

# Miniature Ceramic Resonator



AWSCR-CVLB

3.7 x 3.1 x 1.0 mm

RoHS/RoHS II Compliant

Pb in ceramic, exemption (7c-I)

This product is not Moisture Sensitive - MSL = 1

## Features

- Industry standard footprint
- Low resonance impedance
- Built-in capacitance options
- Wide operating temperatures in extended industry range

## Applications

- Metering systems
- Remote control
- Microprocessor
- Industrial control
- Electric appliances

## Electrical Specifications

Parameters	Min	Typ.	Max	Units	Notes
Oscillating Frequency (Fosc)	8.000		13.000	MHz	
Frequency Tolerance	-0.5		0.5	%	
Resonant Impedance (Ro)			30	$\Omega$	
Standard Built-in Capacitance (C1=C2)		22		pF	
	Other options : 10/15/30/33/35/39				
Temperature Coefficient of Oscillation Frequency (%) max.	-0.5		0.5	%	Oscillator Frequency drift (-40 °C to +125 °C)
Withstanding Voltage			50	V	DC, 1 min.
Voltage Rating	(1) D.C. Voltage		6	V	
	(2) A.C. Voltage		15	Vp-p	
Insulation Resistance (Ri)	500			M $\Omega$	10V, 1 min.
Operation Temperature	-40		+125	°C	
Storage Temperature	-55		+125	°C	
Aging Rate max (Fosc) * For 10 years	-0.3		0.3	%	From Initial value

\* Components shall be left in a chamber of +85 °C  $\pm$  2 °C for 1000 hours, then measured after leaving in natural condition for 1 hour.

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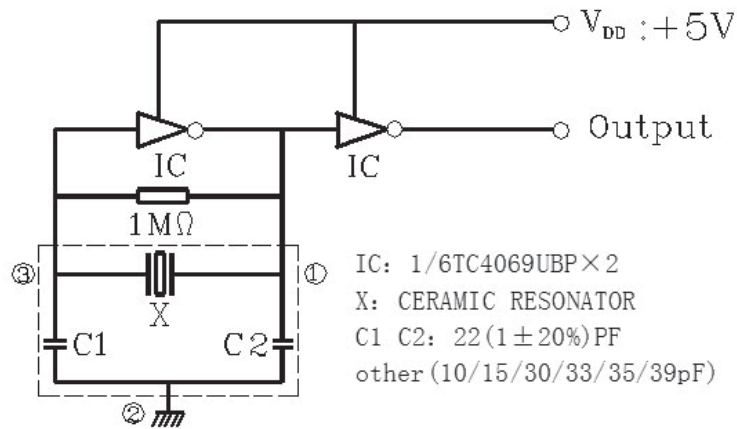
## Options and Part Identification

AWSCR - .  CVLB - C  -

Frequency (MHz)	Size (mm)	Frequency Band	Operating Temperature	Built-in Cap	Packaging
8.000 - 13.000	CV = 3.7 x 3.1	L = Lower Band	B = -40 °C to 125 °C	22 pF (Standard) 10/15/30/33/35/ 39 pF (Other)	T = 1000 pcs/reel

## Test Circuit and Conditions

Parts shall be tested under the condition (Temp: 20 °C ± 15 °C, Humidity: 65 ± 20 % R.H.) unless the standard condition (Temp: 25 °C ± 3 °C, Humidity: 65 ± 5 % R.H.) is regulated to measure.



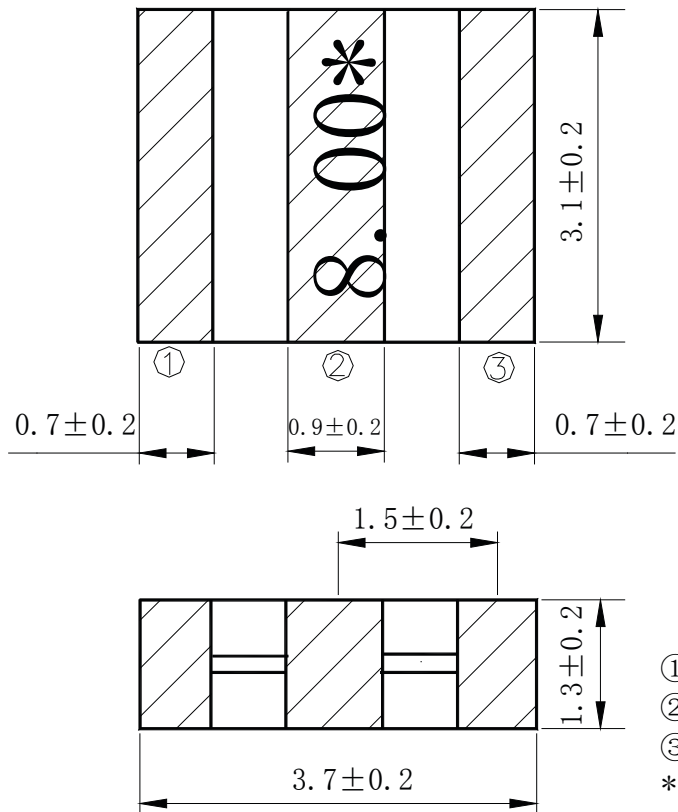
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## Outline Dimensions



Unit: mm

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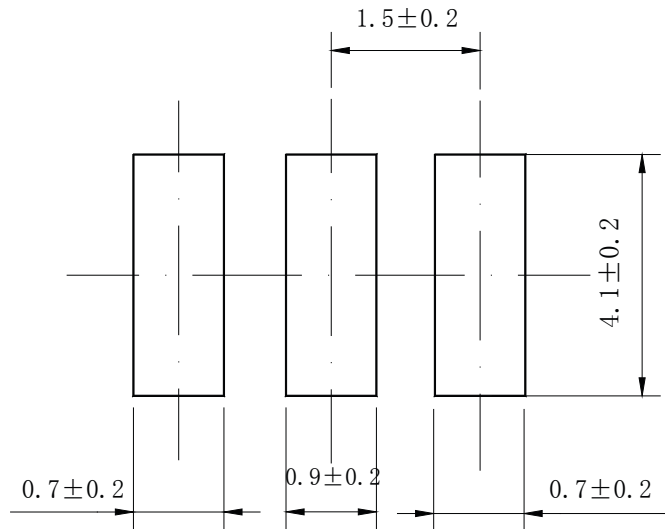
3.7 x 3.1 x 1.0 mm

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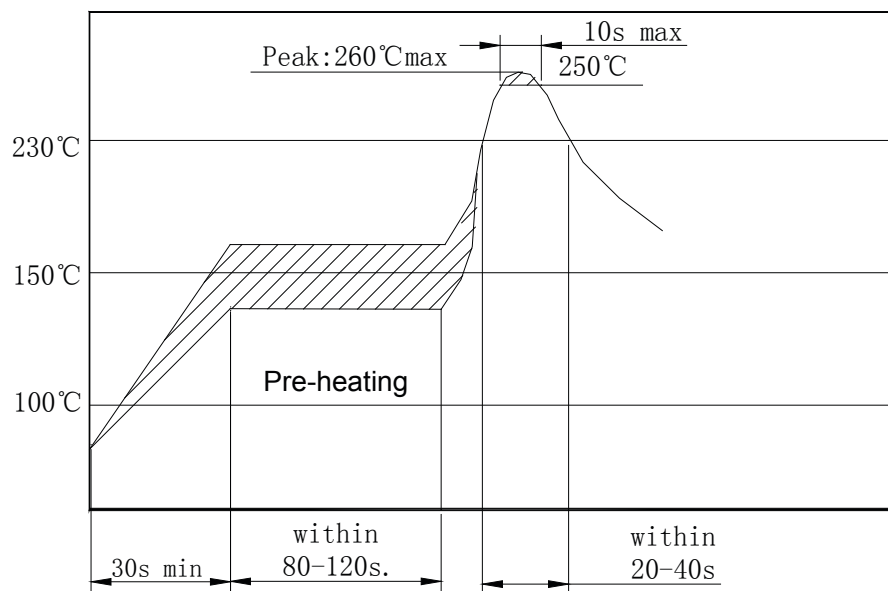
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## Recommended Land Pattern



Unit: mm

## Recommended Reflow Profile



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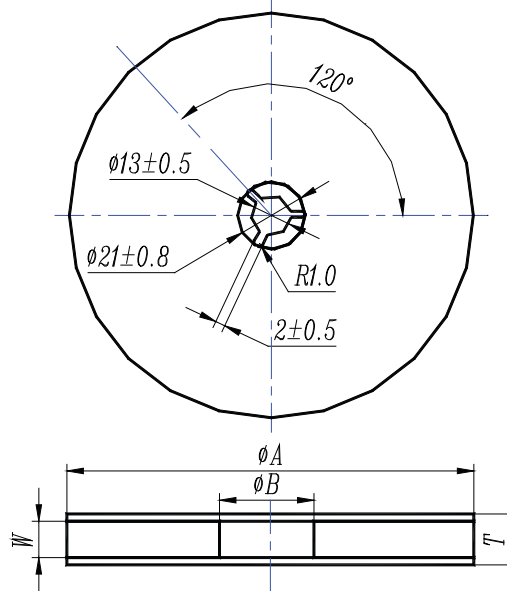
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## Packaging

T: 1000 pcs/reel

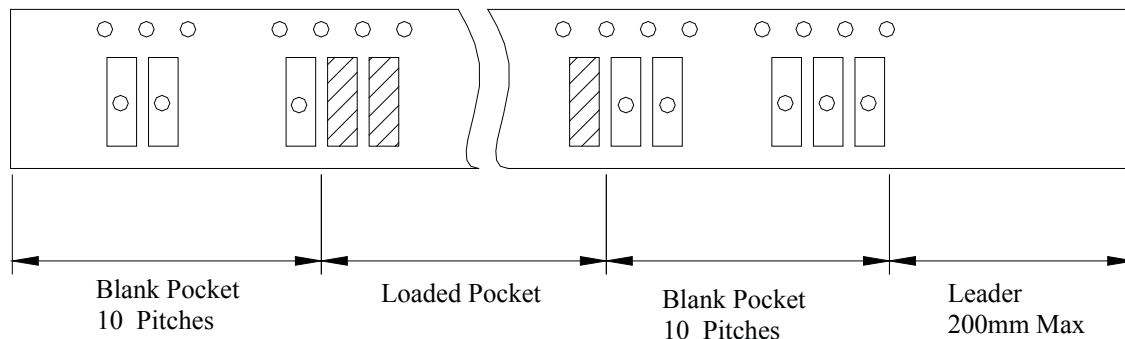
### Reel Dimension



Unit: mm

$\phi A$	$\phi B$	W	T	Pieces per reel	Carrier tape size
180 ± 3	60 min	12.4 min	19.4 max	1000 typ.	12

### Packaging Sketch



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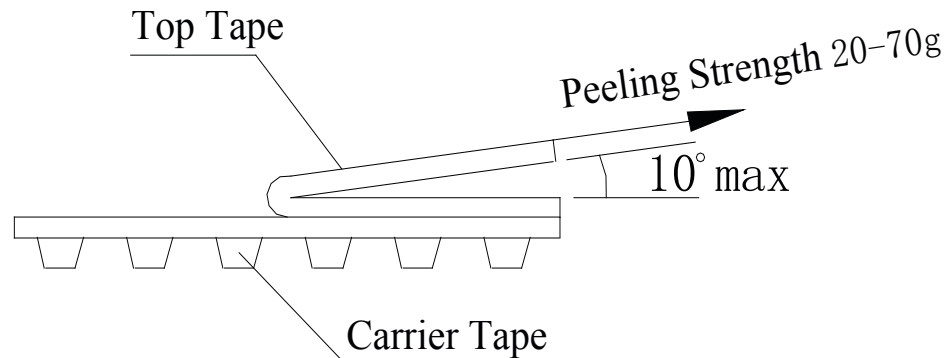
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## Packaging

### Test Condition for Peel-Off Strength



## Caution

1. Don't apply excess mechanical stress to the component and terminals at soldering. Do not use this product with bend.
2. Do not clean or wash the component for it is not hermetically sealed.
3. Do not use strong acidity flux, more than 0.2 wt% chlorine content, in flow soldering.
4. Don't be close to fire.
5. This specification mentions the quality of the component as a single unit. Please ensure the component is thoroughly evaluated in your application circuit.
6. Expiry date (Shelf life) of the products is 12 months after delivery under the conditions of a sealed and an unopened package. Please use the products within 12 months after delivery. If you store the products for a long time (more than 12 months), use carefully because the products may be degraded in the solderability or rusty. Please confirm solderability and characteristics for the products regularly.

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