

Low-Capacitance ESD Protection Diode Arrays

Features:

- 6 and 8 channels of ESD protection
- Provides ESD protection on each channel
- Provides ESD protection of $\pm 15\text{kV}$ per IEC-61000 Specifications
- Channel loading capacitance of **< 1.6pF**
- Channel to I/O capacitance of 0.04pF
- Can handle multiple ESD strikes
- Full RoHS compliance

Applications:

- USB 2.0 Power & Data Line Protection
- DVI & HDMI Port Protection
- VGA & Serial ATA Port Protection
- Mobile Handsets
- Digital Cameras and camcorders
- PDA & MP3 Players
- Digital TV and Set-top Boxes
- Other Portable Electronic Components

Product Description

The OC1216 provides a high level of protection for sensitive parts that may be subjected to over-voltage caused by electrostatic discharge (ESD). Key attribute is the low-capacitance of 1.6pF which is ideally suited for high-speed data ports. Each channel consists of a pair of diodes in series which steer the positive and negative ESD current pulse to either the positive (V_P) or negative (V_N) supply rail. A Zener (TVS) diode is embedded between V_P and V_N to protect the V_{CC} rail against ESD strikes and eliminates the need for a bypass capacitor (which would otherwise be needed for absorbing positive ESD strikes to ground). The TVS diode prevents over-voltage on the power line, protecting any down stream components.

ELECTRICAL OPERATING CHARACTERISTICS				
Electrical Specifications	MIN	TYP	MAX	UNITS
Operating Supply Voltage (V_P)		3.3	5.5	V
Operating Supply Current (I_P); $V_P=3.3\text{V}$			8	μA
Diode Forward Voltage ($I_F=8\text{mA}$, @ 25°C)				
Top Diode	0.6	0.8	0.95	V
Bottom Diode	0.6	0.8	0.95	V
Leakage current at $V_P=5\text{V}$, 25°C	-	± 0.1	± 1	μA
Signal Clamp Voltage at 25°C @ 10mA	6.5	7.5	9	V
ESD Protection				
Contact discharge per IEC 61000-4-2 standard		± 15	-	kV
Clamping voltage during ESD discharge MIL-STD-883D (Method 3015), 4kV				
Positive Transient	-	9	-	V
Negative Transient	-	-1.5	-	V
Input Capacitance(@; $V_P = 3.3\text{V}$; $V_{\text{Channel}} = 1.65\text{V}$; frequency = 1MHz)		1.6	2	pF
Temperature Range:				
Operating	-40	-	85	$^\circ\text{C}$
Storage	-55		150	$^\circ\text{C}$

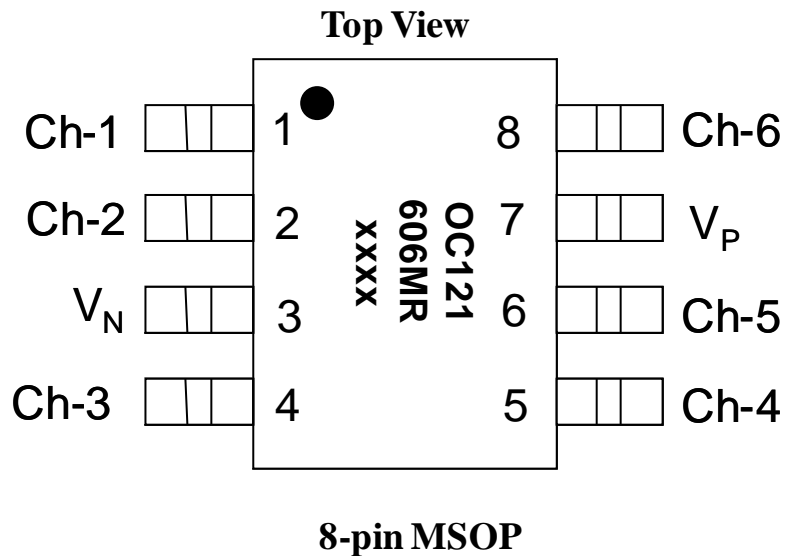
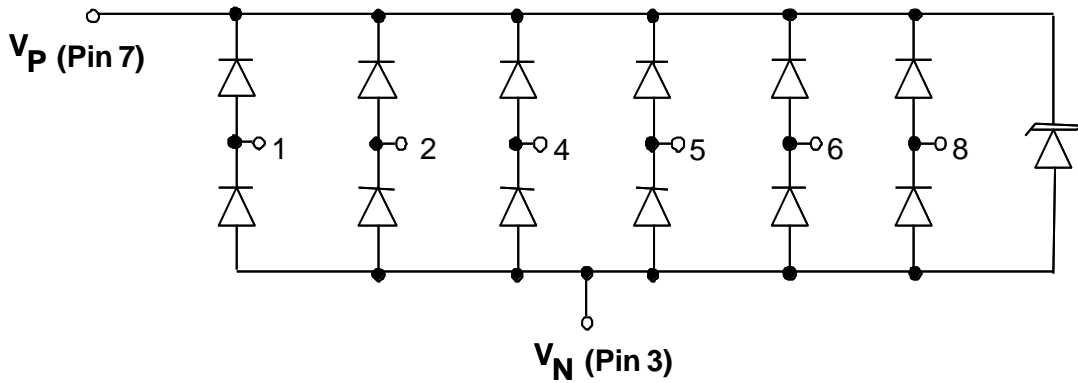
PRODUCT DATA SHEET

OnChip

OC1216

Ordering Part Number			
PART NUMBER	NUMBER OF ESD CHANNELS	PACKAGE	DEVICE MARKING CODE
OC1216-06MR	6-Channels (lead-free)	MSOP-8	OC1216 06MR
OC1216-08MR	8-Channels (lead-free)	MSOP-10	OC1216 08MR

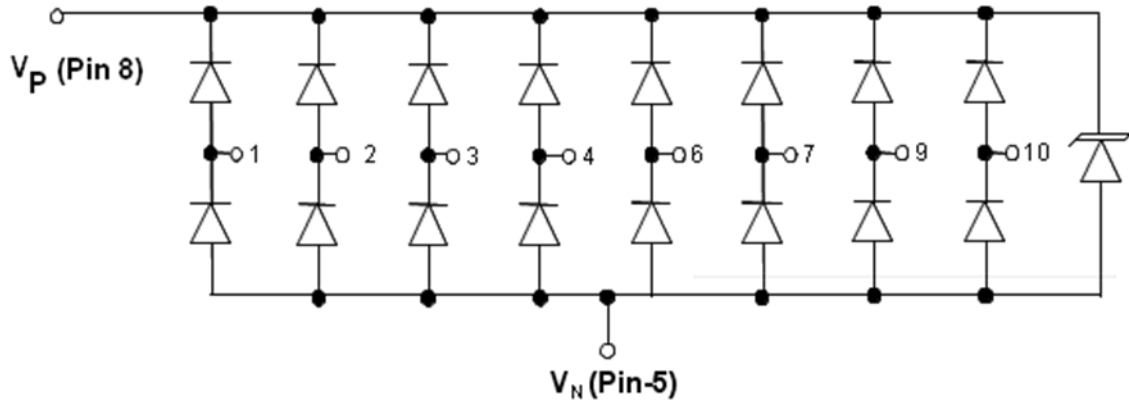
6-Ch in a 8-pin MSOP package
OC1216-06MR (lead-free)



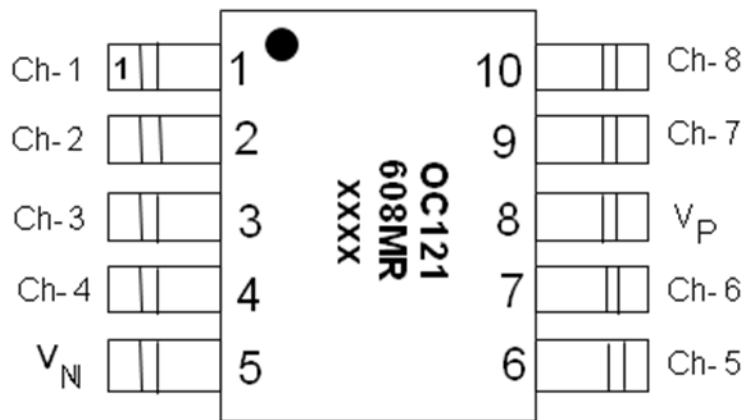
Please note that xxxx is manufacturing date -code

8-Ch in a 10-pin MSOP package

OC1216-08MR (lead-free)



Top View



10-pin MSOP

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