

Specification for Approval



Customer: _____

Customer P/N: _____

Product Name: Common Mode Filters

Coilank P/N: AACT453228LC-P Series

[☒ New Released, ☐ Revised]

Approved by	Checked by	Prepared by
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【For Customer approval Only】

Date: _____

Qualification Status: ☐ Full ☐ Restricted ☐ Rejected

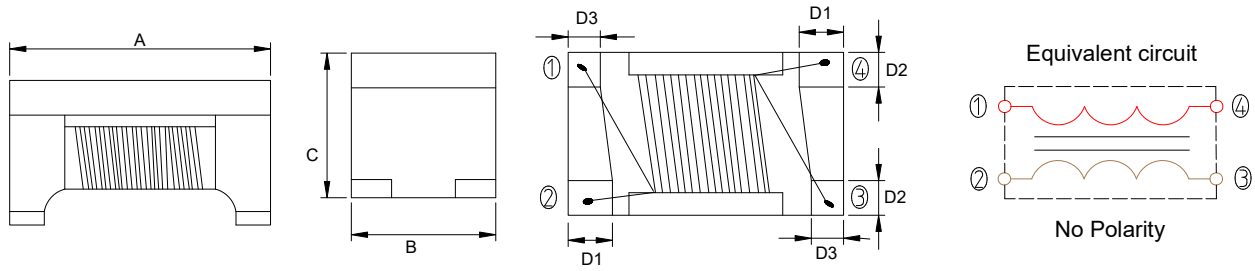
Approved By	Verified By	Checked By

Comments: _____

Change Note

Version	Comtent	Draw	Check	Approval	Date	Coding
1	New Design	Tina.liang	Cindy.tang	James.huang	2024.12.16	S215

1. Configuration and Dimensions



TYPE	A	B	C	D1	D2	D3	Q'Ty/Reel
AACT453228LC	4.5±0.2	3.2±0.2	2.8±0.2	0.75Ref	0.85Ref	0.6Ref	500

2. Part Number Code

<u>AACT</u>	<u>453228</u>	<u>LC</u>	<u>R</u>	<u>110</u>	<u>P</u>
A	B	C	D	E	F

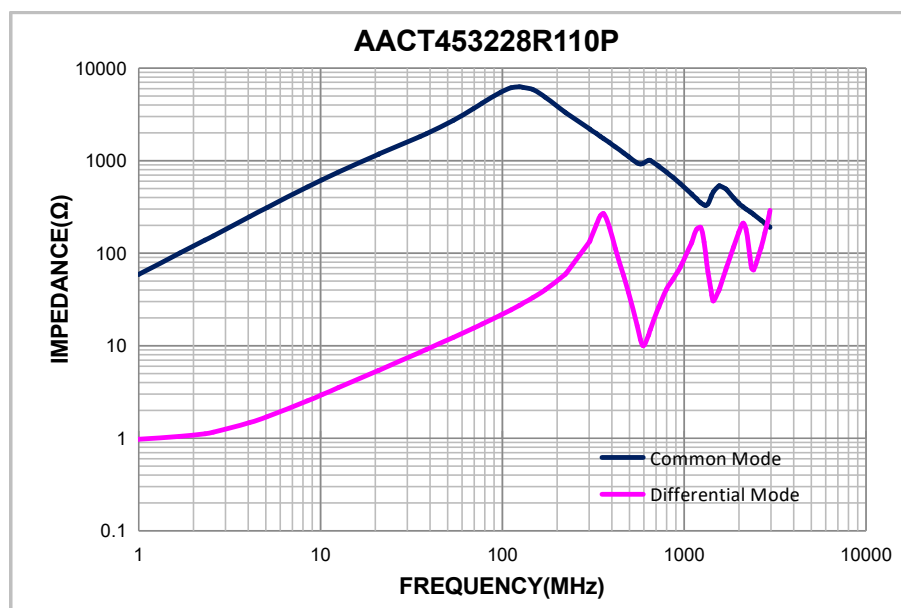
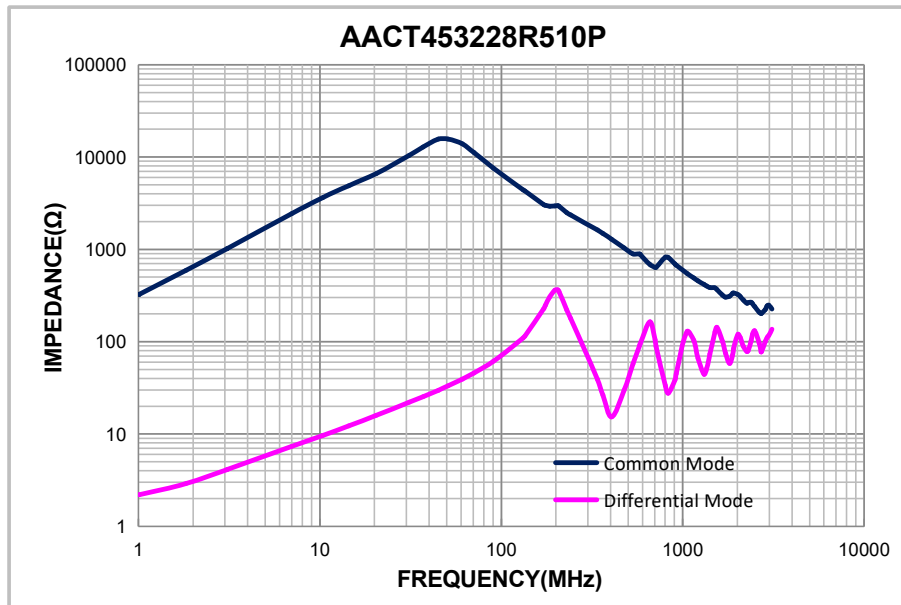
A: Series Name	Common Mode Filters
B: Dimensions(mm)	453228: 4.5X3.2X2.8
C: Internal controls	
D: Tolerance	R: Reference
E: Inductance	110= 11uH
F: Internal controls	

3. Electrical Spec

Part Number	Common Mode Impedance(Ω) @10MHz		Common Mode Inductance (uH) @100KHz/0.1V	DC Resistance (Ω) Max.	Rated Current (mA) Max.	Rated Voltage (V) Max.	Insulation Resistance (MΩ)Min.
	Min.	Typ.	+50/-30%				
AACT453228LCR110P	300	600	11	0.6	360	50	10
AACT453228LCR510P	1000	2800	51	1	230	50	10

Notes:

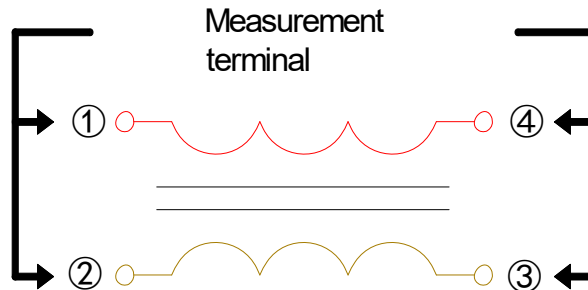
- 1) AEC-Q200 qualified.
- 2) All test data is referenced to 25°C ambient.
- 3) Operating temperature range -40°C to +125°C,(Including self - temperature rise).
- 4) The part temperature(ambient + temp rise)should not exceed 125°C under worst case operating conditions. Circuit design,component placement, PCB trace size and thickness,airflow and other cooling provisions all affect the part temperature,part temperature should be verified in the end application.

4. Characteristics(Reference)

5. Test Equipment

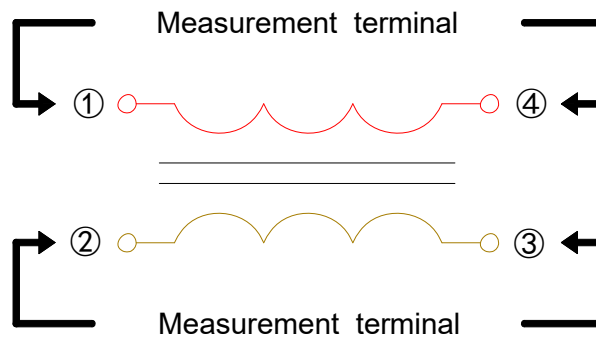
5.1 Impedance

Measured by using Agilent E4991A RF Impedance Analyzer.



5.2 DC Resistance

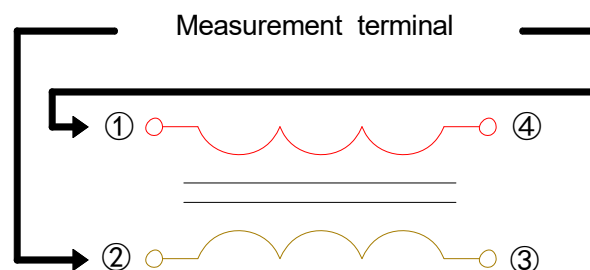
Measured by using Chiroma 16502 mill ohm meter.



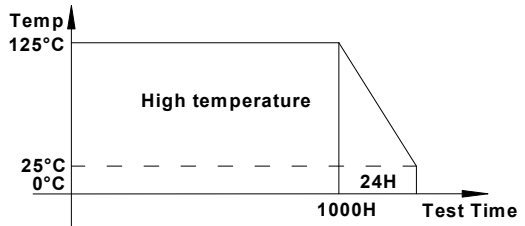
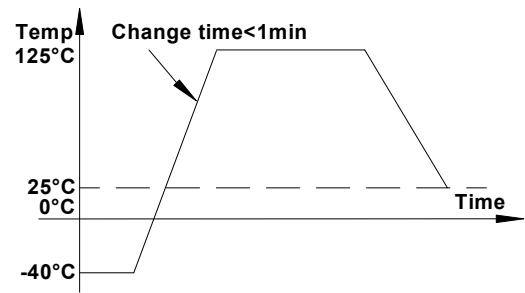
5.3 Insulation Resistance

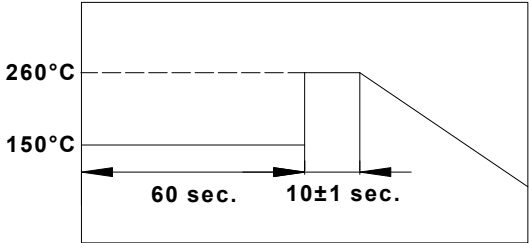
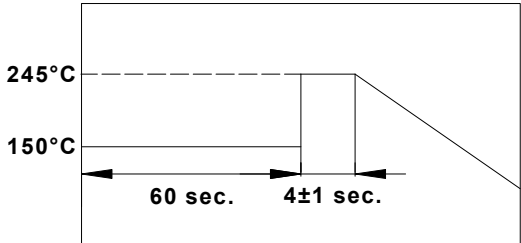
Measured by using Chroma 19073

Measurement voltage : 50v . Measurement time : 60 sec.



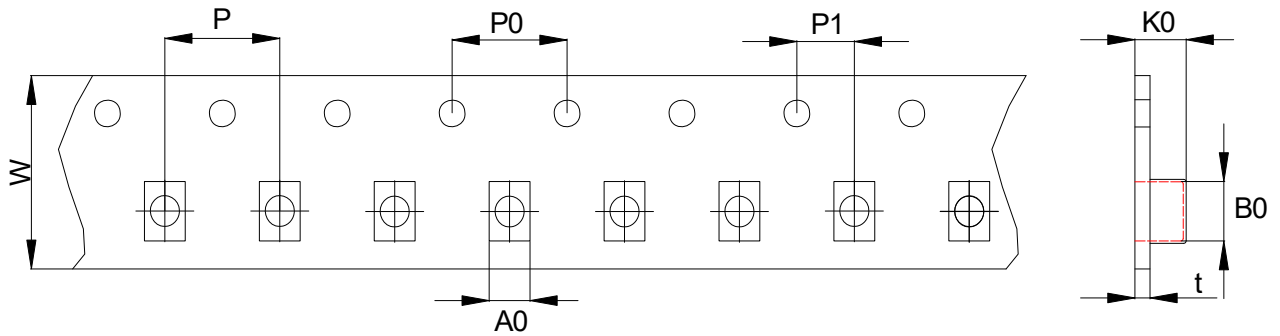
6. Reliability Test

Item	Specifications	Test conditions
6.1 High temperature storage test	No visible mechanical damage. Inductance change: Within $\pm 10\%$.	<p>Temperature: $125 \pm 2^\circ\text{C}$. Duration: 1000hrs. Measured at room temperature after placing for 24 ± 4 hrs.</p> 
6.2 Temperature cycling test	No visible mechanical damage. Inductance change: Within $\pm 10\%$.	<p>Condition for 1 cycle. Step1: $-40 \pm 2^\circ\text{C}$ 30min Min. Step2: $125 \pm 2^\circ\text{C}$, transition time 1min Max. Step3: $125 \pm 2^\circ\text{C}$ 30min Min. Step4: Low temp, transition time 1min Max. Number of cycles: 1000. Measured at room temperature after placing for 24 ± 4 hrs.</p> 
6.3 Biased humidity test	No visible mechanical damage. Inductance change: Within $\pm 10\%$.	<p>Humidity : $85\% \pm 3$ RH. Temperature: $85^\circ\text{C} \pm 2^\circ\text{C}$. Duration : 1000hrs. Measured at room temperature after placing for 24 ± 4 hrs.</p>
6.4 Operational life test	No visible mechanical damage. Inductance change: Within $\pm 10\%$.	<p>Temperature: $105 \pm 2^\circ\text{C}$. Duration : 1000hrs. Measured at room temperature after placing for 24 ± 4 hrs.</p>
6.5 Resistance to solvent test	No visible mechanical damage. Inductance change: Within $\pm 10\%$.	Add aqueous wash chemical - OKEM clean or equivalent.
6.6 Vibration test	No visible mechanical damage. Inductance change: Within $\pm 10\%$.	<p>Oscillation Frequency: 10~2K~10Hz for 20 minute. Total Amplitude: $1.52\text{mm} \pm 10\%$. Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations).</p>

Item	Specifications	Test conditions
<p>6.7</p> <p>Resistance to soldering heat test</p>	<p>No visible mechanical damage.</p> <p>Inductance change: Within $\pm 10\%$.</p>	<p>Temperature ($^{\circ}\text{C}$): 260 ± 5 (solder temp). Time (s): 10 ± 1. ramp/immersion and emersion rate: $25\text{mm/s} \pm 6\text{ mm/s}$. Number of heat cycles:1.</p> 
<p>6.8</p> <p>Solderability test</p>	<p>More than 95% of the terminal electrode should be covered with solder.</p>	<p>Steam Aging: 8 hours \pm 15 min. Preheat: 150°C, 60sec. Solder: Sn99.5%-Cu0. 5%. Temperature: $245 \pm 5^{\circ}\text{C}$. Flux for lead free: Rosin. 9.5%. Dip time: 4 ± 1sec. Depth: completely cover the termination.</p> 
<p>6.9</p> <p>Terminal strength (SMD) test</p>	<p>No visible mechanical damage.</p>	<p>With the component mounted on a PCB with the device to be tested, apply a 17.7 N (1.8 Kg) force to the side of a device being tested. This force shall be applied for 60 ± 1 seconds. Also the force shall be applied radually as not to apply a shock to the component being tested.</p>

7. Packing, Storage

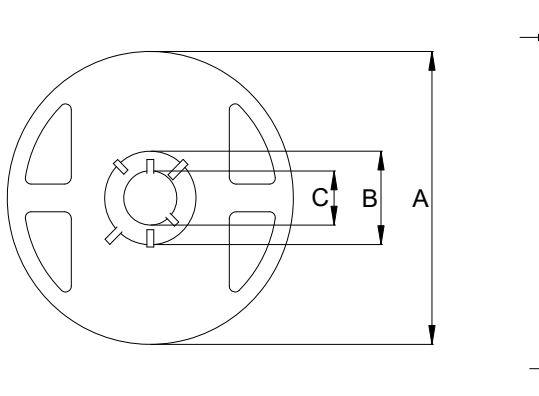
7.1 Tape dimensions (Unit: mm)



(Tolerance: $\pm 0.1\text{mm}$)

Symbol	W	P	P0	P1	A0	B0	K0	t
AACT453228LC	12.0	8.0	4.0	2.0	3.6	4.9	3.0	0.26

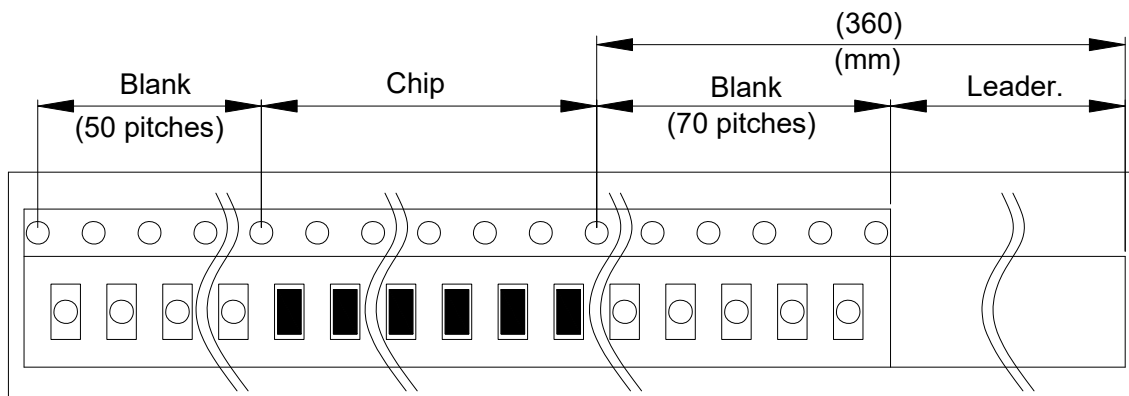
7.2 Reel dimensions



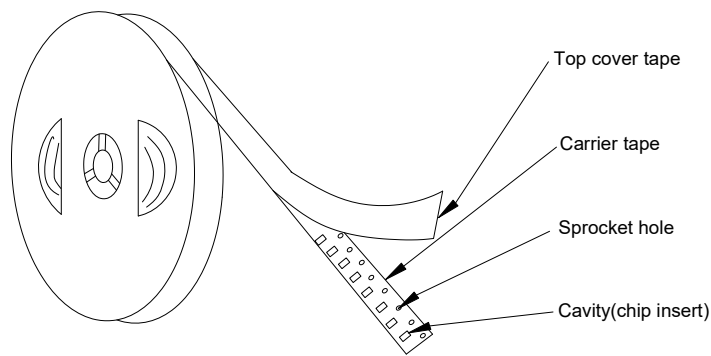
Symbol	T
A	178
B	60
C	13.5
D	16.5
E	13.5

7.3 Tape Dimension

There shall not continuation more than two vacancies of the product.



7.4 Tapping figure



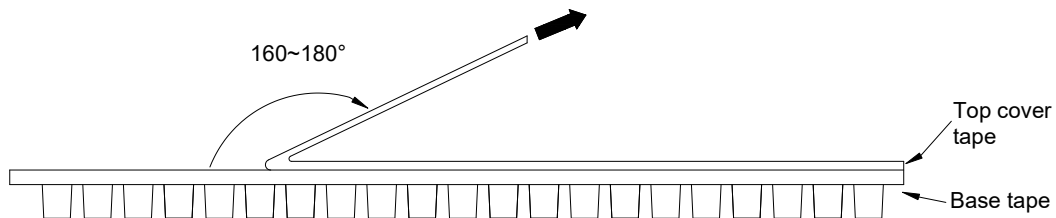
7.5 Cover Tape Peel Strength

The force for tearing off cover tape is 0.05~0.69(N) in the arrow direction at the following conditions,

Temperature : 5 ~ 35°C

Hmidity : 45 ~ 85%

Atmospheric pressure : 860 ~ 1060 hpa



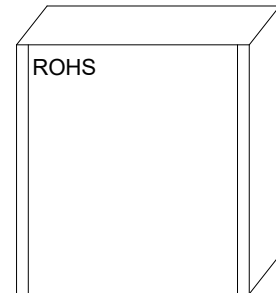
7.6 Packaging

7.6.1 The inner box specification: 195*192*65MM

Packing quantity: 2000PCS/ box

Sealing bag: 32*23CM

Job description: putting the air bubble bag products placed inside the box, sealed with scotch tape.



7.6.2 The outside box specification: 410*405*165MM

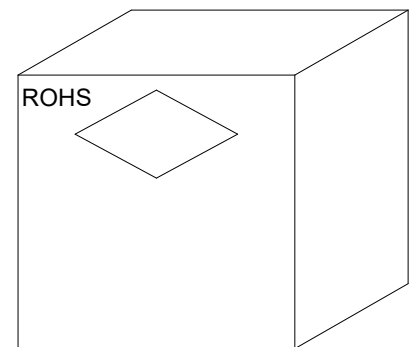
Packing quantity: 16000PCS/ box

Job description: will be outside the box bottom sealed, inner box into the box.

a. With transparent tape sealed box at the top.

b. The specified location with a box labels in the outer box.

c. If the mantissa box under a FCL with inner box for filling full.

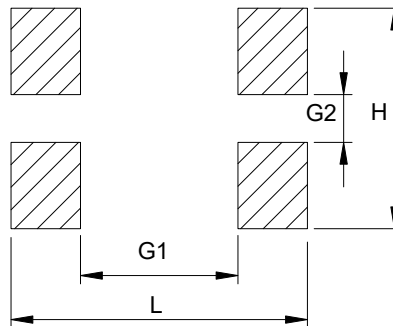


7.7 Storage

- To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled.
- Recommended conditions: $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$, 70%RH (Max).
- Even under ideal storage conditions, solderability of products electrodes may decrease as time passes. For this reason, product should be used with one year from the time of delivery.
- In case of storage over one year, solderability shall be checked before actual usage.
- Products meet IPC/JEDEC J-STD-020E standard-MSL, level 1.

8. Recommended Soldering Conditions

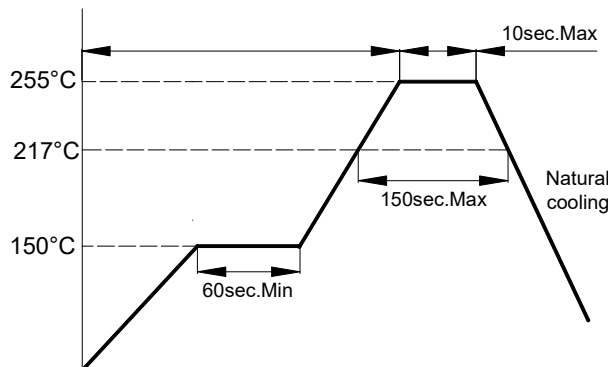
8.1 Recommended Footprint(Unit:mm)



Type	L	H	G1	G2
AACT453228LC	5.0	3.6	3.4	1.7

9. Recommended Reflow Pattern

Reflow : until two times. (Please use this product by reflow soldering)



9.1 Iron Soldering

Use a solder iron of less than 30W when soldering. Do not allow the soldering iron tip directly touch the ferrite body outside of terminal electrode, 2 seconds max. at 280°C .

10. Attention in Case of Using

In case of using product ,please avoid following matters:

Sokasgubg water ir salt water

Dew condenses

Toxic gas (Hydrogen sulfide, Sulfurous acid , Chlorine , Ammonia)

Vibrations or shocks which exceed the specified condition

Please be careful for the stress to this product by board flexure or something aftee the mounting.