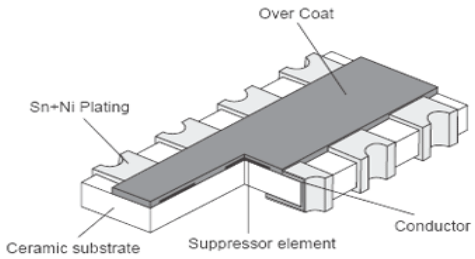
# MSA Low Capacitance MAX Guard® ESD Suppressor Array

The content of this specification may change without notification 10/12/07




## FEATURES

- Low capacitance (<0.2pF)
- Ultra low leakage current (<1nA)
- Fast response time
- Bi-direction device

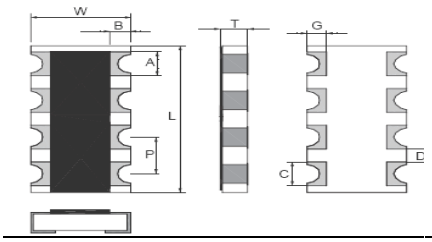
## HOW TO ORDER

| MSA | 24 | A | 05 | T | 1 | V1 |
|---|---|---|---|---|---|---|
| **Product Code** | **Size** | **Tolerance** | **Operating Voltage** | **Packaging** | **Typical Clamping Voltage** | **Typical Trigger Voltage** |
| MAX Guard Suppressor | 24: 0402X4<br>34: 0603X4 | A: Suit For IEC6100-4-2<br>C: Suit For IEC6100-4-2 & AEC-Q200 | 03: 3.3V<br>05: 5.5V<br>12: 12V<br>24: 24V | T: Paper Tape (5K/10K) | 1: 17V<br>2: 25V | V1: 150V V2: 250V |

## APPLICATIONS

- Cell / smart phone
- Computers / Laptops
- Digital cameras
- PDA's
- Plasma display panels / LCD / TVs/ HDTVs
- Mp3 / Multimedia players
- Scanner / Printer
- High speed data ports USB 2.0, IEEE1394

## SCHEMATIC




## DIMENSIONS (mm)

| Size | L | W | T | P | A | B | C | D | G |
|---|---|---|---|---|---|---|---|---|---|
| MS04 (0402) | 2.0±0.1 | 1.0±0.1 | 0.45±0.1 | 0.5±0.1 | 0.3±0.1 | 0.2±.0.1 | 0.3±0.1 | 0.15±0.1 | 0.25±0.15 |
| MS06 (0603) | 3.2±0.2 | 1.5±0.2 | 0.6±0.1 | 0.8±0.1 | 0.6±0.1 | 0.3±0.2 | 0.5±0.1 | 0.25±0.1 | 0.35±0.15 |

## ELECTRICAL CHARACTERISTICS

| Type | Continuous Operating Voltage (Max.) | ESD Capability | Trigger Voltage (Typ.) | Clamping Voltage (Typ.) | Capacitance | Leakage Current (Typ.) | Response Time | ESD Pulse Withstand (Typ.) |
|---|---|---|---|---|---|---|---|---|
| MSA24A03T1V1 | 3.3 VDC | Direct Discharge: 8KV Air Discharge:15KV | 150V | 17V | <0.02pF | <10nA | <1ns | >1000 pulses |
| MSA24A03T2V2 | | | 250V | 25V | | | | |
| MSA24A05T1V1 | 5.5 VDC | | 150V | 17V | | | | |
| MSA24A05T2V2 | | | 250V | 25V | | | | |
| MSA24A12T1V1 | 12 VDC | | 150V | 17V | | | | |
| MSA24A12T2V2 | | | 250V | 25V | | | | |
| MSA24A24T1V1 | 24 VDC | | 150V | 17V | | | | |
| MSA24A24T2V2 | | | 250V | 25V | | | | |
| MSA34A03T1V1 | 3.3 VDC | Direct Discharge: 8KV Air Discharge:15KV | 150V | 17V | <0.02pF | <10nA | <1ns | >1000 pulses |
| MSA34A03T2V2 | | | 250V | 25V | | | | |
| MSA34A05T1V1 | 5.5 VDC | | 150V | 17V | | | | |
| MSA34A05T2V2 | | | 250V | 25V | | | | |
| MSA34A12T1V1 | 12 VDC | | 150V | 17V | | | | |
| MSA34A12T2V2 | | | 250V | 25V | | | | |
| MSA34A24T1V1 | 24 VDC | | 150V | 17V | | | | |
| MSA34A24T2V2 | | | 250V | 25V | | | | |

- The function meets with the requirement of IEC 61000-4-2 specification.
- Trigger measurement made using Transmission Line Pulse method.
- Capacitance measured at 1 M~1.8 GHz.
- Performing under IEC 61000-4-2 level 4 (8KV contact discharge, 15KV air discharge).

American Accurate Components, Inc.
188 Technology Drive, Unit H, Irvine, CA 92618
TEL: 949-453-9888 ◆ FAX: 949-453-8889