

Transient Voltage Suppressors Array for ESD Protection

Low Capacitance

ULC0568M

Description

The ULC0568M 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.

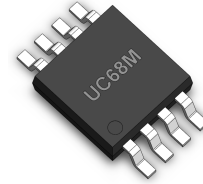
Feature

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

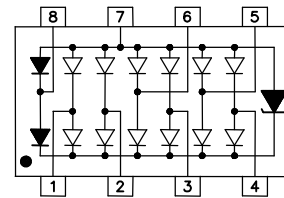
Applications

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

MSOP-08



Functional Diagram



Mechanical Characteristics

- u MSOP-08 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 25.0 Milligrams (Approximate)
- u Quantity Per Reel : 1,000pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
P _{PP}	Peak Pulse Power (tp=8/20µs waveform)	100	W
T _L	Lead Soldering Temperature	260 (10sec)	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _J	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

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Device Marking	V _{RWM} (V) (Max.)	V _B (V) (Min.)	I _T (mA)	V _C @1A (Max.)	V _C		I _R (μA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ULC0568M	UC68M	5	6	1	9.8	23	3	1	1

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

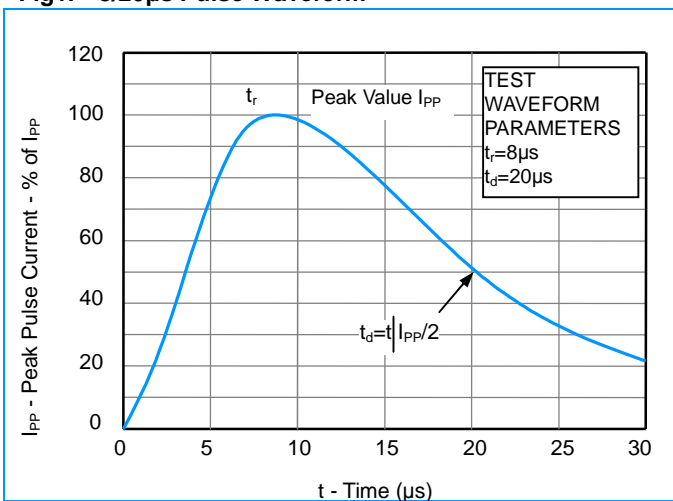


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

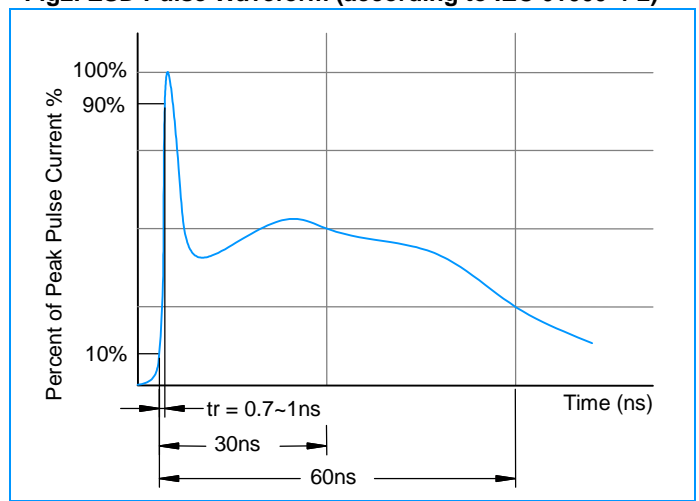
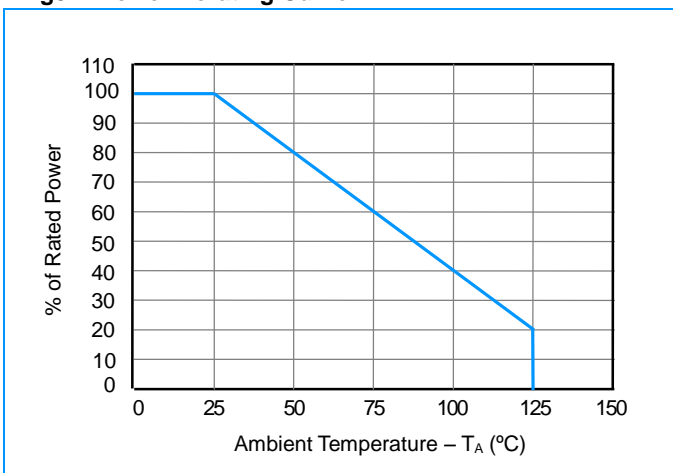


Fig3. Power Derating Curve



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Characteristic Curves

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

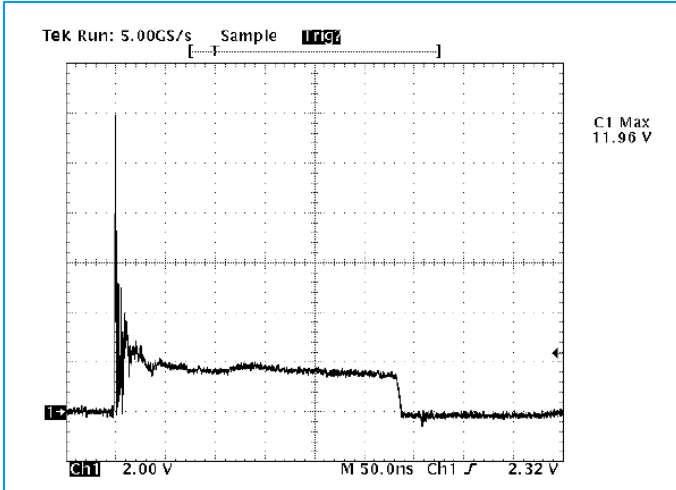
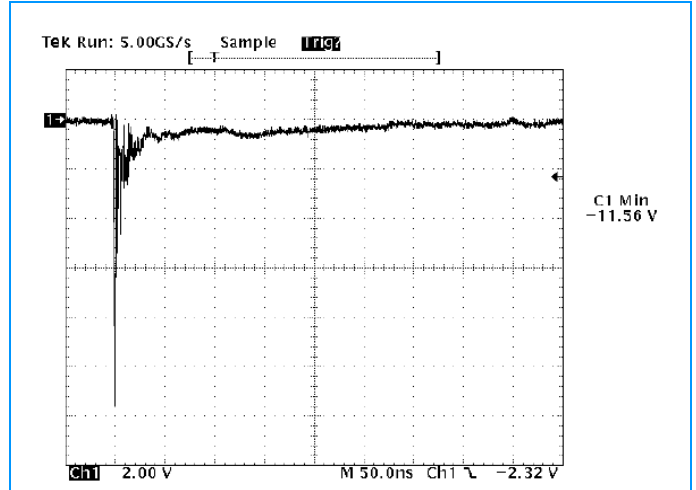
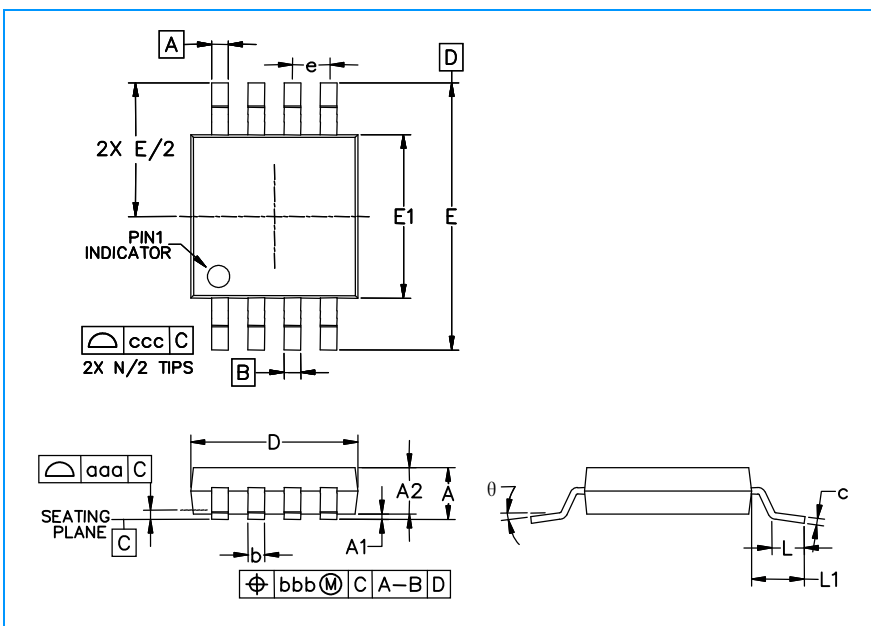


Fig5. ESD Clamping (-8KV Contac per IEC61000-4-2)

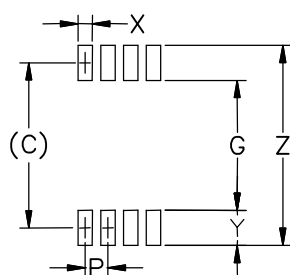


MSOP-08 Package Outline & Dimensions



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