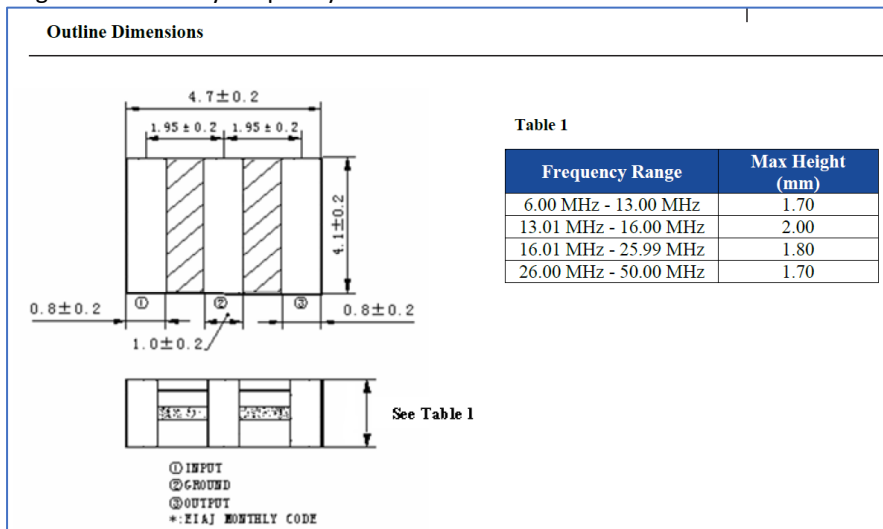


ECN/PCN No.: 4100

For Manufacturer		
Product Description: 4.7X4.1MM CERAMIC RESONATOR	Abracon Part Number / Part Series: AWSCR-MTD	<input type="checkbox"/> Documentation only <input checked="" type="checkbox"/> Series <input checked="" type="checkbox"/> ECN <input type="checkbox"/> Part Number <input type="checkbox"/> EOL
Affected Revision: I	New Revision: J	Application: <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Non-Safety

Prior to Change:
No height dimension included.

After Change:
Height dimension by frequency included:



Cause/Reason for Change:
Product height dimension should be included on the datasheet.

Change Plan

Effective Date: 03/31/2022	Additional Remarks: N/A
--------------------------------------	-----------------------------------

Change Declaration:
There is no impact on the electrical or mechanical performance of the device. The height dimension is simply displayed on the datasheet now.

Issued Date: 03/31/2022	Issued By: <i>Brooke Cushman</i> Product Engineer	Issued Department: Engineering
Approval: <i>Thomas Culhane</i> Engineering Director	Approval: <i>Reuben Quintanilla</i> Quality Director	Approval: <i>Ying Huang</i> Purchasing Director

For Abracon EOL only

Last Time Buy (if applicable): N/A	Alternate Part Number / Part Series: N/A	
Additional Approval: N/A	Additional Approval: N/A	Additional Approval: N/A

Customer Approval (If Applicable)**Qualification Status:** Approved Not accepted*Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.***Customer Part Number:****Customer Project:****Company Name:****Company Representative:****Representative Signature:****Customer Remarks:**

4.7x4.1mm CERAMIC RESONATOR

AWSCR-MTD

Request Samples



Check Inventory



4.7 x 4.1 x 2.0 mm
RoHS/RoHS II Compliant
MSL Level = 1



Features

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

Applications

- Remote controls
- Microprocessor clocks
- Mobile phones
- Electric appliances
- Industrial controllers
- Consumer electronics

Key Electrical Specifications

Parameters	Minimum	Typical	Maximum	Unite	Notes
Frequency Range	6.00		60.00	MHz	
Resonant Impedance (Ro)			30	Ω	6.00 MHz – 13.00 MHz
			40		13.01 MHz – 16.00 MHz
			40		16.01 MHz – 25.99 MHz
			40		26.00 MHz – 60.00 MHz
Standard Built-in Capacitance (C1=C2)	22 – 20%	22	22 + 20%	pF	6.00 MHz – 13.00 MHz
	22 – 20%	22	22 + 20%		13.01 MHz – 16.00 MHz
	10 – 20%	10	10 + 20%		16.01 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	%	6.00 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	%	

4.7x4.1mm CERAMIC RESONATOR

AWSCR-MTD

Request Samples



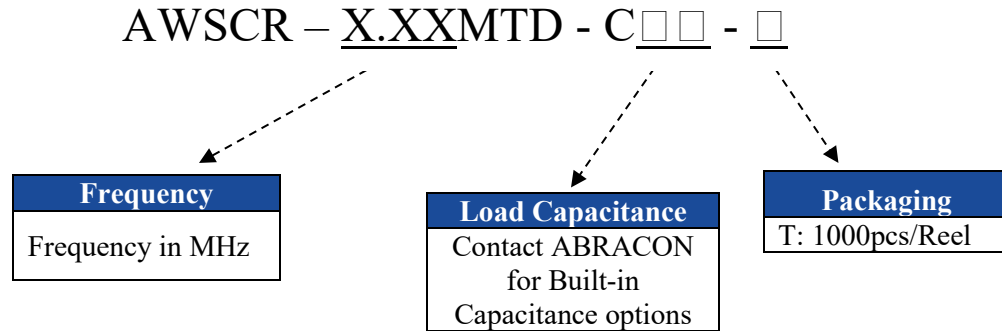
Check Inventory



4.7 x 4.1 x 2.0 mm
RoHS/RoHS II Compliant
MSL Level = 1

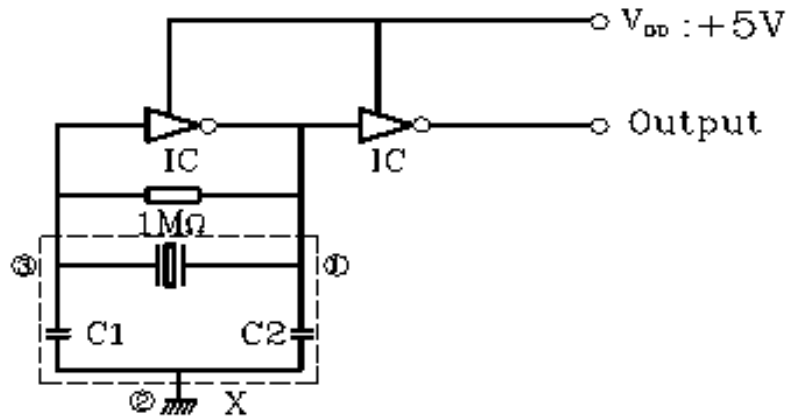


Options and Part Identification



Test Conditions and 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

4.7x4.1mm CERAMIC RESONATOR

AWSCR-MTD

Request Samples



Check Inventory



4.7 x 4.1 x 2.0 mm
RoHS/RoHS II Compliant
MSL Level = 1



Reflow Profile [JEDEC J-STD-020]

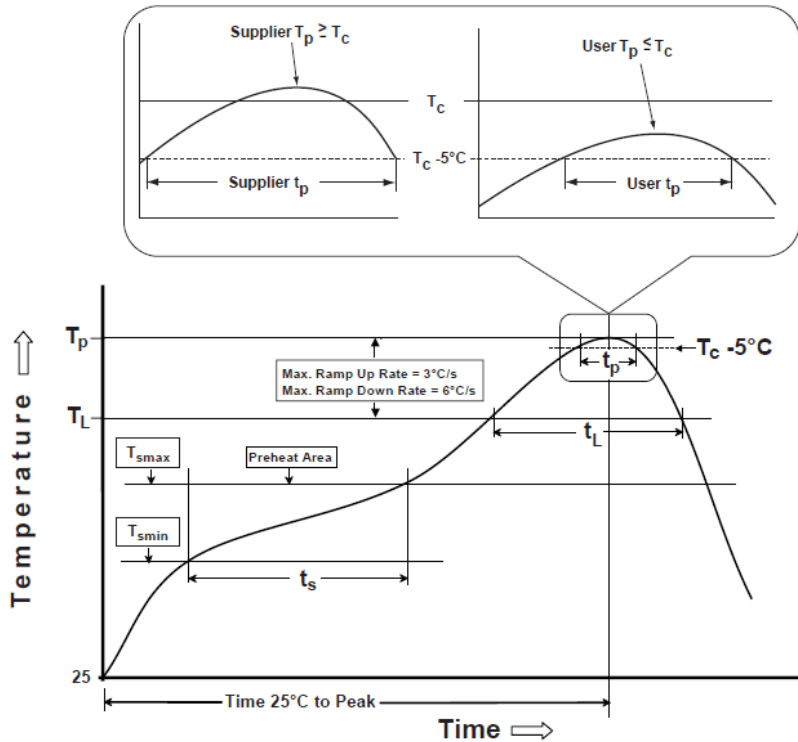


Table 1

SnPb Eutectic Process Classification Temperatures (T_c)		
Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

Pb-Free Process Classification Temperatures (T_c)			
Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 sec.
Peak package body temperature (T_p)*	see Table 1	see Table 2
Time (t_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as supplier minimum and a user maximum.

4.7x4.1mm CERAMIC RESONATOR

AWSCR-MTD

Request Samples



Check Inventory



4.7 x 4.1 x 2.0 mm
 RoHS/RoHS II Compliant
 MSL Level = 1



Outline Dimensions

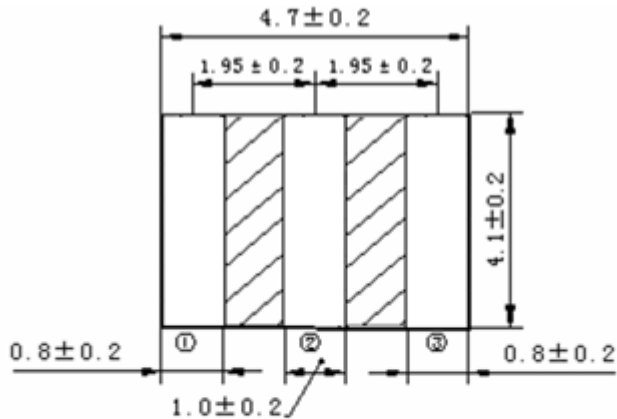
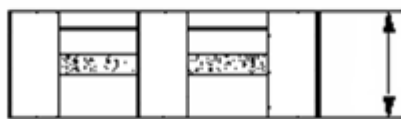


Table 1

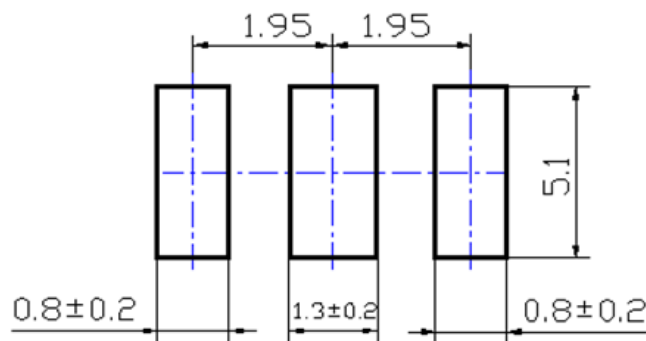
Frequency Range	Max Height (mm)
6.00 MHz - 13.00 MHz	1.70
13.01 MHz - 16.00 MHz	2.00
16.01 MHz - 25.99 MHz	1.80
26.00 MHz - 50.00 MHz	1.70



See Table 1

- ① INPUT
- ② GROUND
- ③ OUTPUT
- *: EIAJ MONTHLY CODE

Recommended Land Pattern



Dimension: mm

4.7x4.1mm CERAMIC RESONATOR

AWSCR-MTD

Request Samples



Check Inventory

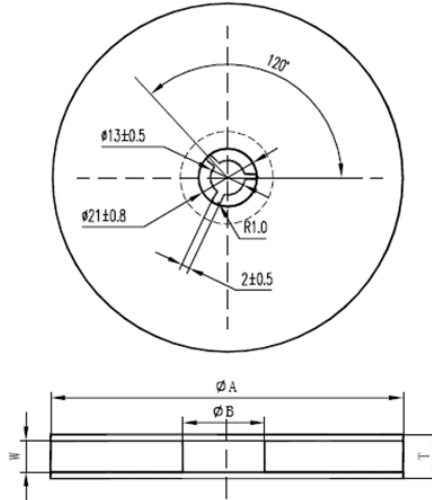


4.7 x 4.1 x 2.0 mm
 RoHS/RoHS II Compliant
 MSL Level = 1

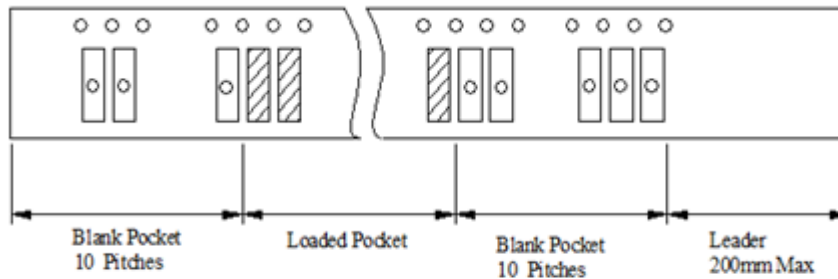


Packaging

T: 1000pcs/Reel



ϕA	ϕB	W	T	Pieces Per Reel	Carrier Tape Size
180 \pm 3	60min	12.4 min	19.4 max	1000 typ.	12



Dimensions: mm

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 solder ability.

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REVISED: 02-18-22

ABRACON IS
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 CERTIFIED

brand		series	eco#
abracon	AWSCR-10.00MTD	AWSCR-MTD	4100
abracon	AWSCR-10.00MTD-C30-T	AWSCR-MTD	4100
abracon	AWSCR-11.06MTD-C22	AWSCR-MTD	4100
abracon	AWSCR-12.00MTD	AWSCR-MTD	4100
abracon	AWSCR-12.00MTD-C30	AWSCR-MTD	4100
abracon	AWSCR-12.00MTD-C30-T	AWSCR-MTD	4100
abracon	AWSCR-12.00MTD-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-13.56MTD	AWSCR-MTD	4100
abracon	AWSCR-13.56MTD-C30-T	AWSCR-MTD	4100
abracon	AWSCR-13.56MTD-T	AWSCR-MTD	4100
abracon	AWSCR-14.75MTD	AWSCR-MTD	4100
abracon	AWSCR-14.75MTD-C10	AWSCR-MTD	4100
abracon	AWSCR-14.75MTD-T	AWSCR-MTD	4100
abracon	AWSCR-16.00MTD	AWSCR-MTD	4100
abracon	AWSCR-16.00MTD-T	AWSCR-MTD	4100
abracon	AWSCR-16.00MTDM	AWSCR-MTD	4100
abracon	AWSCR-16.00MTDM-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-20.00MTD	AWSCR-MTD	4100
abracon	AWSCR-20.00MTD-C10-T	AWSCR-MTD	4100
abracon	AWSCR-20.00MTD-T	AWSCR-MTD	4100
abracon	AWSCR-24.00MTD	AWSCR-MTD	4100
abracon	AWSCR-24.00MTD-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-25.00MTD	AWSCR-MTD	4100
abracon	AWSCR-25.00MTD-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-32.00MTD	AWSCR-MTD	4100
abracon	AWSCR-32.00MTD-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-40.00MTD-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-48.00MTD	AWSCR-MTD	4100
abracon	AWSCR-48.00MTD-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-50.00MTD	AWSCR-MTD	4100
abracon	AWSCR-50.00MTD-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-8.00MTD	AWSCR-MTD	4100
abracon	AWSCR-8.00MTD-C22-T	AWSCR-MTD	4100
abracon	AWSCR-8.00MTD-C27	AWSCR-MTD	4100
abracon	AWSCR-8.00MTD-C30	AWSCR-MTD	4100
abracon	AWSCR-8.00MTD-C30-T	AWSCR-MTD	4100
abracon	AWSCR-8.00MTD-T (1K/REEL)	AWSCR-MTD	4100
abracon	AWSCR-MTD-101-25.00MHZ-T	AWSCR-MTD	4100