

Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510



AEC Electronics Company Limited.
PRODUCT SPECIFICATION

Ceramic Filter

AEC PART NUMBER / SPEC. NO: ACLTCS10.7BW510

CUSTOMER: _____



This model is ROHS compliance according to the ROHS directive 2002/95/EC

Customer's Name	
Production Name	Ceramic Filter
Frequency	10.7MHz
Model No	ACLTCS10.7BW510
Issue Date	21 st March, 2023

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 128 Java Road,
 North Point, Hong Kong
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Prepared	Inspection	Approved
<i>Nathan</i>	<i>Andy</i>	<i>Henkie</i>

Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510

1. SCOPE

This specification shall cover the characteristics of the ceramic filter with the type ACLTCS10.7BW510.

2. PART NO.

ACLTCS10.7BW510

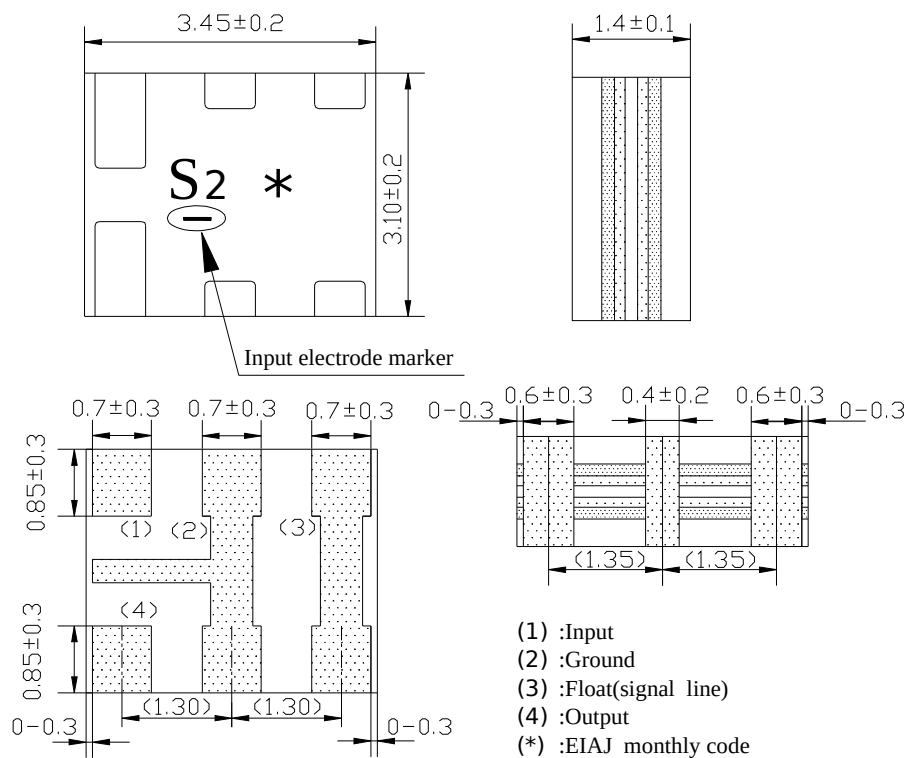
3. OUTLINE DIMENSIONS AND MARK

3.1 Appearance: No visible damage and dirt.

3.2 Construction: SMD ceramic packaging.

3.3 The products conform to the RoHS directive and national environment protection law.

3.4 Dimensions and mark



Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510

4 ELECTRICAL SPECIFICATIONS

4.1 RATING

Items	Content
Withstanding Voltage (V) max.	50 (DC, 1min)
Insulation Resistance Ri, (MΩ) min.	100 (10V, 1min)
Operating Temperature Range (°C)	-20 ~ +80
Storage Temperature Range (°C)	-40 ~ +85

4.2 ELECTRICAL SPECIFICATIONS

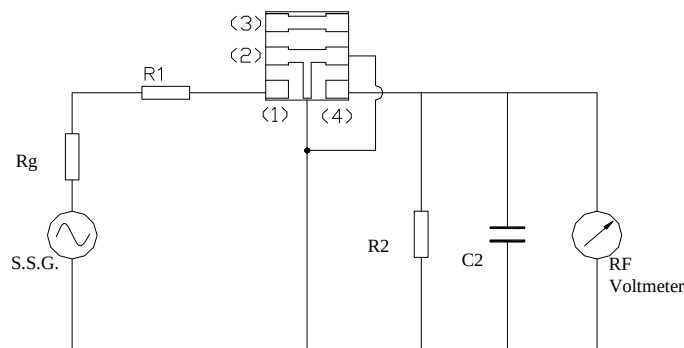
Items	Content
Center Frequency(fo)(MHz)	10.700±0.030
3dB Bandwidth(kHz)	230±50
20dB Bandwidth(kHz) max	510
Insertion Loss (dB) (at minimum loss point)	3.5±2.0
Ripple (dB) max (within 3dB Bandwidth)	1.0
Spurious Response (dB) min(9MHz-12MHz)	30
Input/Output Impedance(Ω)	330
Temp. Characteristic	±0.5% (-20°C to 80°C)

5. TEST

5.1 Test Conditions

Parts shall be tested under the condition (Temp.: 20±15°C, Humidity : 65±20% R.H.) unless the standard condition (Temp.: 25±2°C, Humidity : 65±5% R.H.) is regulated to measure.

5.2 Test Circuit



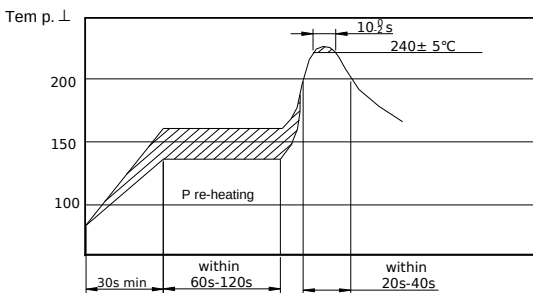
C2=10pF(Including stray capacitance and capacitance of RF Voltmeter)

S.S.G: Output Voltmeter

:Input :Ground :Float :Output

Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510

6. ENVIRONMENTAL TEST

No.	Item	Condition of Test	Performance Requirement						
6.1	Humidity	Subject the filter at $40\pm 2^{\circ}\text{C}$ and 90%-95% R.H. for 96h, Filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.						
6.2	High Temperature Exposure	Subject the filter to $85\pm 2^{\circ}\text{C}$ for 96h, Filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.						
6.3	Low Temperature Exposure	Subject the filter to $-40\pm 2^{\circ}\text{C}$ for 96h, Filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.						
6.4	Temperature Cycling	After temperature cycling of blow table was performed 5 times, Filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.						
		<table border="1"> <thead> <tr> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>$-20\pm 3^{\circ}\text{C}$</td> <td>30 ± 3 min</td> </tr> <tr> <td>$80\pm 3^{\circ}\text{C}$</td> <td>30 ± 3 min</td> </tr> </tbody> </table>		Temperature	Time	$-20\pm 3^{\circ}\text{C}$	30 ± 3 min	$80\pm 3^{\circ}\text{C}$	30 ± 3 min
		Temperature		Time					
$-20\pm 3^{\circ}\text{C}$	30 ± 3 min								
$80\pm 3^{\circ}\text{C}$	30 ± 3 min								
6.5	Vibration	Subject the filter to vibration for 2h. Each in x y and z axis with the amplitude of 1.5mm, The frequency shall be varied uniformly between the limits of 10Hz-55Hz-10Hz and then filter shall be measured.	It shall fulfill Table 1.						
6.6	Mechanical Shock	Filter shall be measured after 3 times random dropping from the height of 1m on the wooden plate.	No visible damage and it shall fulfill Table 1.						
6.7	Soldering Test	<p>Passed through the reflow oven under the following condition, and left at room temp. for 24 hours before measurement.</p>  <p>The graph shows a temperature profile starting at 100°C. It includes a pre-heating phase (shaded area) with a duration of 30s min. The temperature then rises to a peak of $240\pm 5^{\circ}\text{C}$ with a dwell time of 10 ± 2 s. The cooling phase is labeled 'within 20s-40s'. The pre-heating phase is labeled 'within 60s-120s'.</p>	It shall fulfill Table 1.						

(to be continued))

Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510

6. ENVIRONMENTAL TEST

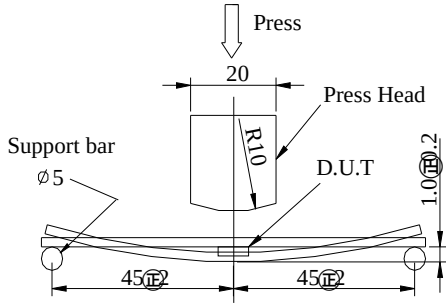
No.	Item	Condition of Test	Performance Requirements
6.8	Solderability	Dipped in 235°C±5°C solder bath for 3s±0.5s with rosin flux (25wt% ethanol solution.)	The terminals shall be at least 95% covered by solder.
6.9	Board Bend	<p>Mount on a glass-epoxy board (width =50mm, thickness=1.6mm), then bend it to 1mm displacement (velocity= 1mm/s) and</p> 	

Table 1

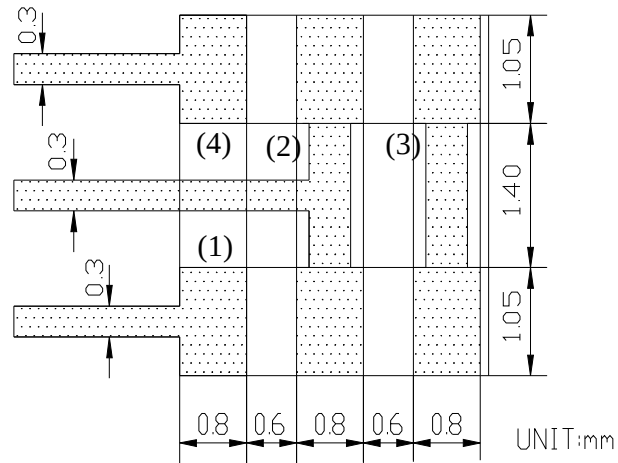
Item	Characteristics after test
Center Frequency Drift (kHz) max	±30
Insertion Loss Drift (dB) max	±2
3dB Bandwidth Drift (kHz) max	±25
20dB Bandwidth Drift (kHz) max	±60

Note: The limits in the above table are referenced to the initial measurements.

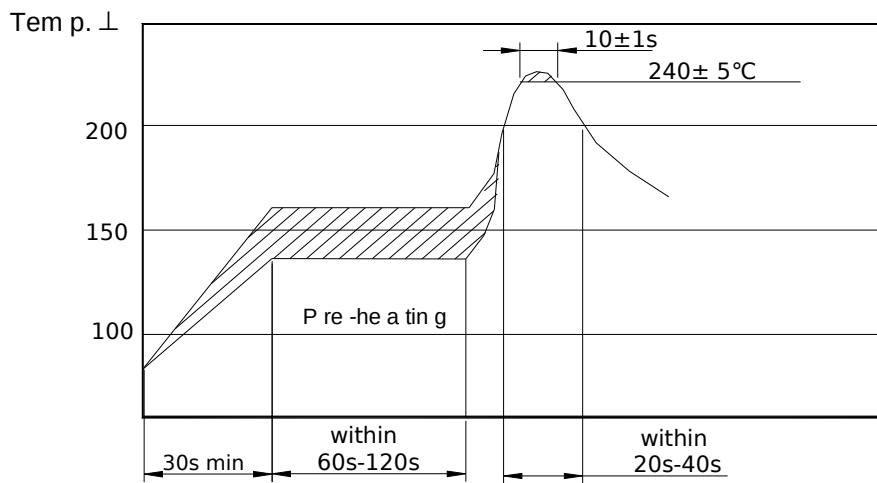
Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510

7 RECOMMENDED LAND PATTERN AND REFLOW SOLDERING STANDARD CONDITIONS

7.1 R



7.2 Recommended reflow soldering standard condition



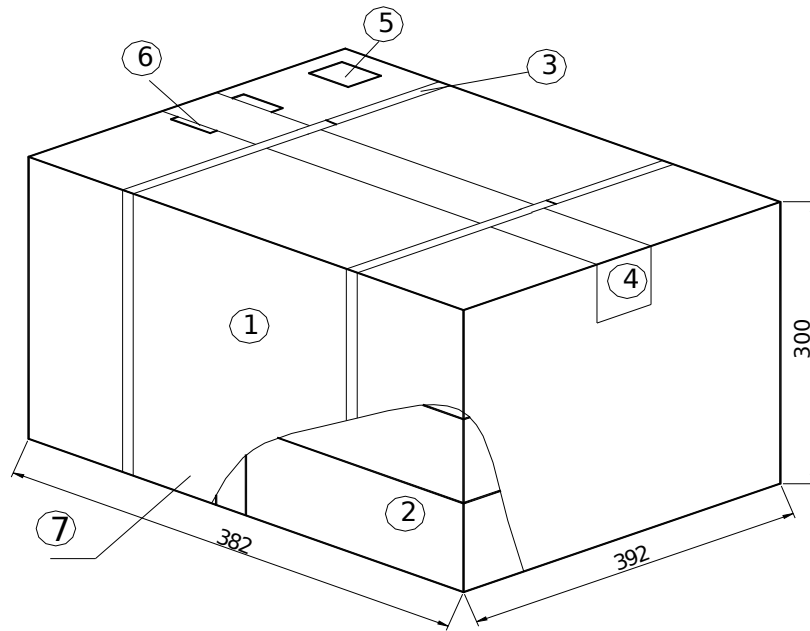
Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510

8. PACKAGE

To protect the products in storage and transportation , it is necessary to pack them (outer and inner package)

8.1 On paper pack, the following requirements are requested.

8.1.1 Dimensions and Mark



NO.	Name	Quantity
	Package	1
	Inner Box	10
	Belt	2.9 m
	Adhesive tape	1.2 m
	Label	1
	Certificate of approval	1
	Company name ,Address etc.	

Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510

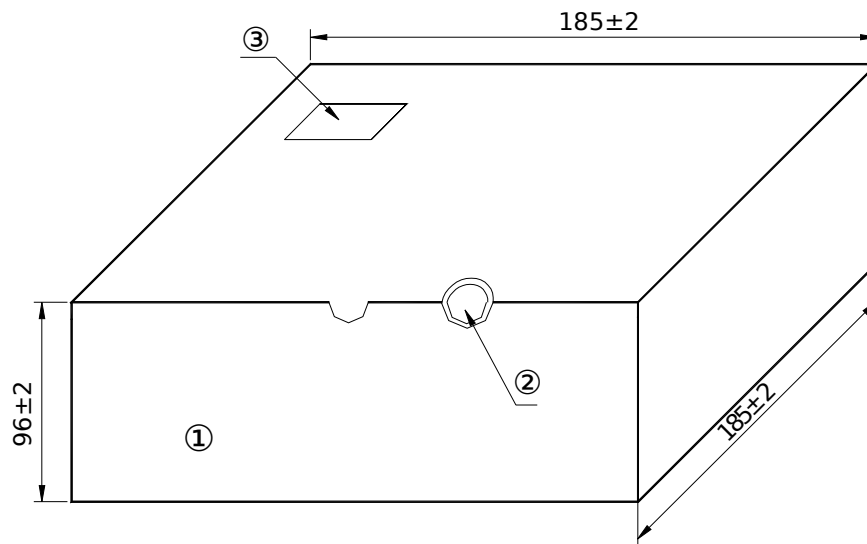
8.1.2 Section of package

Package is made of corrugated paper with thickness of 0.8cm. Package has 12 inner boxes, each box has 5 reels(each reel for plastic bag)

8.1.3 Quantity of package

- Per plastic reel 1000 pieces of piezoelectric ceramic part
- Per inner box 5 reels
- Per package 12 inner boxes
- (60000 pieces of piezoelectric ceramic part)

8.1.4 Inner Box Dimensions

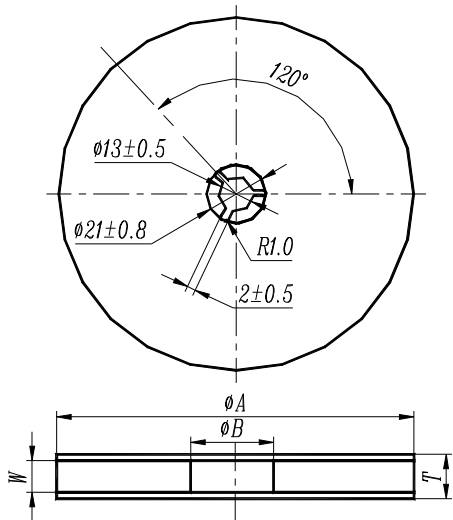


NO.	Name	Quantity
	Inner Box	1
	QC Label	1
	Label	1

Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
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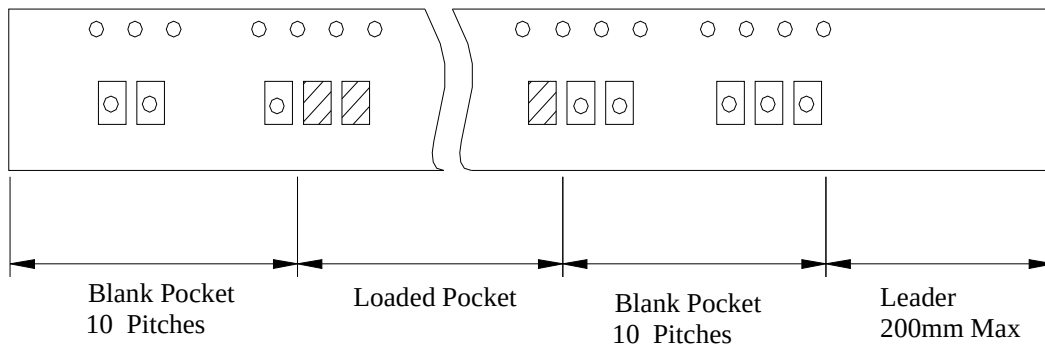
8.2 On reel pack, the following requirements are requested.

8.2.1 Reel Dimensions

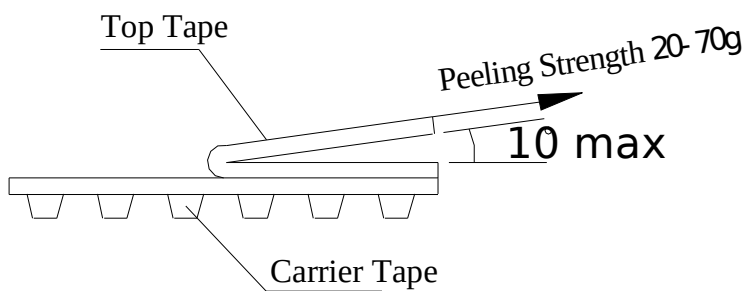


ϕA	ϕB	W	T	Pieces per reel	Carrier tape size
180 \pm 3	60min	12.4min	19.4max	1000typ.	12

8.2.3 Packing Method Sketch Map



8.2.4 Test Condition Of Peeling Strength



Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW510

9. EIAJ Monthly Code

2019/2021/2023/2025		2020/2022/2024/2026	
MONTH	CODE	MONTH	CODE
JAN	A	JAN	N
FEB	B	FEB	P
MAR	C	MAR	Q
APR	D	APR	R
MAY	E	MAY	S
JUN	F	JUN	T
JUL	G	JUL	U
AUG	H	AUG	V
SEP	J	SEP	W
OCT	K	OCT	X
NOV	L	NOV	Y
DEC	M	DEC	Z

10. OTHER

10.1 Caution

10.1.1 Don't apply excess mechanical stress to the component and terminals at soldering. Do not use this product with bend.

10.1.2 Do not clean or wash the component for it is not hermetically sealed.

10.1.3 Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.

10.1.4 Don't be close to fire.

10.1.5 This specification mentions the quality of the component as a single unit. Please insure the component is thoroughly evaluated in your application circuit

10.1.6 Expire 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 solder-ability or rusty. Please confirm solder-ability and characteristics for the products regularly.

10.1.7 Exposure components under soldering condition that is exceeding our recommendation will increase the failure dangerous.

10.1.8 Please contact us before using the product as automobile electronic component.

10.2 Notice

10.2.1 Please return one of these specifications after your signature of acceptance.

10.2.2 When something gets doubtful with this specifications, we shall jointly work to get an agreement.