



- ► Chip Type SMD package
- ► RoHS Compliant (Note 7 Exemption)
- Built-in load capacitor
- ► Tape & Reel Packaging

# ECS-CR2-B

# **SMD CERAMIC RESONATOR**

The ECS-CR2-B Chip Type SMD ceramic resonator includes built in capacitors for reduced component count. The SMD Ceramic resonator is an excellent low cost frequency control solution when absolute frequency accuracy is not important.

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PART NUMBER *	FREQUENCY RANGE ACCURACY (MHz) @ 25°C (%)		FREQUENCY STABILITY -20 ~ +80°C (%)	AGING FOR TEN YEARS (%)	ESR (Ω) MAX.	BUILT-IN CAPACITANCE (C1 & C2)	INSULATION RESISTANCE @ 10VDC	
ECS-CR2-□□.□□ <b>-</b> B	8.00 ~ 13.00	± 0.5	± 0.3	± 0.3	25	30 pF	100 M Ω Min.	
ECS-CR2-□□.□□-B	13.10 ~ 40.00	± 0.5	± 0.3	± 0.3	40	15 pF	100 M Ω Min.	

Complete part number to include frequency i.e. ECS-CR2-20.00-B-TR

## PACKAGE DIMENSIONS (mm)

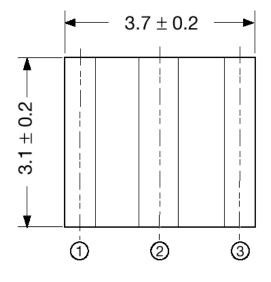
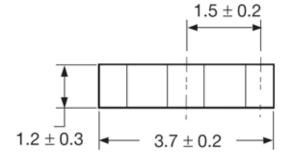


Figure 1) ECS-CR2-B Series - Top and Side Views



PIN CONNECTIONS					
#1	In/Out				
#2	Ground				
#3	Out/In				

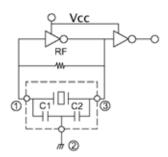


Figure 2) Test Circuit (74HCU04P)

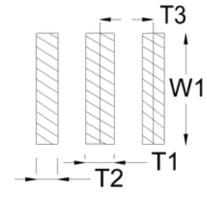


Figure 3) Land Pattern

DIMENSIONS (mm)									
T1 T2		Т3	W1						
0.7 ± 0.2	1.0±0.2	1.5±0.2	4.1±0.2						

PART NUMBERING GUIDE: "Example" ECS-CR2-20.00-B-TR

CR2 = 8 ~ 13 MHz CR2 = 13.1 ~ 40 MHz Frequency | |20.00 = 20.00 MHz

B = Built In Caps

Version

- Packaging

|
TR = Tape & Reel



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### CERAMIC RESONATOR/FILTER

#### Application Information Request

**Attention:** All Customers

From: Mike Huennekens, Director of Marketing and OEM Sales

Subject: Ceramic Resonator Application Information Request

Disallowed:

Date:

Approved:

ECS is requesting that you complete the section below that will allow us to determine if the specific application is suitable for the ceramic resonator/filters that you have requested.

Ceramic Resonators/Filters, both surface mount and through-hole type, are a much different frequency control solution than that of a crystal based device. Not only are there "matching" issues to specific integrated circuits and processors with ceramic based piezoelectric components but for multiple reasons ceramics are not the most advantageous nor robust frequency control solution for certain applications.

In addition, ECS does not approve the use of its ceramic products in Automotive, Military, Avionics, Life Sustaining or Life Support systems or any other related medical application.

# If the customer chooses to use this product in one or more of the noted applications without the written consent of ECS, Inc., ECS, Inc. shall be held harmless, and given release of liability and indemnification from claims of any nature.

Please complete the following and submit this form as soon as possible.

To be completed by ECS Inc., International											
Signature	Date										
Title											
Print You	ır Name										
Company Name			** If this item will be used by a 3 <sup>rd</sup> party a form be completed and signed by a								
	that the above information is true a sed in the restricted applications not		to the b	est of my l	knowled	dge and ac	knowledge	that EC	S will b	e held ha	rmless if this
	Application Details  You Must Be Specific or this may be returned for more information.										
	End Customer										
	Has this part been ordered previously for this application?	Yes 🗌	No								
	Has this part already been approved for this application?	Yes 🗌	No								
	Estimated Annual Usage										
	ECS Part Number										

Please direct any further inquires to Brad Slatten at <a href="mailto:brads@ecsxtal.com">brads@ecsxtal.com</a> or Carla Williams at <a href="mailto:carlaw@ecsxtal.com">carlaw@ecsxtal.com</a>. We thank you for your understanding and patience in this process.

Approved By: