

# 3.7 x 3.1mm Industrial Grade Built-in Capacitance Ceramic Resonator



3.7 x 3.1 x 1.0mm

**AWSCR-CV**

**Pb in ceramic, exemption (7c-I)**

**RoHS/RoHS II compliant**

**Moisture Sensitivity Level (MSL) – This product is not Moisture Sensitive - MSL = 1**

## FEATURES:

- Low resonant impedance
- Built-in load capacitors
- IR reflow capable

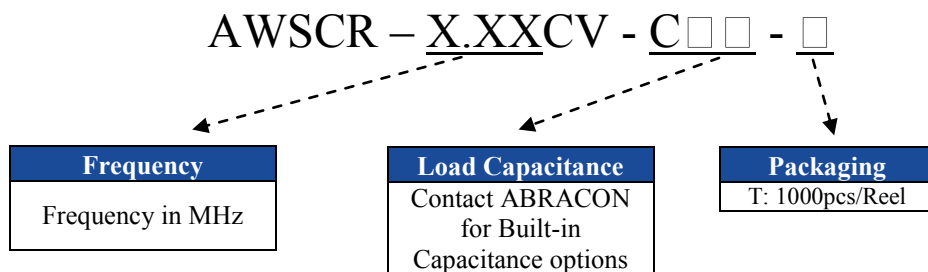
## APPLICATIONS:

- Remote controls, Microprocessor clocks, Mobile phones, DVD & CD-Roms, Electric appliances
- Consumer electronics

## STANDARD SPECIFICATIONS:

| Parameters                            | Minimum          | Typical | Maximum  | Units | Notes                 |
|---------------------------------------|------------------|---------|----------|-------|-----------------------|
| Frequency Range                       | 8.00             |         | 13.00    | MHz   |                       |
|                                       | 16.00            |         | 60.00    |       |                       |
| Resonant Impedance (Ro)               |                  |         | 30       | Ω     | 8.00 MHz – 13.00 MHz  |
|                                       |                  |         | 60       |       | 13.01 MHz – 15.99 MHz |
|                                       |                  |         | 40       |       | 16.00 MHz – 20.00 MHz |
|                                       |                  |         | 40       |       | 20.01 MHz – 25.99 MHz |
|                                       |                  |         | 40       |       | 26.00 MHz – 60.00 MHz |
| Standard Built-in Capacitance (C1=C2) | 22 – 20%         | 22      | 22 + 20% | pF    | 8.00 MHz – 13.00 MHz  |
|                                       | 22 – 20%         | 22      | 22 + 20% |       | 13.01 MHz – 15.99 MHz |
|                                       | 22 – 20%         | 22      | 22 + 20% |       | 16.00 MHz – 20.00 MHz |
|                                       | 10 – 20%         | 10      | 10 + 20% |       | 20.01 MHz – 25.99 MHz |
|                                       | 5 – 20%          | 5       | 5 + 20%  |       | 26.00 MHz – 60.00 MHz |
| Frequency Tolerance @25 °C            | -0.5             |         | 0.5      | %     |                       |
| Frequency Stability @ -25°C to +85°C  | -0.4             |         | 0.4      | %     | 8.00 MHz – 13.00 MHz  |
|                                       | -0.3             |         | 0.3      |       | 13.01 MHz – 60.00 MHz |
| Withstanding Voltage                  |                  | 50      |          | V     | DC , 1 min            |
| Rating Voltage                        | (1) D.C. Voltage |         | 6        | V     |                       |
|                                       | (2) A.C. Voltage |         | 15       | Vp-p. |                       |
| Insulation Resistance                 | 100              |         |          | MΩ    | 10V, 1min             |
| Operation Temperature                 | -25              |         | 85       | °C    |                       |
| Storage Temperature                   | -55              |         | 85       | °C    |                       |
| Aging Rate (Fosc) (10 years)          | -0.3             |         | 0.3      | %     |                       |

## OPTIONS AND PART IDENTIFICATION:



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3.7 x 3.1 x 1.0mm

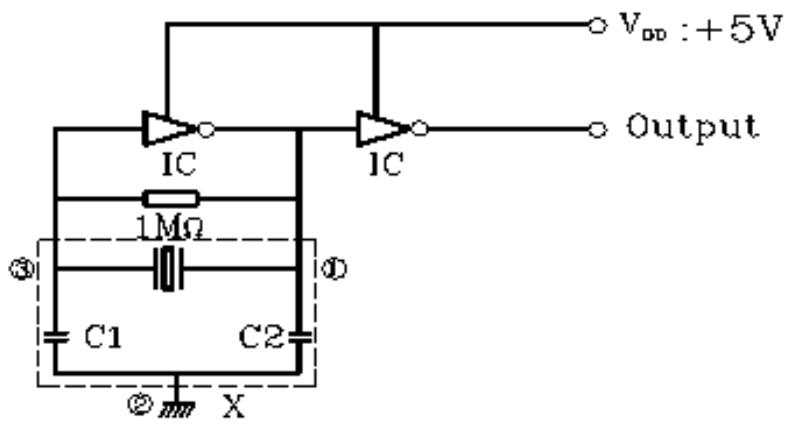
**AWSCR-CV**

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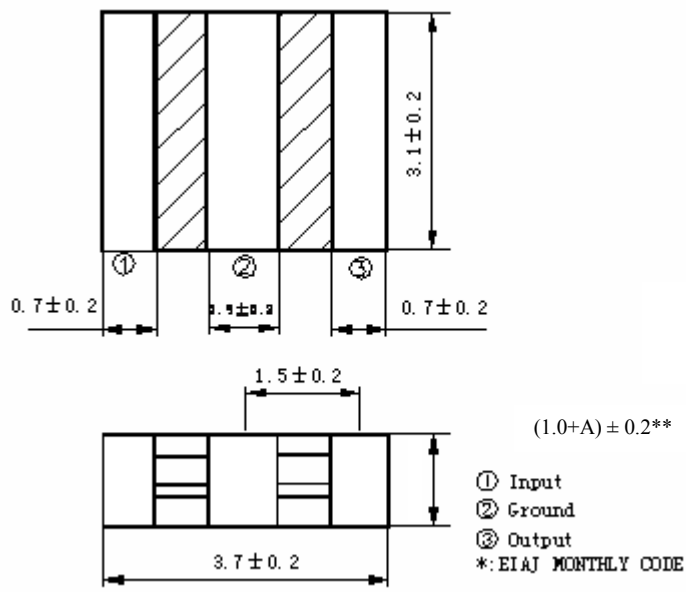
## TEST CIRCUIT:

Parts shall be measured under a condition (Temp.: 20±15°C, Humidity: 65±20% R.H.) unless the standard condition (Temp: 25±3°C, Humidity: 65±10% R.H.) is regulated to measure



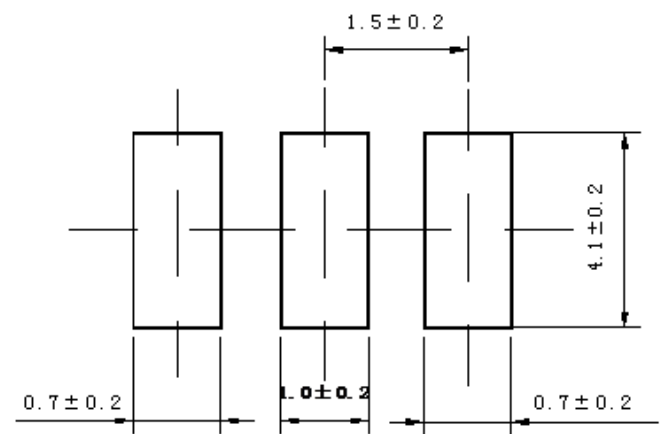
- X: Ceramic Resonator  
 1. Input  
 2. Ground  
 3. Output

## OUTLINE DRAWING:



\*\* A stands for the thickness of the ceramic element, which varies with the frequency

## Recommended Land Pattern



**Dimension: mm**

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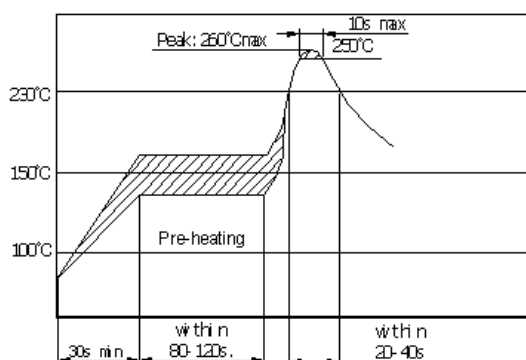
3.7 x 3.1 x 1.0mm

AWSCR-CV

Pb in ceramic, exemption (7c-I)

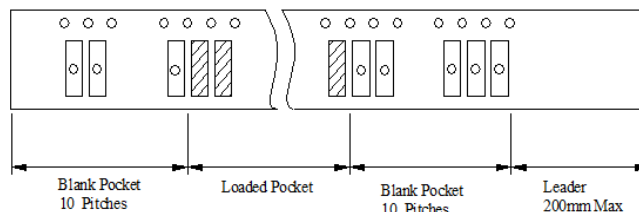
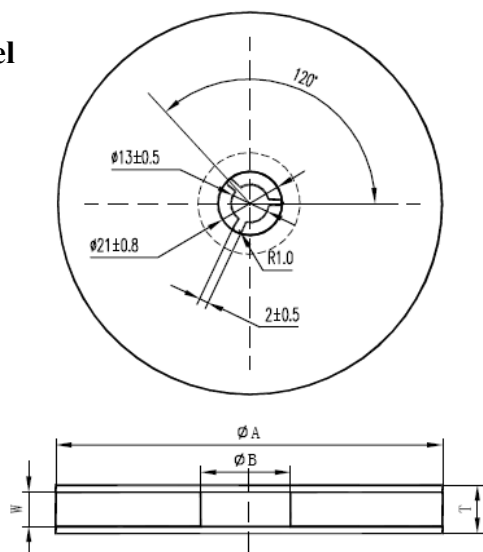
RoHS/RoHS II compliant

## SUGGESTED REFLOW:



## TAPE & REEL:

**Packaging:**  
**T: 1000pcs/Reel**



| Reel Quantity | $\Phi A$ | $\Phi B$ | W        | T        | Pieces per reel | Carrier tape size |
|---------------|----------|----------|----------|----------|-----------------|-------------------|
| 1000 (T)      | 180±3    | 60 min.  | 12.4 min | 19.4 max | 1000 typ.       | 12                |

**Note: upon opening the original packaging, it is recommended that the product be used within 1 year. If the product will not be used within 1 year, it is recommended that the product be re-sealed in airtight packaging according to MSL 1 requirements to maintain solderability.**

**Dimensions: mm**

## CAUTION:

- Do not apply excess mechanical stress to the component body or terminations. Do not attempt to re-form or bend the components as this will cause damage to the component.
- This component is not hermetically sealed. Do not clean or wash the component.
- Reflow Soldering: Do not use strong acidity flux, such as flux with chlorine content of greater than 0.2wt% during Reflow Soldering.
- Do not expose the component to open flame.
- This specification applies to the functionality of the component as a single unit.
- Storage Conditions: If the product is to be stored for a period greater than Six Months after the Delivery Date, it is recommended that customers confirm the solderability and characteristics for the product prior to use.
- This product is not recommended for use in the following applications: Automotive, Medical, Military, Safety, or any other high-reliability, life dependant applications. Contact Abracon Corporation prior to using this product when in doubt.

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