

Transient Voltage Suppressors Array for ESD Protection

Low Capacitance

ULC0524P

Description

The ULC0524P 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.

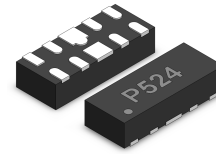
Feature

- u 150 Watts Peak Pulse Power per Line (tp=8/20µs)
- u Protects two or four I/O lines
- u Low capacitance: 0.3pF typical (I/O to I/O)
- u Low operating voltage: 5V
- u RoHS Compliant
- u IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- u IEC61000-4-4 (EFT) 40A (5/50ns)
- u IEC61000-4-5 (Lightning) 5A (8/20µs)

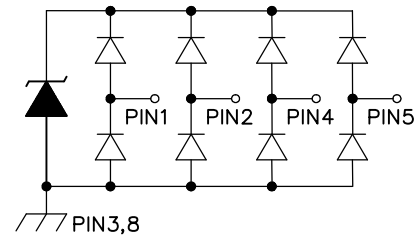
Applications

- u High Definition Multimedia Interface (HDMI)
- u Digital Visual Interface (DVI)
- u Unified Display Interface (UDI)
- u MDDI Ports
- u PCI Express
- u Serial ATA

DSON-10



Functional Diagram



Mechanical Characteristics

- u DSON-10 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 15.0 Milligrams (Approximate)
- u Quantity Per Reel : 3,000pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

Mechanical Characteristics

| Symbol | Parameter | Value | Units |
|------------------|---------------------------------------|-------------|-------|
| PPP | Peak Pulse Power (tp=8/20µs waveform) | 150 | 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 | KV |
| | Contact Discharge | ±8 | |
| | IEC61000-4-4 (EFT) | 40 | A |
| | IEC61000-4-5 (Lightning) | 5 | 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) | | |
| ULC0524P | P524 | 5 | 6 | 1 | 15 | 25 | 5 | 1 | 0.8 |

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

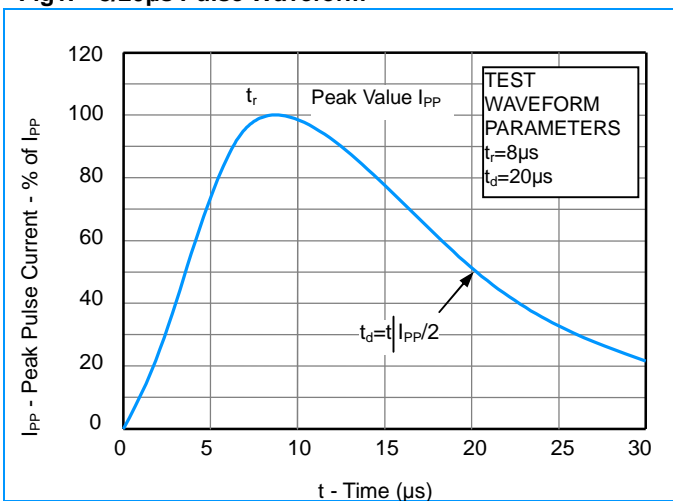


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

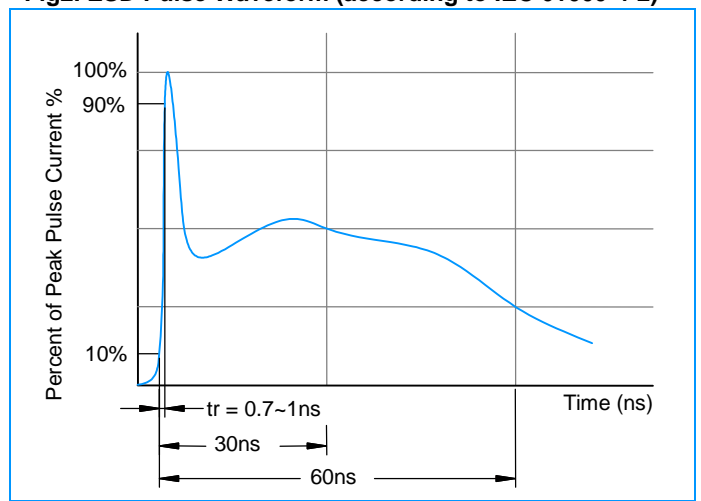


Fig3. Non - Repetitive Peak Pulse Power vs. Pulse Time

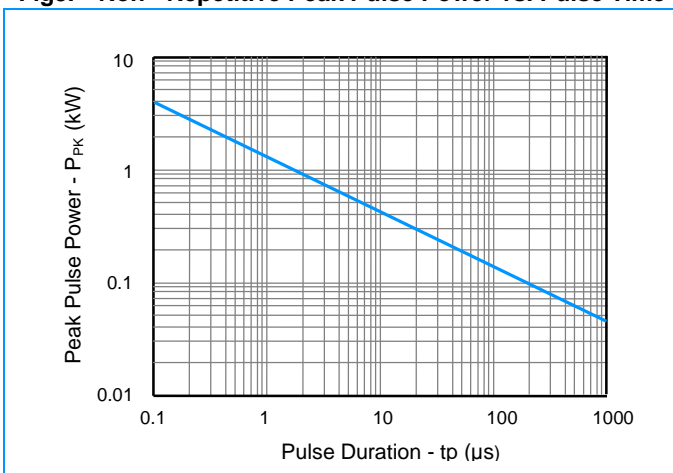
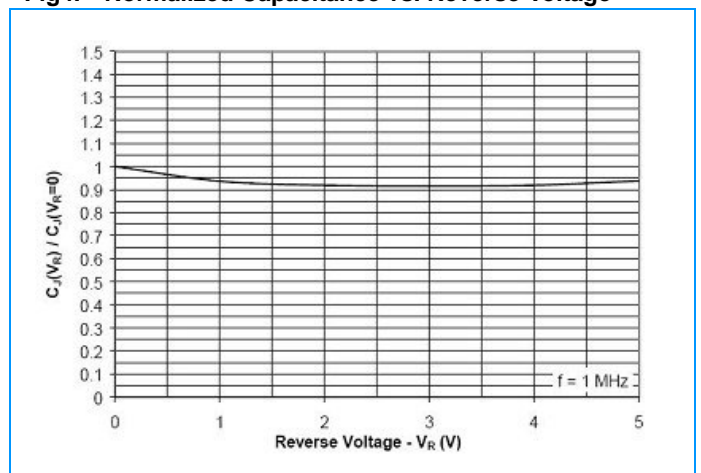


Fig4. Normalized Capacitance vs. Reverse Voltage

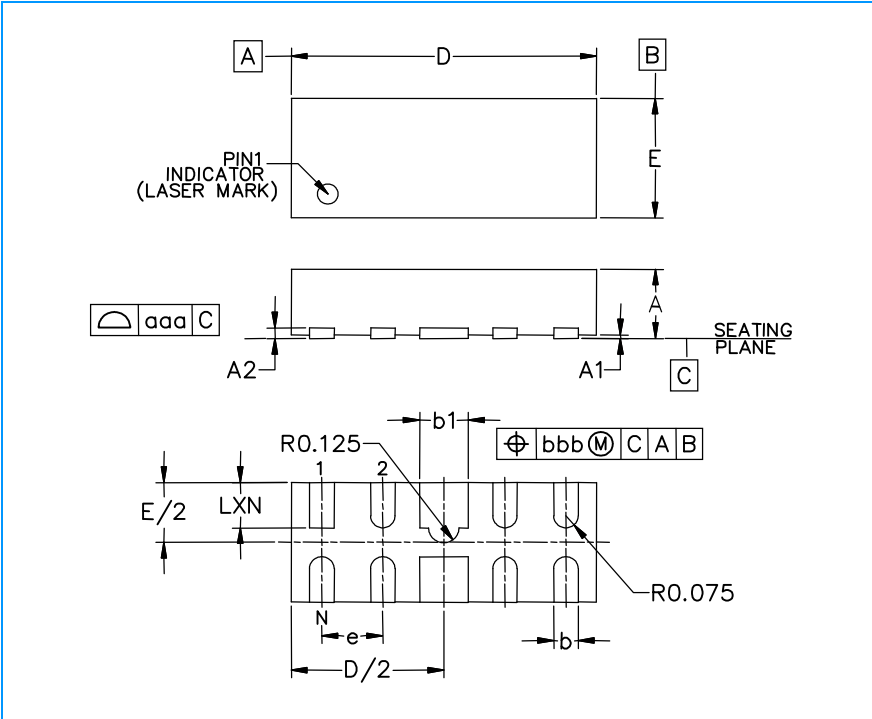


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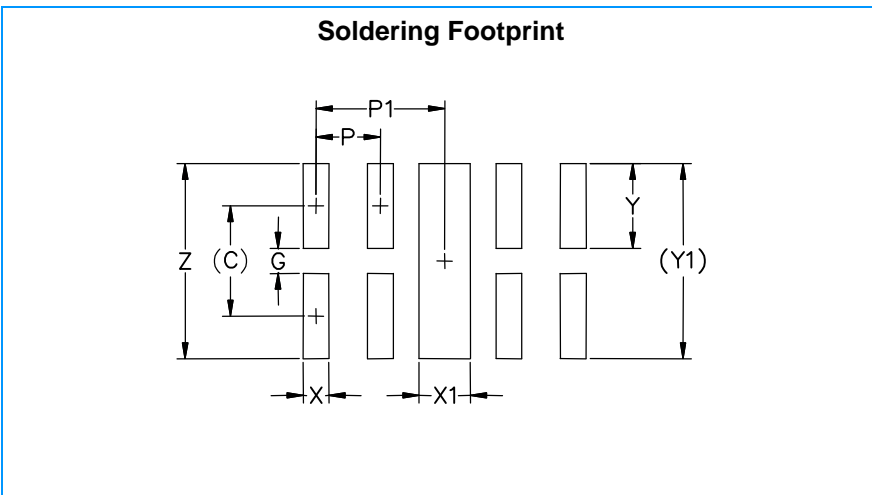
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DSON-10 Package Outline & Dimensions



| Symbol | Inches | | | Millimeters | | |
|--------|-----------|-------|-------|-------------|------|-------|
| | Min. | Nom. | Max. | Min. | Nom. | Max. |
| A | 0.020 | 0.023 | 0.026 | 0.50 | 0.58 | 0.65 |
| A1 | 0.000 | 0.001 | 0.002 | 0.00 | 0.03 | 0.05 |
| A2 | (0.005) | | | (0.13) | | |
| b | 0.006 | 0.008 | 0.010 | 0.15 | 0.20 | 0.25 |
| b1 | 0.014 | 0.016 | 0.018 | 0.35 | 0.40 | 0.45 |
| D | 0.094 | 0.098 | 0.102 | 2.40 | 2.50 | 2.60 |
| E | 0.035 | 0.039 | 0.043 | 0.90 | 1.00 | 1.10 |
| e | 0.020 BSC | | | 0.50 BSC | | |
| L | 0.012 | 0.015 | 0.017 | 0.30 | 0.38 | 0.425 |
| N | 10 | | | 10 | | |
| aaa | 0.003 | | | 0.08 | | |
| bbb | 0.004 | | | 0.10 | | |

Soldering Footprint



| Symbol | Inches | Millimeters |
|--------|---------|-------------|
| C | (0.034) | (0.875) |
| G | 0.008 | 0.20 |
| P | 0.020 | 0.50 |
| P1 | 0.039 | 1.00 |
| X | 0.008 | 0.20 |
| X1 | 0.016 | 0.40 |
| Y | 0.027 | 0.675 |
| Y1 | (0.061) | 1.55 |
| Z | 0.061 | 1.55 |