

Data Sheet

- ITEM : ESD FILTER

-PART NO : ICVE21184E070R101FR

1. Scope

- This specification applies to R-varistor for EMI & ESD devices.
- The specification can be modified by documentary agreement between design engineers and customers.

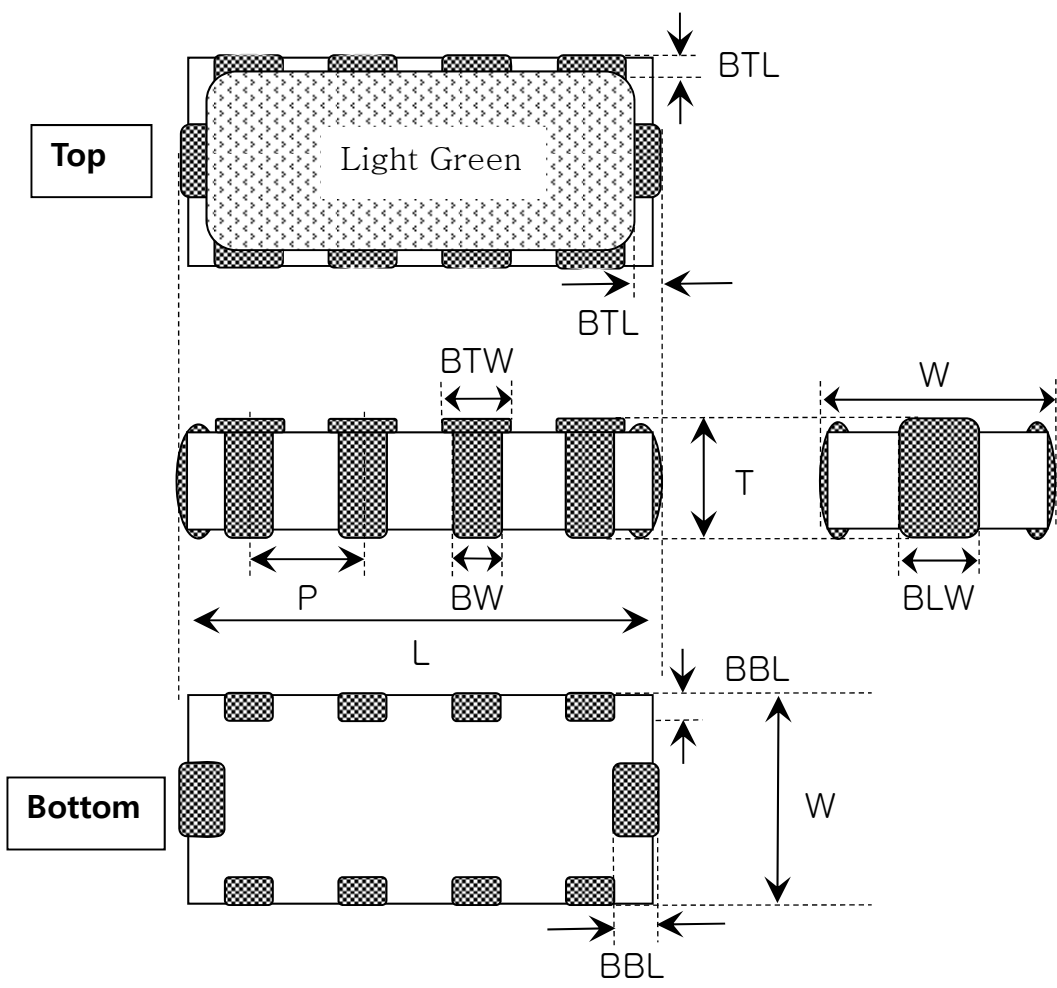
2. Features

- 4 EMI filter lines per device.
- Multilayer chip EMI suppression filter utilizing π -type circuit.
- Very thin (max. 0.55t) and low space consuming(2.03X1.27mm²) size.
- Steep attenuation characteristic plot, Highly effective noise suppression.
- Covers a wide range of frequencies.
- No asymmetrical degradation.
- Simpler fabricating process than diode-type filters.
- Soldering of plating type terminations guarantee high physical and electrical reliability.

3. Applications

- Where EMI filtering in ESD sensitive equipment is required.
- Mobile Phones
- Computers and Printers
- Communication Systems
- Internet Appliances
- PDAs
- Laptop Computers

4. Configuration and Dimensions



Unit : mm

| Symbol | Dimensions | Symbol | Dimensions |
|--------|------------|--------|------------|
| L | 2.03±0.10 | BTL | 0.15±0.05 |
| W | 1.27±0.10 | BBL | 0.20±0.05 |
| T | 0.55max | BTW | 0.32±0.05 |
| P | 0.51±0.05 | BLW | 0.40±0.10 |
| BW | 0.30±0.10 | | |

5. Part Number Code

ICVE 21 18 4E 070 R101 F R

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① SERIES NAME

| CODE | PRODUCT NAME |
|------|--------------------------------|
| ICVE | EMI Filter Array chip Varistor |

② SIZE DESIGNATOR

| CODE | SIZE(mm) |
|------|-------------|
| 21 | 2.03 × 1.27 |

③ WORKING VOLTAGE

| CODE | VOLTAGE(VDC) |
|------|--------------|
| 05 | 5.6 |
| 09 | 9 |
| 14 | 14 |
| 18 | 18 |

④ NUMBER OF ELEMENT

| CODE | NUMBER OF ELEMENT |
|------|-------------------|
| 4E | 4 Element |

⑤ C line CAPACITANCE

| CODE | CAPACITANCE@1MHz(pF) |
|------|----------------------|
| 050 | 5 |
| 070 | 7.5 |
| 150 | 15 |
| 250 | 25 |
| 300 | 30 |
| 500 | 50 |

⑥ RESISTANCE

| CODE | RESISTANCE(Ω) |
|------|---------------|
| R100 | 10 |
| R500 | 50 |
| R101 | 100 |
| R201 | 200 |
| R401 | 400 |

⑦ TERMINATION

| CODE | TYPE |
|------|------------------------|
| F | Electroplate (Pb-free) |

⑧ PACKING TYPE

| CODE | TYPE |
|------|------------------|
| R | Tape & Reel pack |

6. Nominal Specifications

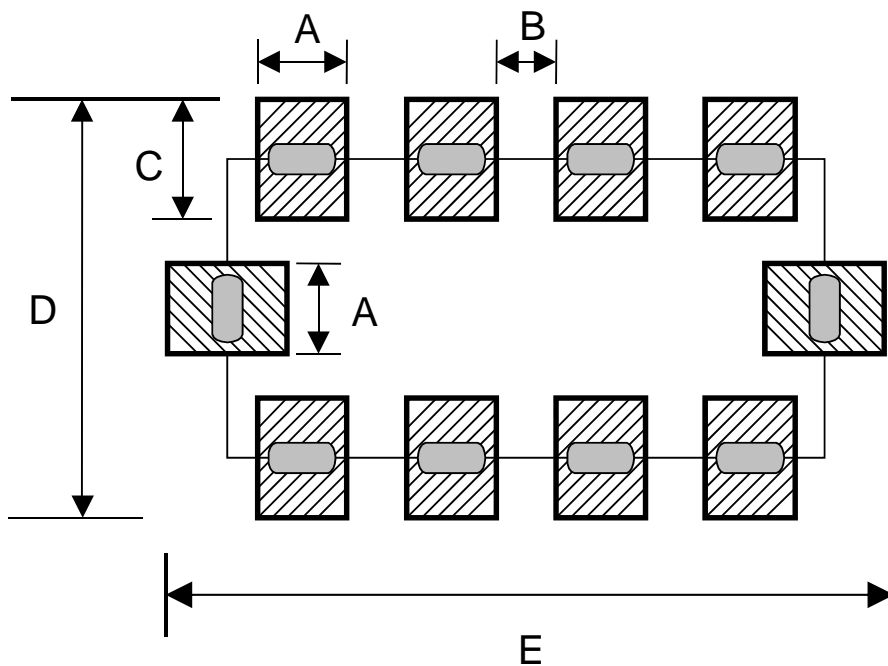
| Chip Size | ICT Part Number | Leakage Current | Varistor Voltage | Clamping Voltage | Peak Current | Resistance | Capacitance |
|-----------|-------------------|-----------------|------------------|-------------------|--------------|-----------------|-----------------|
| | symbol | I_L | V_B | V_C | I_{peak} | R | C line |
| | Units | Amp (max.) | volts | volts (typ.) | Amp (max.) | Ohm (max.) | pF (typ.) |
| | Test Condition | 18V | 1mA DC | 8/20 μ s @ 1A | 8/20 μ s | 25°C | 0.5Vrms @1MHz |
| 2012 | ICVE21184E070R101 | <20 μ A | 55-85 | 130 | 5 | 100(\pm 30%) | 7.5(\pm 30%) |

| ICT Part Number | Frequency(MHz) | Attenuation(dB) | Cut-off Frequency(MHz) |
|-------------------|----------------|-----------------|------------------------|
| ICVE21184E070R101 | 1,800-2,500 | minimum | Typical(-3dB) |
| | | -20 | 330 |

■ TERMINOLOGY

- I_L : Maximum steady state DC operating voltage the varistor can maintain and not exceed 20 μ A leakage current.
- V_B : Voltage across the device measured at 1mA DC current
- V_C : Maximum peak voltage across the varistor measured at a specified pulse and waveform
Pulse Current : 1A , Waveform : 8/20 μ s
- I_{peak} : Maximum peak current which may be applied with the specified waveform without device failure
- C : Device capacitance measured with zero volt bias 0.5Vrms and 1MHz

7. LAND PATTERN



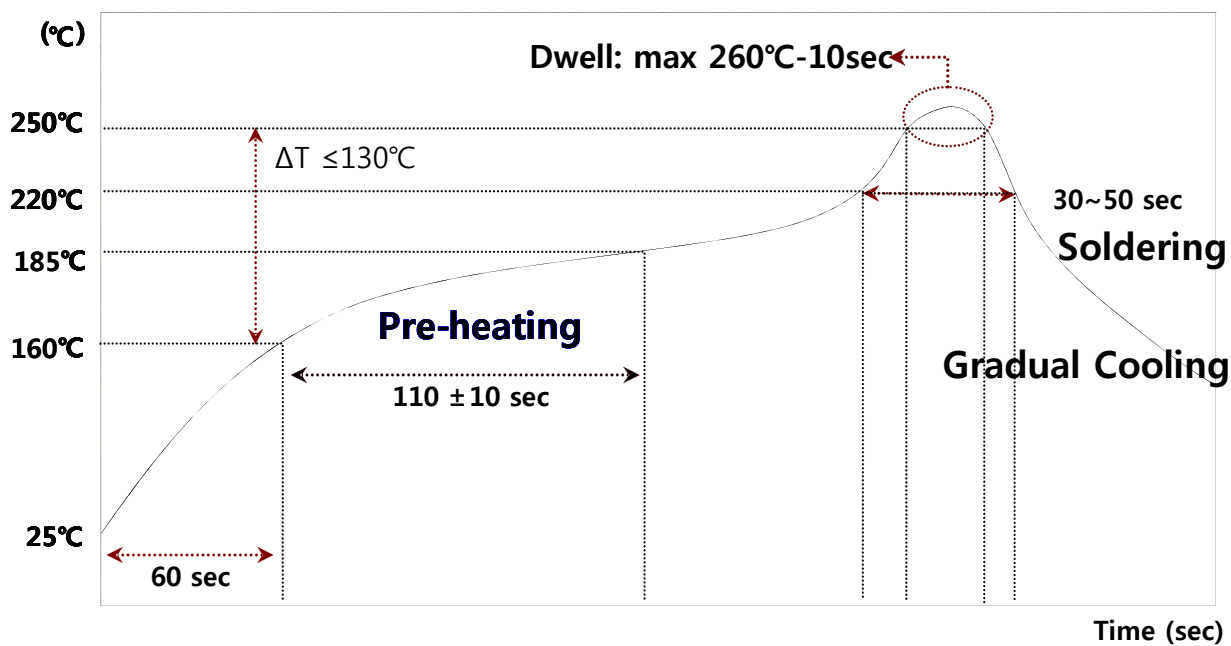
Unit : mm

| Size | A | B | C | D | E |
|------|-----|-----------|-----|-----|----------|
| 2012 | 0.3 | 0.20-0.21 | 0.4 | 1.6 | 2.43±0.2 |

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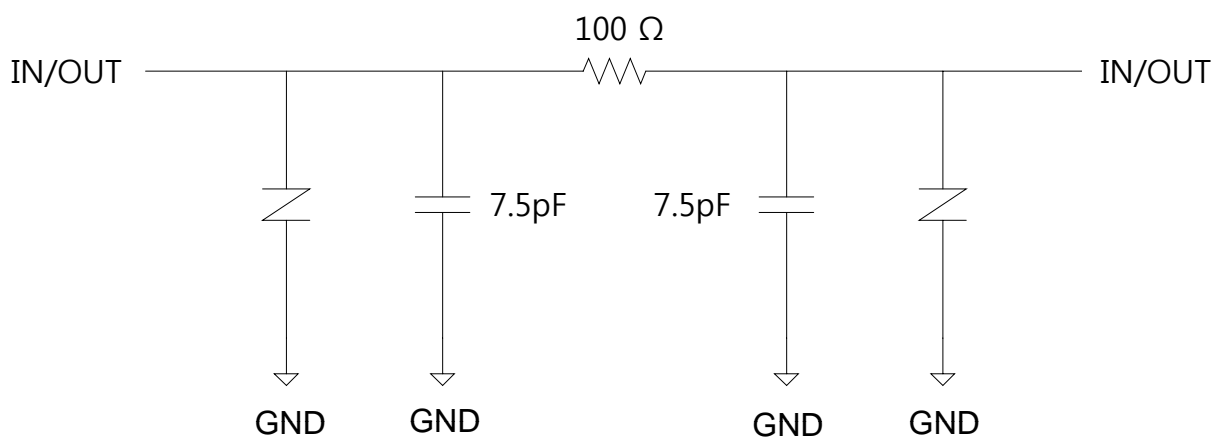
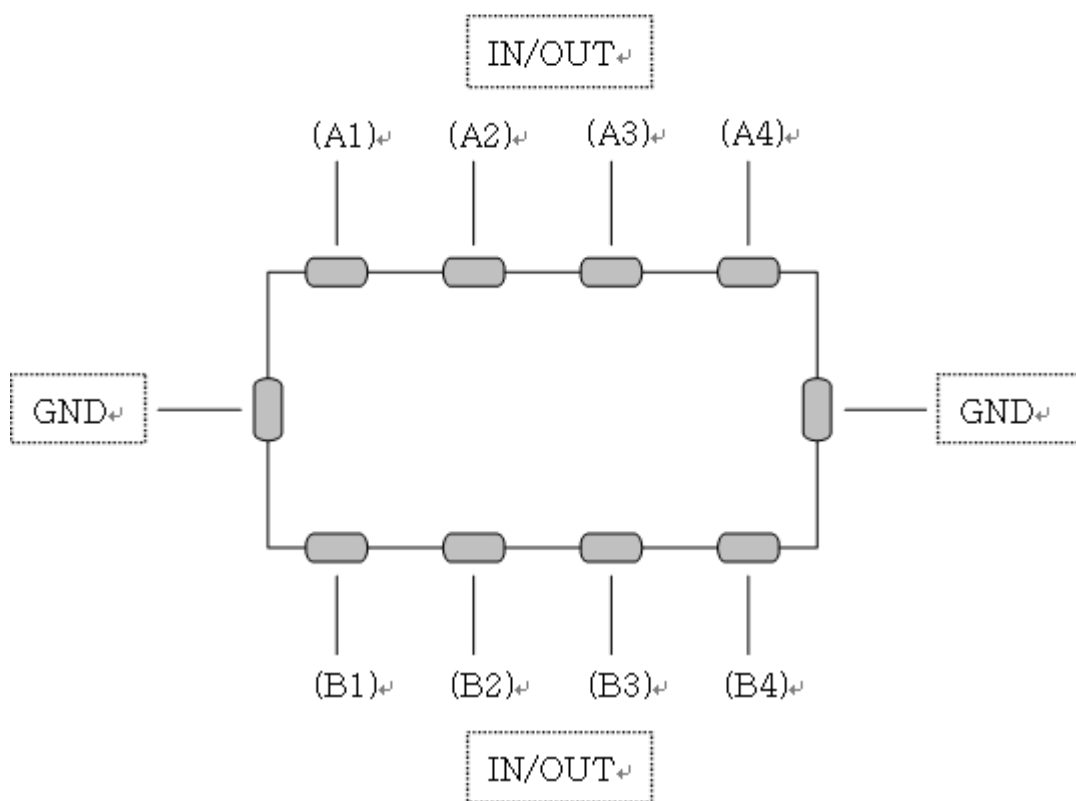
8. Reflow condition

1). Recommended soldering profile (Lead-free condition)



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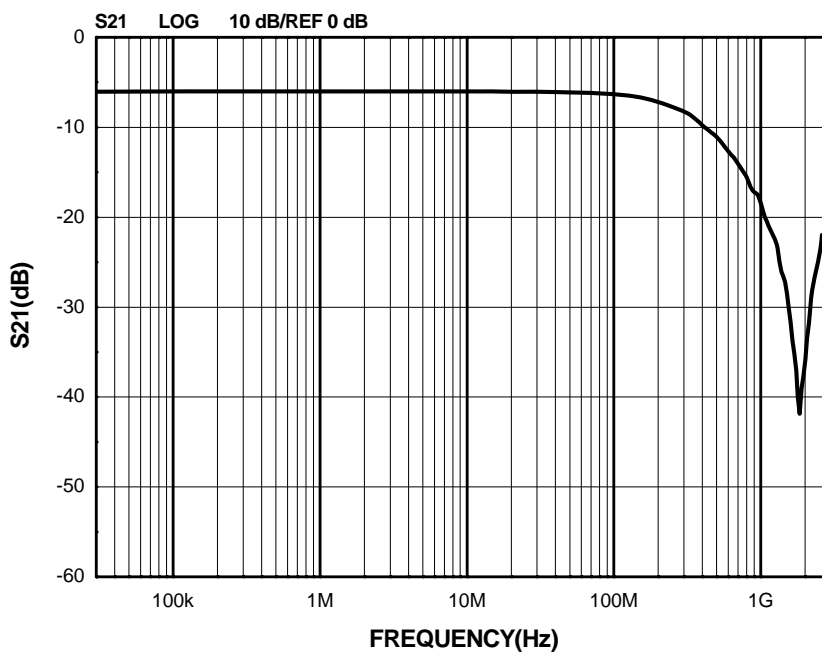
9. ELECTRICAL SCHEMATIC



11. Typical Characteristics

Filter Performance($T_A=25^\circ\text{C}$, DC Bias=0V, 50ohm Environment)

1) A1-B1, A2-B2, A3-B3, A4-B4



2) Cross talking(A1-B2, A2-B3, A3-B4)

