

	DATASHEET	Part No.
	Amotech Feedthru Capacitor	AFC16S03A223MCD

CUSTOMER :

DATA SHEET

Product Name	: Amotech Feedthru Capacitor
Part No	: AFC 16S 03A 223M CD
Revision Date	: 2019/11/04
Customer Code	:

	Address : AMOTECH. CO. LTD., 17-2 ,JAMWON-DONG, SEOCHO-GU, SEOUL,KOREA
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1. Parts description

1.1. Overview

The AFC series has a filter with feed-thru structure for EMI protection, and mainly has the function of blocking EMI noise in power circuits.

1.2. Features

- Low ESL/ESR
- Broad band frequency characteristics
- Ceramic multilayer type SMD component
- RoHS compliance
- MSL LEVEL 1

1.3. Application

- EMI Suppression
- Broadband I/O Filtering
- Vcc Line Conditioning

2. Model and Lot Number description

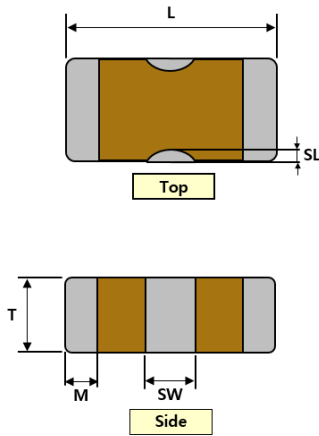
2.1. Model

<u>AFC</u>	<u>16</u>	<u>S</u>	<u>03A</u>	<u>223</u>	<u>M</u>	<u>C</u>	<u>D</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

- (1) Series name
- (2) Rated Voltage 16 : 16V
- (3) Material Code S : X7R
- (4) Chip size, 03A : 0603 (1.6 x 0.8 x 0.6 mm)
- (5) Capacitance 223 : 22 nF
- (6) Capacitance tolerance : 20%
- (7) For signal Line
- (8) Packaging specification

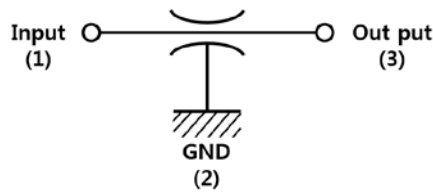
3. Style and Dimension

3.1. Style and Dimension



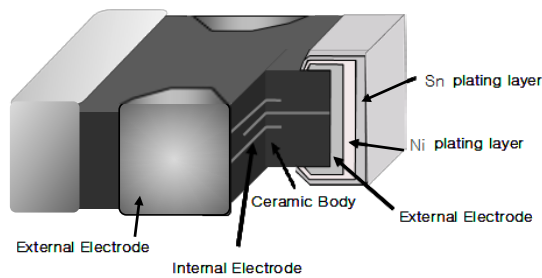
Size (mm)	
L	1.6±0.10
W	0.8±0.10
T	0.6±0.10
M	0.25±0.10
SW	0.4±0.10
SL	0.2±0.10

3.2. Equivalent circuit



※ No Polarity & Directionality

4. Structure and materials



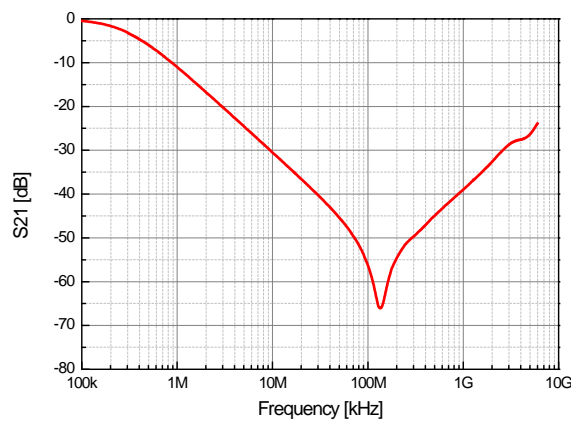
Item	Material
Ceramic Body	BaTiO ₃
Internal electrode	Ni
External electrode	Cu – Ni – Sn
Plating layer	Ni ≥ 2 μm, Sn ≥ 3 μm

5. Specification

5.1. Specification

Part No.	Capacitance	Tolerance	DC Rated Voltage	DC Rated Current	DC Resistance	Insulation Resistance
	(nF)	(%)	(V)	(A)	(mΩ)	(MΩ)
AFC 16S 03A 223M CD	22	20	16	1A(DC)	Max. 50	Min. 1000

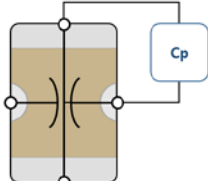
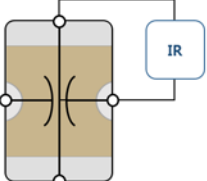
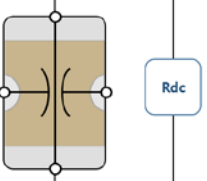
5.1.1. Frequency characteristics



5.2. Temperature range

- 1) Operating temperature range: -55 ~ +125°C
- 2) Storage temperature range: -55 ~ +125°C

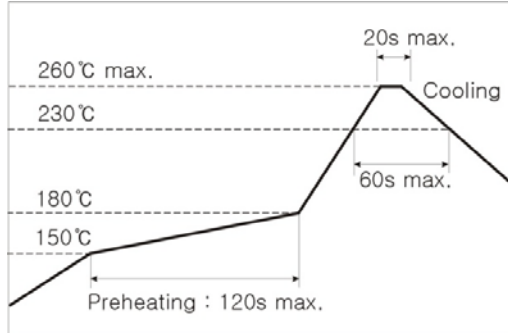
5.3. Testing method

parameter	Capacitance (Cp)	Insulation Resistance	DC Resistance
Equipment	Capacitance meter	Source meter	Milliohm Meter
Terminal to be Tested			

6. Soldering (Reflow soldering)

6.1. Soldering condition

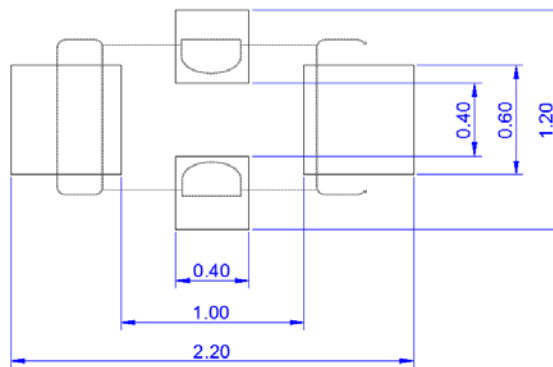
a. Lead-free solder paste: Sn/Ag/Cu:96.5/3.0/0.5



b. Follow the recommended soldering conditions to avoid degradation of performance.

- This product designed for reflow soldering only. Do not use flow soldering.
- Use non-activated flux. (Max. Cl content less than 0.2%)
- Reflow cycle times should be done less than 3 times.

6.2. PCB pattern design condition (recommended)



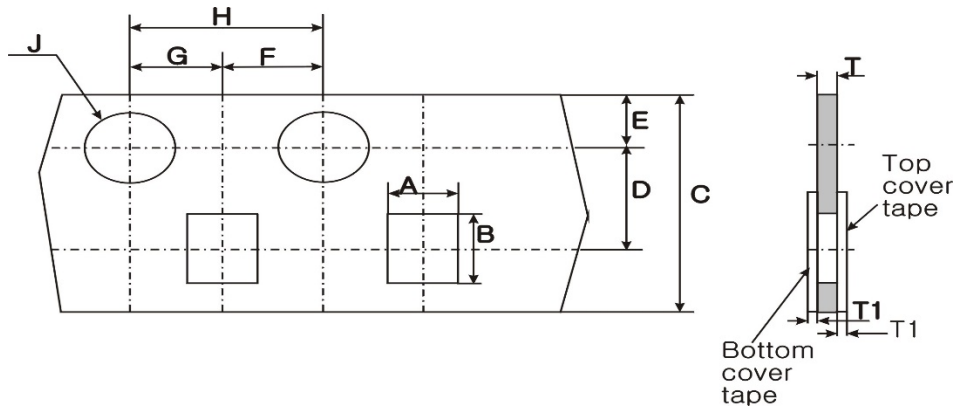
7. Caution

- 1) Storage environment: -5~40°C temperature, 20~70% humidity (MSL Level 1)
- 2) Do not use in high temperature/high humidity and a corrosive atmosphere like sulfide, chloride gas which could damage the solderability.
- 3) Do not expose to mechanical shock to avoid crack.
- 4) Use chips within 6 months. If over 6 months, check solderability before use.

8. Packaging specification

8.1 Carrier tape specification

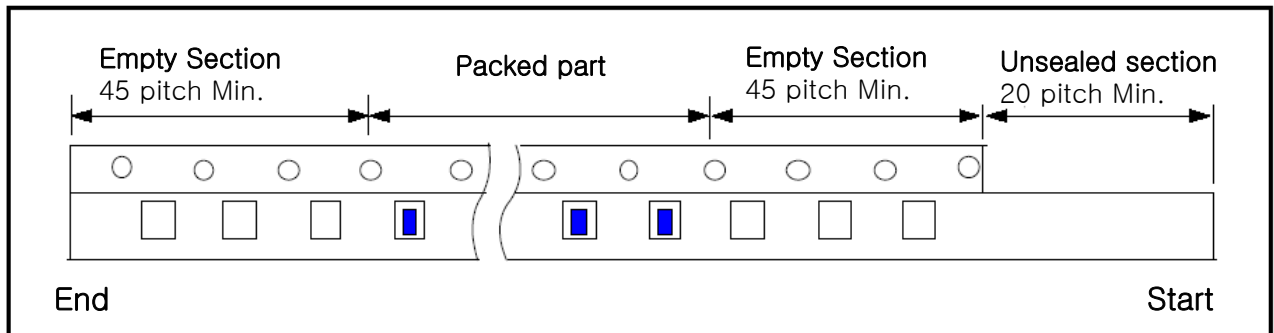
8.1.1. Size



Unit : mm

	A	B	C	D	E	F	G	H	J	T	T1
Spec.	1.00	1.90	8.00	3.50	1.80	2.00	2.00	4.00	1.55	0.95	0.1
Tolerance	±0.05	±0.05	±0.10	±0.05	±0.05	±0.05	±0.05	±0.10	±0.03	±0.05	Max

8.1.2. Chip locations

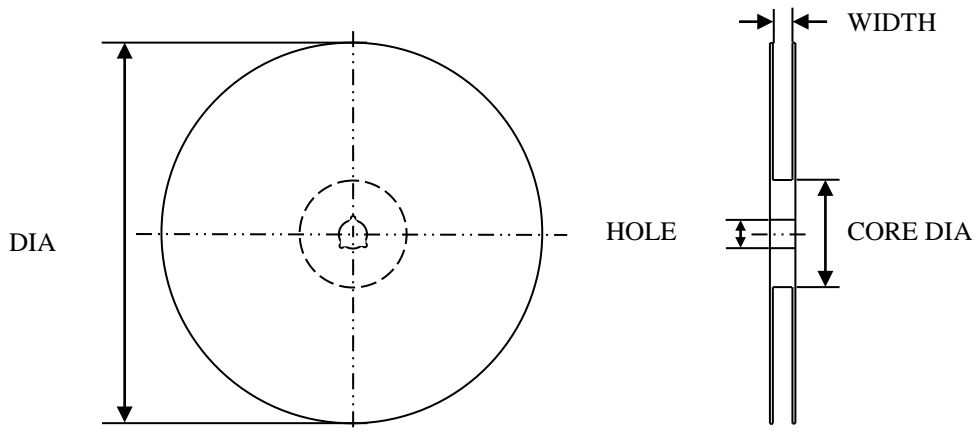


8.1.3. Material

- 1) Paper carrier tape : Laminated virgin pulp
- 2) Top tape (Cover tape): Polyester film (requirement: internal surface resistance $1 \cdot 10^4 \sim 1 \cdot 10^{10} \Omega$)
- 3) Bottom tape : Adhesive coated paper

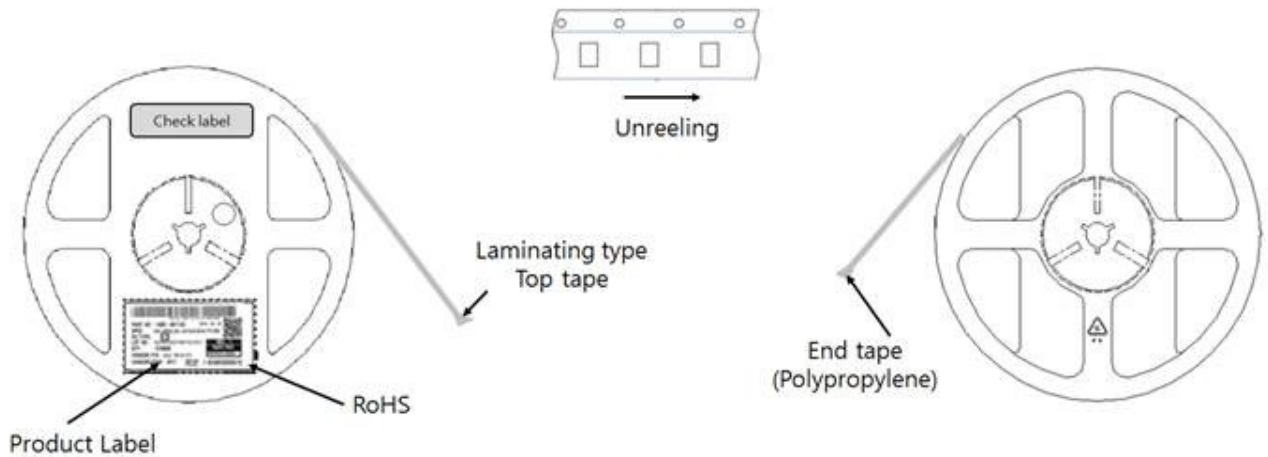
8.2. Reel specification

8.2.1. Size



Item	DIA	WIDTH	CORE DIA	HOLE
Size (mm)	178.0±0.5	9.0±0.5	60.0±1.0	13.2±0.3

8.2.2. Label adherence and winding direction







8.2.3. Material

- Plastic reel : GPPS (General Purpose Poly Styrene) resin

8.3 Box packaging Specification

Box	Small	Medium	Large
Size (mm)	183 (W) x 185 (D) x 70 (T)	200 (W) x 375 (D) x 205 (T)	375 (W) x 390 (D) x 205 (T)

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Quantity	5 reel = 4,000 ea/reel × 5 = 20,000 ea	5 small boxes = 4,000 ea/ small boxes X 25 = 100,000 ea	10 small boxes = 4,000 ea/reel X 50 = 200,000 ea
Detail			

8.4. Label Specification

Size - 80 X 40 (mm) – Reel, Small boxes, Medium & Large boxes