# CMPE0201V15MSP

## Surface Mount Polymeric ESD Suppressors

## Description

■ This device is an ultra low capacitance PESD product designed to protect very high speed data interfaces. CMPE0201V15MSP has a typical capacitance of only 0.05pf (I/O to GND), and it can be used to meet the ESD immunity requirements of IEC61000-4-2 (15KV air, 8KV contact discharge).

## Feature

■ ESD protection for high speed data lines to IEC61000-4-2
■ ESD contact discharge typical 8KV, max 15KV
■ ESD air discharge typical 15KV, max 25KV
■ Surface mount
■ Extremely low capacitance
■ Very low leakage current
■ Fast response time
■ Bi-directional ESD protection
■ Lead free solder termination
■ The best ESD protection for high frequency, low voltage applications

**Schematic Diagram**

## Application

■ High Definition Multi-Media Interface (HDMI)
■ Digital Visual Interface (DVI)
■ Display Port Interface (DP)
■ Unified Display Interface (UDI)
■ Mobile Display Digital Interface (MDDI)
■ Gigabit Ethernet
■ USB2.0 and USB3.0
■ IEEE1394 interface

## Absolute Maximum Ratings

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Maximum Contact discharge voltage Per IEC61000-4-2 | --- | 15KV | V |
| Maximum Air discharge voltage Per IEC61000-4-2 | --- | 25KV | V |
| Maximum Operating temperature | $T_{OPER}$ | -55 to +125 | ℃ |
| Maximum Storage temperature | $T_{STG}$ | -25 to +35 | ℃ |
| Maximum lead temperature for soldering during 10s | $T_L$ | 260 | ℃ |

## Electrical Characteristics($T_A$=25℃)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Rated Voltage | $V_R$ | --- | --- | --- | 12 | V |
| Trigger voltage | $V_T$ | IEC61000-4-2 8KV contact discharge | --- | 300 | --- | V |
| Clamping voltage | $V_C$ | IEC61000-4-2 8KV contact discharge | --- | 35 | --- | V |
| Leakage current | $I_L$ | DC 30V shall be applied on component | --- | 0.01 | 0.1 | uA |
| Capacitance | $C_P$ | $V_R$ = 0V, f = 1MHz | --- | 0.05 | | pF |

**Note: 1 Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.**

**2 After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.**

## ESD Clamping Test

## ESD Clamping Test Waveforms

## Solder Reflow Recommendations

## PRODUCT IDENTIFICATION

| CMPE | 0201 | V | 15 | MS | P |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |

(1) Series Type
(2) Chip Size（inch）:Length X Width
(3) Material Code
(4) Rated Voltage, $V_{DC}$
(5) Company Code
(6) Packaging：P – Embossed paper tape, 7" reel
E – Embossed plastic tape, 7" reel

## Order Information

| Device | Package | Net Weight | Carrier | Quantity | HSF Status |
|---|---|---|---|---|---|
| CMPE0201V15MSP | 0201 | 0.12 mg | Tape & Reel | 15,000pcs/reel | RoHS compliant |

## Revision history

| Date | Revision | Description of changes |
|---|---|---|
| 14-Dec-2016 | 3.0 | Update the Package info. |

## TYPICAL APPLICATIONS

**ESD protection for USB3.0 port**

**ESD protection for HDMI port**

## Product Dimension

| Symbol | Dimension | | | Unit |
|---|---|---|---|---|
| | Min | Typ | Max | |
| A | 0.55 | 0.60 | 0.65 | mm |
| B | 0.25 | 0.30 | 0.35 | |
| C | 0.25 | 0.30 | 0.35 | |
| H | 0.18 | 0.20 | 0.22 | |
| F | 0.255 | 0.275 | 0.295 | |
| G | 0.16 | 0.18 | 0.20 | |

## PAD Dimension

Solder thickness 0.08mm

| Symbol | Dimension | Unit |
|---|---|---|
| A | 0.30 | mm |
| B | 0.25 | |
| C | 0.60 | |

## Package Information

| Dimension | Typical | Unit |
|---|---|---|
| A0 | 0.38 | mm |
| B0 | 0.68 | |
| D | 1.55 | |
| P0 | 4.00 | |
| P1 | 2.00 | |
| P2 | 2.00 | |
| E | 1.75 | |
| F | 3.50 | |
| W | 8.00 | |

DIMENSIONS ARE: MILLIMETERS