TDK ESD Protection Device

EIA0402 Multilayer Chip Varistor

Features
- EIA0402 (1.0x0.5mm) chip size.
- Excellent ESD clamp characteristics that is very superior to the present products.
- High ESD durability (Based on IEC61000-4-2, Contact-8kV)

Applications
- Automotive Signal Line
- Ethernet

Shapes & Dimensions

```plaintext
<table>
<thead>
<tr>
<th>EIA</th>
<th>L</th>
<th>W</th>
<th>T</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0402</td>
<td>1.0±0.05</td>
<td>0.5±0.05</td>
<td>0.5±0.05</td>
<td>0.1 Min.</td>
</tr>
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Product Identification

AVRH 10 C 101 K T 1R1 N E 8
(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)
(1) Series name / AVRH (H = High Reliability)
(2) Dimension / 10 : 1.0 x 0.5 (mm)
(3) Structure
(4) Varistor voltage 101 : 100 (V) (Based on OA EMC Test Spec.)
(5) Varistor voltage tolerance / K : ± 10 (%)
(6) Packaging scheme / T : Taping
(7) Capacitance / 1R1 : 1.1 (pF)
(8) Capacitance tolerance / N : ± 0.3 (pF)
(9) ESD durability grade / E : 8kV (IEC61000-4-2 HBM)
(10) Operating temperature / 8 : 150 (°C)

Recommended PCB Pattern

Equivalent Circuit

Electrical Characteristics

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Rated Voltage (Vdc)</th>
<th>Varistor Voltage (V1mA)</th>
<th>Capacitance (C1MHz)</th>
<th>Leakage Current (at Vdc)</th>
<th>Leakage Current (µA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVRH10C101KT1R1NE8</td>
<td>70 Max.</td>
<td>110(100-120)</td>
<td>1.1 (0.8-1.4)</td>
<td>1</td>
<td></td>
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</table>

Immunity Test

1) Injection Noise
2) Reflection
3) 60~70V Surplus Voltage

Transceiver IC’s error doesn’t occur by the surplus voltage, because V1mA value is set to 100V
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Current vs. Voltage Curve

Frequency Characteristics

Transmission Characteristics