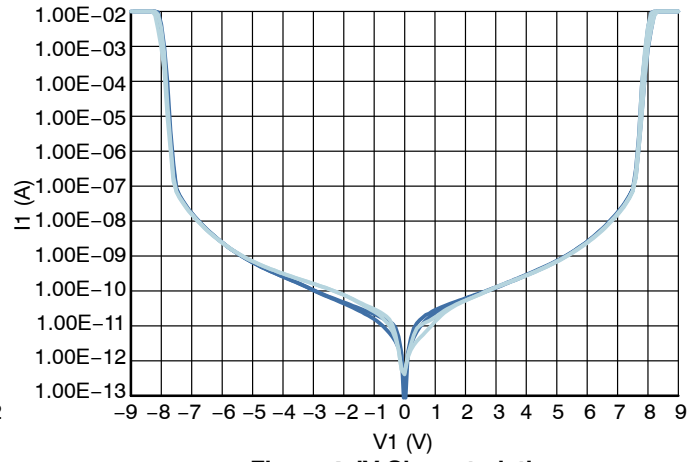


Figure 4. IV Characteristics

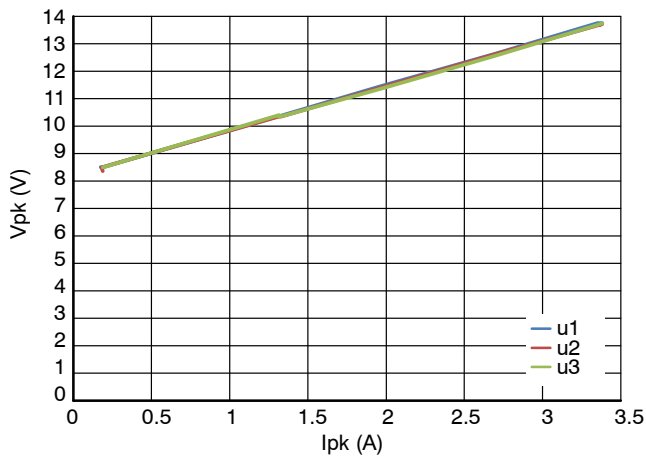


Figure 5. 80 x 20 Surge Characteristics

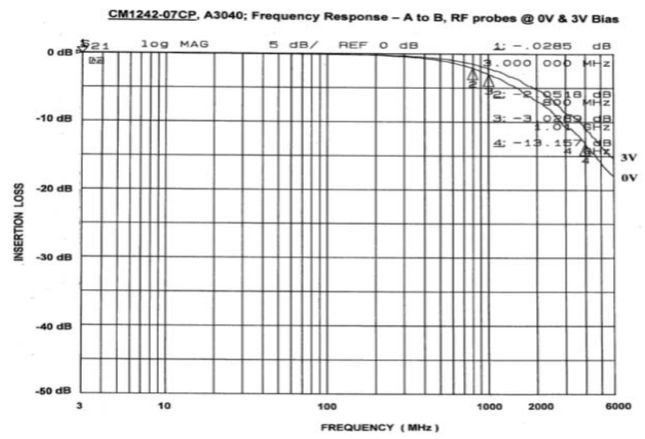


Figure 6. Typical Insertion Loss (S21)

# CM1242-07CP

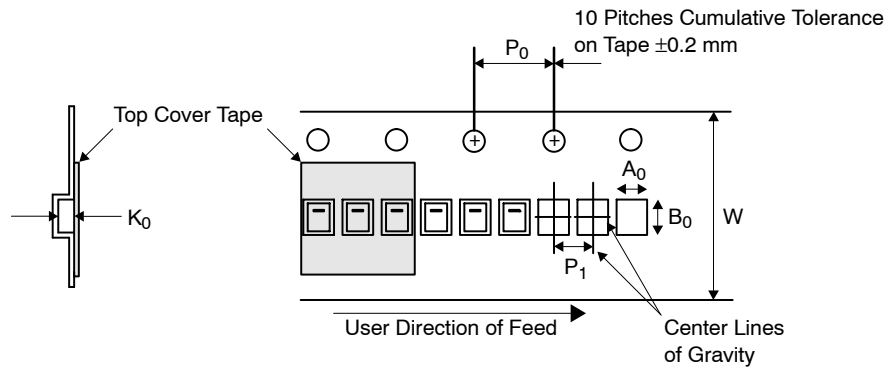
## MECHANICAL SPECIFICATIONS

### 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) $B_0 \times A_0 \times K_0$	Tape Width W	Reel Diameter	Qty per Reel	$P_0$	$P_1$
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.

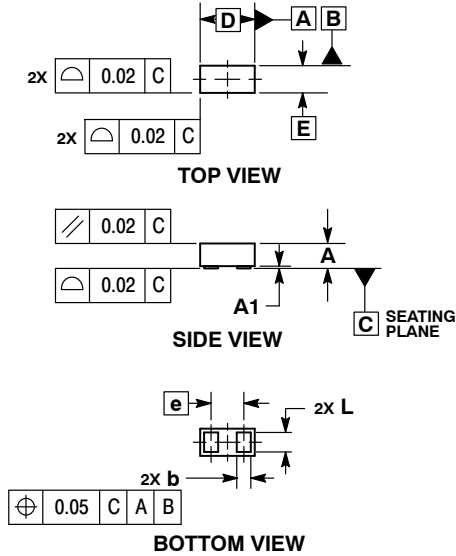
Refer to Application Note AND8398/D – Board Level Application Note for 0201 DSN2 Package.



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

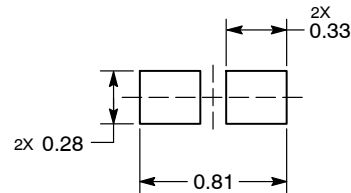
**GENERIC MARKING DIAGRAM\***



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 ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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