

## Transient Voltage Suppressors Array for ESD Protection

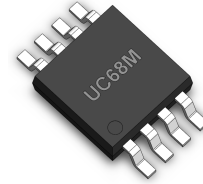
Low Capacitance

### ESD05V08P-LC

#### Description

The ESD05V08P-LC is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

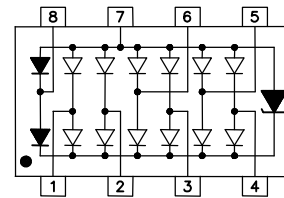
#### MSOP-08



#### Feature

- ◆ 100 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects Six High-Speed I/O lines
- ◆ Low clamping voltage
- ◆ Working voltages : 5V
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 3A (8/20μs)

#### Functional Diagram



#### Applications

- ◆ USB Series or High-Speed Data Line
- ◆ Microprocessor based equipment
- ◆ Video Graphs Cards
- ◆ Digital Video Interface (DVI)
- ◆ High Definition Multi-Media Interface (HDMI)
- ◆ ATM Interfaces
- ◆ IEEE1394 Fire wire Ports

#### Mechanical Characteristics

- ◆ MSOP-08 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 25.0 Milligrams (Approximate)
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

#### Mechanical Characteristics

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (tp=8/20μs waveform)	100	W
T <sub>L</sub>	Lead Soldering Temperature	260 (10sec)	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>J</sub>	Operating Temperature Range	-55 to +150	°C
	IEC61000-4-2 (ESD)	Air Discharge ±15 Contact Discharge ±8	KV
	IEC61000-4-4 (EFT)	40	A
	IEC61000-4-5 ( Lightning )	3	A

**Transient Voltage Suppressors Array for ESD Protection**

**Low Capacitance**

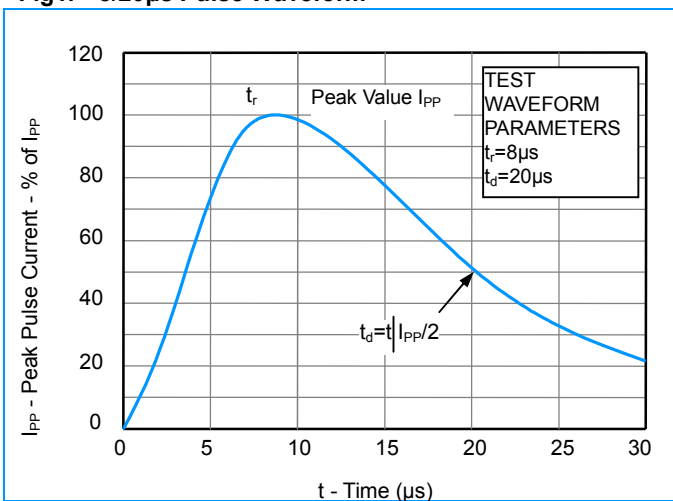
**ESD05V08P-LC**

Electrical Characteristics (@ 25°C Unless Otherwise Specified)

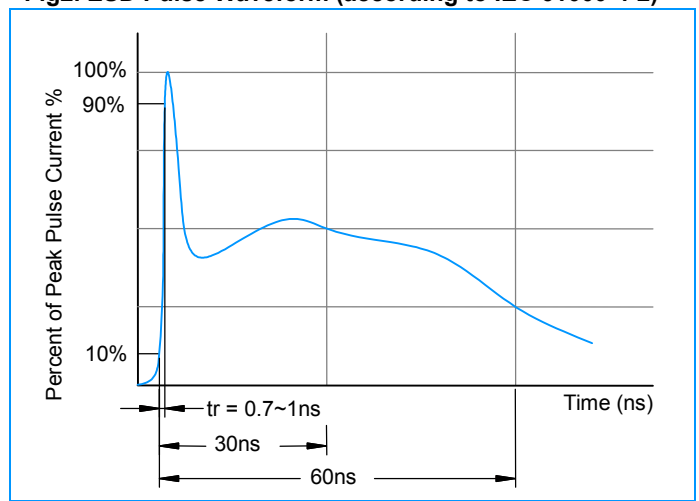
Part Number	Device Marking	V <sub>RWM</sub> (V) (Max.)	V <sub>B</sub> (V) (Min.)	I <sub>T</sub> (mA)	V <sub>C</sub> @1A (Max.)	V <sub>C</sub>		I <sub>R</sub> (μA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ESD05V08P-LC	UC68M	5	6	1	9.8	23	3	1	1

**Characteristic Curves**

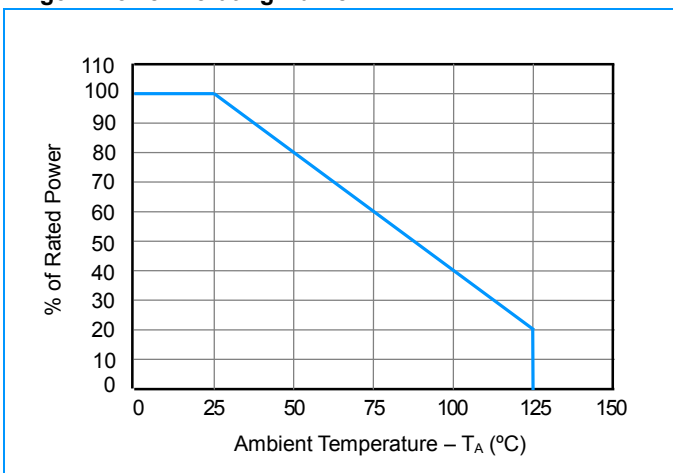
**Fig1. 8/20μs Pulse Waveform**



**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**



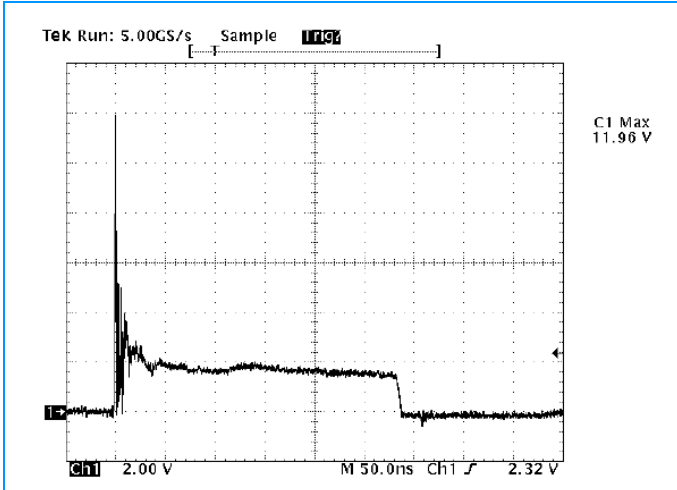
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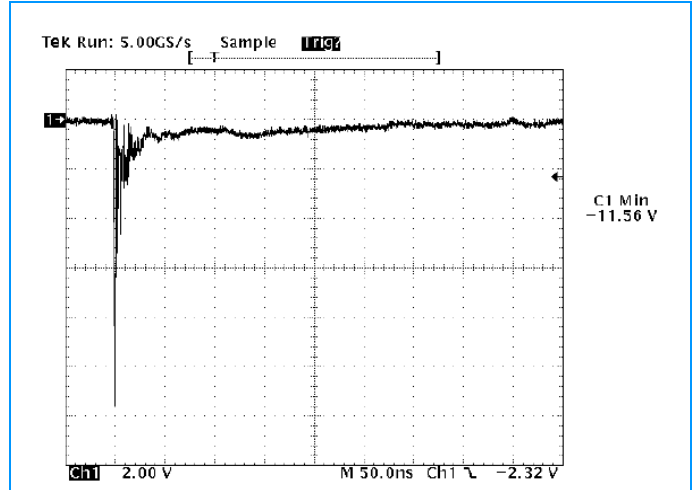
**ESD05V08P-LC**

**Characteristic Curves**

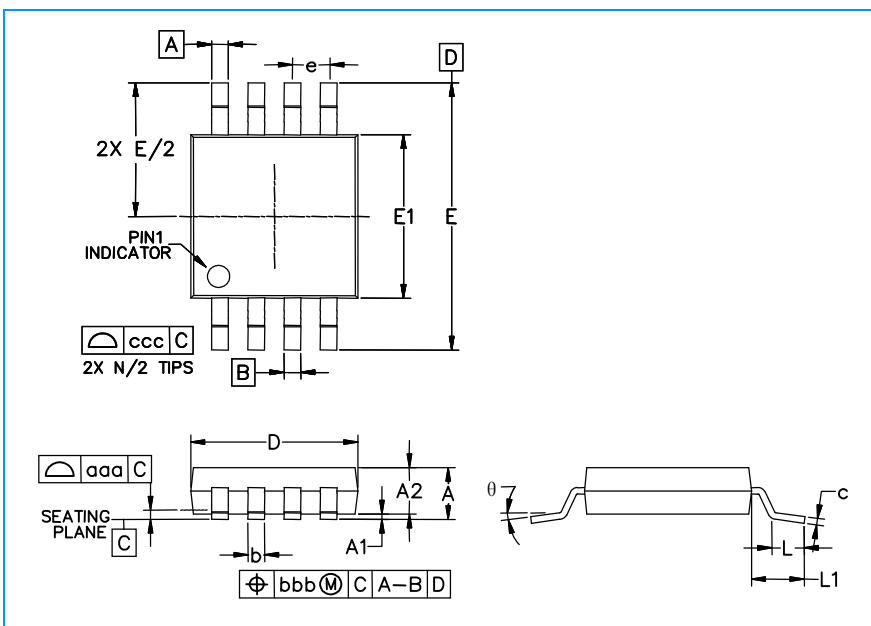
**Fig4. ESD Clamping (+8KV Contac per IEC61000-4-2)**



**Fig5. ESD Clamping (-8KV Contac per IEC61000-4-2)**

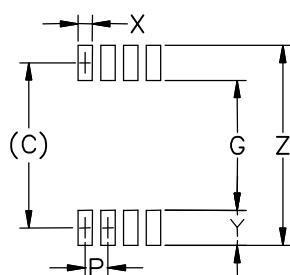


**MSOP-08 Package Outline & Dimensions**



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	-	-	0.043	-	-	1.10
A1	0.000	-	0.004	0.00	-	0.10
A2	0.030	0.033	0.037	0.75	0.85	0.95
b	0.009	0.012	0.015	0.22	0.30	0.38
c	0.005	0.006	0.009	0.13	0.15	0.23
D	0.118 BSC			3.00 BSC		
E1	0.118 BSC			3.00 BSC		
E	0.193 BSC			4.90 BSC		
e	0.026 BSC			0.65 BSC		
L	0.016	0.021	0.026	0.40	0.53	0.66
L1	0.037 REF			0.95 REF		
N	8			8		
θ	0°	-	8°	0°	-	8°
aaa	0.004			0.10		
bbb	0.003			0.08		
ccc	0.010			0.25		

**Soldering Footprint**



Symbol	Inches	Millimeters
C	0.1890	4.80
G	0.1448	3.78
P	0.026	0.65
X	0.0161	0.41
Y	0.0402	1.02
Z	0.2291	5.82