



- ▶ 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 (MHz)	FREQUENCY ACCURACY @ 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	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)

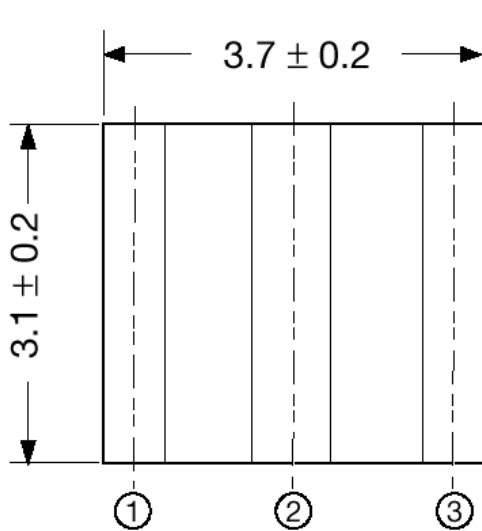


Figure 1) ECS-CR2-B Series - Top and Side Views

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

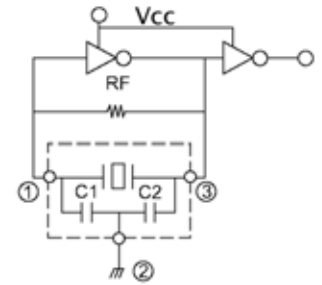


Figure 2) Test Circuit (74HCU04P)

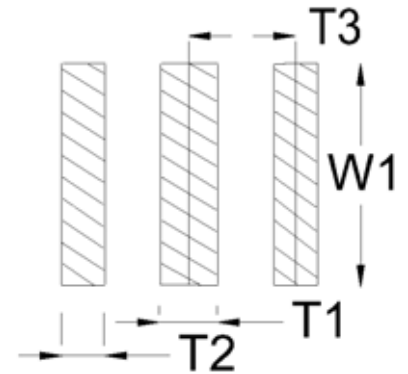
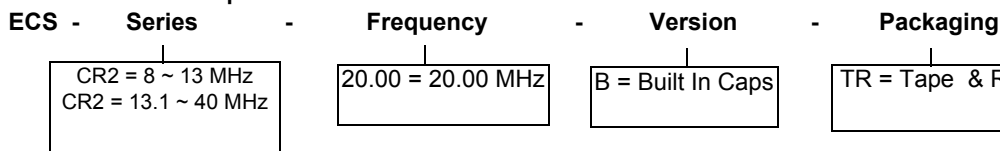


Figure 3) Land Pattern

DIMENSIONS (mm)			
T1	T2	T3	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





ECS, Inc. International  
 1105 South Ridgeview Road  
 Olathe, KANSAS, 66062 USA  
[www.ecsxtal.com](http://www.ecsxtal.com)  
 913-782-7787  
 1-800-237-1041  
 Fax: 913-782-6991

May 16, 2007

Mike Huennekens  
 Director of Marketing and OEM Sales  
 E-mail: [mikeh@ecsxtal.com](mailto:mikeh@ecsxtal.com)  
 Phone: 1-800-237-1041

**C E R A M I C   R E S O N A T O R / F I L T E R**

**Application Information Request**

**Attention:** All Customers

**From:** Mike Huennekens, Director of Marketing and OEM Sales

**Subject:** Ceramic Resonator Application Information Request

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.*

ECS Part Number	
Estimated Annual Usage	
Has this part already been approved for this application?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Has this part been ordered previously for this application?	Yes <input type="checkbox"/> No <input type="checkbox"/>
End Customer	
<p style="text-align: center;"><b>Application Details</b>  <u>You Must Be Specific</u> or this may be returned for more information.</p>	

I certify that the above information is true and correct to the best of my knowledge and acknowledge that ECS will be held harmless if this item is used in the restricted applications noted above.

\_\_\_\_\_  
 Company Name

\_\_\_\_\_  
 Print Your Name

\_\_\_\_\_  
 Title

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Date

\*\* If this item will be used by a 3<sup>rd</sup> party ECS may require a form be completed and signed by all parties.

<b>To be completed by ECS Inc., International</b>			
Approved: <input type="checkbox"/>	Disallowed: <input type="checkbox"/>	Date: _____	Approved By: _____

Please direct any further inquires to Brad Slatten at [brads@ecsxtal.com](mailto:brads@ecsxtal.com) or Carla Williams at [carlaw@ecsxtal.com](mailto:carlaw@ecsxtal.com) . We thank you for your understanding and patience in this process.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.