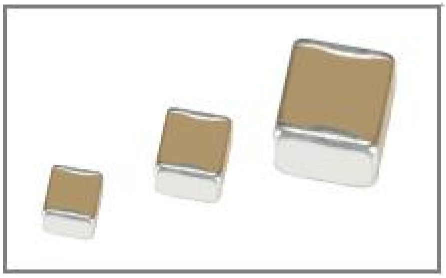


■车规片式陶瓷电容器--AE 系列

Automotive MLCC--AE Series

◆特征

Feature

* 叠层独石结构，具有高可靠性能
There is high reliability on monolithic structure of laminated layers.

* 具有优良的焊接与耐焊性能，适用于回流焊接与波峰焊接
And its character of excellent soldering ability and
soldering resistance ability is suitable for reflow soldering and peak soldering.

* 具有较高的容量且容量性能稳定
It includes high and stable capacitance.

* 此类电容器为汽车专用电子元器件，已通过 AEC-Q200 标准设定的所有实验条件，在汽车使用过程中更具稳定性、安全性
This type of capacitor is a special electronic component for automobiles, which has passed all the experimental conditions set by the AEC-Q200 standard, and is more stable and safe during automobile use

* 材料使用主要有温度稳定性能较高的 C0G 以及高介电常数的 X7R、X5R、X7S、X7T
The materials used mainly include C0G with high temperature stability and X7R, X5R, X7S, and X7T with high dielectric constant

* 执行标准：GB/T 21041-2007 GB/T 21042-2007 AEC-Q200
Executive Standard: GB/T 21041-2007 GB/T 21042-2007 AEC-Q200

◆ 应用

Application

* 高抗弯曲性能系列, 采用树脂端头工艺，更有效有效抑制板间弯曲产生的应力裂纹,适用于车载电源控制、电池线等易弯曲模块、动力传输模块。
The resin end process is adopted to more effectively suppress stress cracks caused by bending between plates, and is suitable for bendable modules such as on-board power control and battery lines, and power transmission modules.

■修订履历 Revision History

版本 Version	日期 Date	修订内容 Revision Content	修订人 Reviser
A0	2024-2-28	1. 换新版格式 2. 按照弯曲强度 5㎜ 进行型号优化 3. 可靠性接受标准优化 1. Update to the new version format. 2. Optimize model selection based on a bending strength of 5mm. 3. Improve reliability acceptance standards.	***
A1	2025-1-25	按新格式要求重新整理整版内容 Reorganize the entire content according to the new format requirements.	***

注：1.上述所提供之内容为产品规格说明。在产品未变更时，风华保有修改此内容不另行通知之所有权利，任何产品变更将会以ＰＣＮ通知客户。

1.The content provided above is the product specification description. Fenghua reserves the right to modify this content without further notice as long as there are no changes to the product. Any product changes will be communicated to the customer via PCN (Product Change Notification).

2.产品规格书中，同规格同容量同温度特性可交付的高电压型号规格，可以完全覆盖低压；同规格同容量同电压产品，温度特性 X7R 产品可覆盖 X7S,X7T,X6S,X5R（如 AE02B104K250NT 可以覆盖 AE02BS104K250NT, AE02BT104K250NT, AE02DS104K250NT, AE02X104K250NT）,规格书中就不再列出详细型号规格。

2.In the product specification, high-Voltage models with the same specifications, capacitance, and temperature characteristics can fully cover the low-Voltage models. Similarly, for products with the same specifications, capacitance, and Voltage, X7R temperature characteristic products can cover X7S, X7T, X6S, and X5R (e.g., AE02B104K250NT can cover AE02BS104K250NT, AE02BT104K250NT, AE02DS104K250NT, and AE02X104K250NT). Therefore, detailed model specifications will not be listed in the specification.

◆ 型号表示法

How To Order

AE	05	B	104	K	500	A	T

AE: 软端子系列 Highly Anti-bending Automotive Series

05:

规格 Code	EIA	长×宽 (L×W) mm
02	0402	1.00×0.50
03	0603	1.60×0.80
05	0805	2.00×1.25
06	1206	3.20×1.60
10	1210	3.20×2.50
08	1808	4.50×2.00
12	1812	4.50×3.20
20	2220	5.70×5.00

B: 介质种类 Dielectric Code

介质种类 Dielectric Code	介质材料 Dielectric
B	X7R
BS	X7S

104: 标称容量 Nominal Capacitance

表示方式 Express Method	实际值 Actual Value
0R5	0.5
1R0	1.0
104	10×10^4

注：头两位数字为有效数字，第三位数字为 0 的个数；R 为小数点。
Note: the first two digits are significant; third digit denotes number of zeros; R=decimal point.

K: 容量误差 Capacitance Tolerance

代码 Code	误差 Tolerance
G	±2%
J	±5%
K	±10%
M	±20%

500: 额定电压 Rated Voltage 单位(unit)：V

表示方式 Express Method	实际值 Actual Value
6R3	6.3
500	50×10^0
201	20×10^1

注：头两位数字为有效数字，第三位数字为 0 的个数；R 为小数点。
Note: the first two digits are significant; third digit denotes number of zeros; R=decimal point.

A: 端头材料 Terminal Material

端头类别 Terminal type	表示方式 Express Method
柔性端头 Flexiterm Termination	A

T: 包装方式 Package Styles

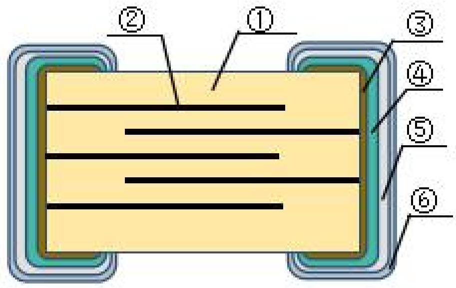
表示方式 Express Method	包装方式 Package Styles
T	编带 7 寸盘包装 Braided 7 inch disc packing
D	编带 13 寸盘包装 Braided 13 inch disc packing

◆ 温度系数/特性

Temperature Coefficient /Characteristics

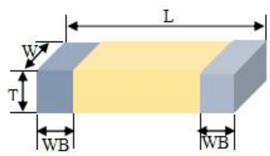
介质种类 Dielectric	参考温度点 Reference Temperature Point	标称温度系数 Temperature Coefficient	工作温度范围 Operation Temperature Range
X7R	25℃	±15%	-55℃~125℃
X7S	25℃	±22%	-55℃~125℃

◆ 产品结构
Product Structure

项目 Item	A 端头（柔性端头） A-Terminal (Flexible Terminal)
结构示意图 Structure Diagram	
代码描述 Code Description	①陶瓷介质(Ceramic Dielectric) ②镍电极(Nickel　Electrode) ③铜电极层(Copper electrode　Layer) ④导电性树脂(Conductive Resin) ⑤镍层(Nickel Layer) ⑥锡层(Tin Layer)

◆ 产品尺寸
Product Dimensions

代号 Code	英制表示 British expression	公制表示 Metric expression	尺寸 (mm)				
			L	W	T	WB	厚度代码
AE02	0402	1005	1.00±0.05	0.50±0.05	0.50±0.05	0.25±0.10	CA
			1.00±0.15	0.50±0.15	0.50±0.15	0.25±0.10	CB
			1.00±0.20	0.50±0.20	0.50±0.20	0.25±0.10	CC
AE03	0603	1608	1.60±0.10	0.80±0.10	0.80±0.10	0.35±0.20	DA
			1.60±0.20	0.80±0.20	0.80±0.20	0.35±0.20	DB
AE05	0805	2012	2.00±0.20	1.25±0.20	0.80±0.20	0.50±0.20	EA
					1.25±0.20		EB
AE06	1206	3216	3.20±0.30	1.60±0.30	0.80±0.20	0.60±0.30	FA
					1.25±0.20		FB
					1.60±0.30		FC
AE10	1210	3225	3.20±0.30	2.50±0.30	1.25±0.20	0.60±0.30	GA
					1.60±0.30		GB
					2.00±0.30		GC
					2.50±0.30		GD
AE08	1808	4520	4.50±0.40	2.00±0.20	1.60±0.30	0.60±0.30	HA
					2.00±0.30		HB
AE12	1812	4532	4.50±0.40	3.20±0.30	1.25±0.20	0.60±0.30	IA
					1.60±0.30		IB
					2.00±0.30		IC
					2.50±0.30		ID
AE20	2220	5750	5.70±0.40	5.00±0.40	1.60±0.30	0.70±0.30	LA
					2.00±0.30		LB



◆ 容量范围及其电压
Capacitance Range and Operating Voltage

AE02 (1.0mm*0.5mm)

尺寸 Specification	AE02										
材料 Temperature Characteristics	X7R						X7S				
电压 Voltage	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V
120pF	CA	CA	CA	CA	CA	CA					
150pF	CA	CA	CA	CA	CA	CA					
180pF	CA	CA	CA	CA	CA	CA					
220pF	CA	CA	CA	CA	CA	CA					
270pF	CA	CA	CA	CA	CA	CA					
330pF	CA	CA	CA	CA	CA	CA					
390pF	CA	CA	CA	CA	CA	CA					
470pF	CA	CA	CA	CA	CA	CA					
560pF	CA	CA	CA	CA	CA	CA					
680pF	CA	CA	CA	CA	CA	CA					
1nF	CA	CA	CA	CA	CA	CA					
1.2nF	CA	CA	CA	CA	CA	CA					
1.5nF	CA	CA	CA	CA	CA	CA					
1.8nF	CA	CA	CA	CA	CA	CA					
2.2nF	CA	CA	CA	CA	CA	CA					
2.7nF	CA	CA	CA	CA	CA	CA					
3.3nF	CA	CA	CA	CA	CA	CA					
3.9nF	CA	CA	CA	CA	CA	CA					
4.7nF	CA	CA	CA	CA	CA	CA					
5.6nF	CA	CA	CA	CA	CA	CA					
6.8nF	CA	CA	CA	CA	CA	CA					
10nF	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
12nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
15nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
18nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
22nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
27nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
33nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
39nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
47nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
56nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
68nF	CA	CA	CA	CA	CA		CA	CA	CA	CA	CA
100nF	CB	CB	CB	CB	CB		CB	CB	CB	CB	CB
220nF	CB	CB	CB				CB	CB	CB		

代码 Code	CA	CB
T	0.50±0.05	0.50±0.15

AM03(1.6mm*0.8mm)

尺寸 Specification	AM03													
材料 Temperature Characteristics	X7R							X7S						
电压 Voltage	6.3V	10V	16V	25V	50V	100V	200V 250V	6.3V	10V	16V	25V	50V	100V	200V 250V
120pF	DA	DA	DA	DA	DA	DA	DA							
150pF	DA	DA	DA	DA	DA	DA	DA							
180pF	DA	DA	DA	DA	DA	DA	DA							
220pF	DA	DA	DA	DA	DA	DA	DA							
270pF	DA	DA	DA	DA	DA	DA	DA							
330pF	DA	DA	DA	DA	DA	DA	DA							
390pF	DA	DA	DA	DA	DA	DA	DA							
470pF	DA	DA	DA	DA	DA	DA	DA							
560pF	DA	DA	DA	DA	DA	DA	DA							
680pF	DA	DA	DA	DA	DA	DA	DA							
1nF	DA	DA	DA	DA	DA	DA	DA							
1.2nF	DA	DA	DA	DA	DA	DA	DA							
1.5nF	DA	DA	DA	DA	DA	DA	DA							
1.8nF	DA	DA	DA	DA	DA	DA	DA							
2.2nF	DA	DA	DA	DA	DA	DA	DA							
2.7nF	DA	DA	DA	DA	DA	DA	DA							
3.3nF	DA	DA	DA	DA	DA	DA	DA							
3.9nF	DA	DA	DA	DA	DA	DA	DA							
4.7nF	DA	DA	DA	DA	DA	DA	DA							
5.6nF	DA	DA	DA	DA	DA	DA	DA							
6.8nF	DA	DA	DA	DA	DA	DA	DA							
10nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
12nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
15nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
18nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
22nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
27nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
33nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
39nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
47nF	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
56nF	DA	DA	DA	DA	DA	DA		DA	DA	DA	DA	DA	DA	
68nF	DA	DA	DA	DA	DA	DA		DA	DA	DA	DA	DA	DA	
100nF	DA	DA	DA	DA	DA	DA		DA	DA	DA	DA	DA	DA	
220nF	DA	DA	DA	DA	DA			DA	DA	DA	DA	DA		
330nF	DA	DA	DA	DA				DA	DA	DA	DA			
470nF	DA	DA	DA	DA				DA	DA	DA	DA			
680nF	DA	DA	DA	DA				DA	DA	DA	DA			
1.0µF	DB	DB	DB	DB				DB	DB	DB	DB			

代码 Code	DA	DB
T	0.80±0.10	0.80±0.20

AM05 (2.0mm*1.25mm)

尺寸 Specification	AM05													
材料 Temperature Characteristics	X7R							X7S						
电压 Voltage	≤10V	16V	25V	50V	100V	200V 250V	500V	≤10V	16V	25V	50V	100V	200V 250V	500V
120pF	EA	EA	EA	EA	EA	EA	EA							
150pF	EA	EA	EA	EA	EA	EA	EA							
180pF	EA	EA	EA	EA	EA	EA	EA							
220pF	EA	EA	EA	EA	EA	EA	EA							
270pF	EA	EA	EA	EA	EA	EA	EA							
330pF	EA	EA	EA	EA	EA	EA	EA							
390pF	EA	EA	EA	EA	EA	EA	EA							
470pF	EA	EA	EA	EA	EA	EA	EA							
560pF	EA	EA	EA	EA	EA	EA	EA							
680pF	EA	EA	EA	EA	EA	EA	EA							
1nF	EA	EA	EA	EA	EA	EA	EA							
1.2nF	EA	EA	EA	EA	EA	EA	EA							
1.5nF	EA	EA	EA	EA	EA	EA	EA							
1.8nF	EA	EA	EA	EA	EA	EA	EA							
2.2nF	EA	EA	EA	EA	EA	EA	EA							
2.7nF	EA	EA	EA	EA	EA	EA	EA							
3.3nF	EA	EA	EA	EA	EA	EA	EB							
3.9nF	EA	EA	EA	EA	EA	EA	EB							
4.7nF	EA	EA	EA	EA	EA	EA	EB							
5.6nF	EA	EA	EA	EA	EA	EA	EB							
6.8nF	EA	EA	EA	EA	EA	EA	EB							
10nF	EA	EA	EA	EA	EA	EA	EB	EA	EA	EA	EA	EA	EA	EB
12nF	EA	EA	EA	EA	EA	EB		EA	EA	EA	EA	EA	EB	
15nF	EA	EA	EA	EA	EA	EB		EA	EA	EA	EA	EA	EB	
18nF	EA	EA	EA	EA	EA	EB		EA	EA	EA	EA	EA	EB	
22nF	EA	EA	EA	EA	EA	EB		EA	EA	EA	EA	EA	EB	
27nF	EA	EA	EA	EA	EA	EB		EA	EA	EA	EA	EA	EB	
33nF	EA	EA	EA	EA	EA	EB		EA	EA	EA	EA	EA	EB	
39nF	EA	EA	EA	EA	EA			EA	EA	EA	EA	EA		
47nF	EA	EA	EA	EA	EA			EA	EA	EA	EA	EA		
56nF	EA	EA	EA	EA	EA			EA	EA	EA	EA	EA		
68nF	EA	EA	EA	EA	EB			EA	EA	EA	EA	EB		
100nF	EA	EA	EA	EA	EB			EA	EA	EA	EA	EB		
220nF	EA	EA	EA	EA	EB			EA	EA	EA	EA	EB		
330nF	EA	EA	EA	EA				EA	EA	EA	EA			
470nF	EB	EB	EB	EB				EB	EB	EB	EB			
680nF	EB	EB	EB	EB				EB	EB	EB	EB			
1μF	EB	EB	EB	EB				EB	EB	EB	EB			
2.2μF	EB	EB	EB					EB	EB	EB				
3.3μF	EB	EB						EB	EB					
4.7μF	EB	EB						EB	EB					

代码 Code	EA	EB
T	0.80±0.20	1.25±0.20

AE06(3.2mm*1.6mm)

尺寸 Specification	AE06										
材料 Temperature Characteristics	X7R							X7S			
电压 Voltage	≤25V	50V	100V	200V 250V	500V 630V	1000V	2000V	≤25V	50V	100V	200V 250V
120pF	FA	FA	FA	FA	FA	FB	FB				
150pF	FA	FA	FA	FA	FA	FB	FB				
180pF	FA	FA	FA	FA	FA	FB	FB				
220pF	FA	FA	FA	FA	FA	FB	FB				
270pF	FA	FA	FA	FA	FA	FB	FB				
330pF	FA	FA	FA	FA	FA	FB	FB				
390pF	FA	FA	FA	FA	FA	FB	FB				
470pF	FA	FA	FA	FA	FA	FB	FB				
560pF	FA	FA	FA	FA	FA	FB	FB				
680pF	FA	FA	FA	FA	FA	FB	FB				
1.0nF	FA	FA	FA	FA	FA	FB	FB				
1.2nF	FA	FA	FA	FA	FB	FB	FB				
1.5nF	FA	FA	FA	FA	FB	FB	FB				
1.8nF	FA	FA	FA	FA	FB	FB	FB				
2.2nF	FA	FA	FA	FA	FB	FB	FB				
2.7nF	FA	FA	FA	FA	FB	FB					
3.3nF	FA	FA	FA	FA	FB	FB					
3.9nF	FA	FA	FA	FA	FB	FB					
4.7nF	FA	FA	FA	FA	FB	FB					
5.6nF	FA	FA	FA	FB	FB	FB					
6.8nF	FA	FA	FA	FB	FB	FB					
10nF	FA	FA	FA	FB	FB	FB					
12nF	FA	FA	FA	FB	FB						
15nF	FA	FA	FA	FB	FB						
18nF	FA	FA	FA	FB	FB						
22nF	FA	FA	FA	FB	FB						
27nF	FA	FA	FA	FB	FB						
33nF	FA	FA	FA	FB	FB						
39nF	FA	FA	FA	FB							
47nF	FA	FA	FA	FB							
56nF	FA	FA	FA	FB							
68nF	FA	FA	FB	FB							
100nF	FA	FA	FB	FB				FA	FA	FB	FB
220nF	FA	FA	FB					FA	FA	FB	
330nF	FC	FC	FC					FC	FC	FC	
470nF	FC	FC	FC					FC	FC	FC	
680nF	FC	FC	FC					FC	FC	FC	
1μF	FC	FC	FC					FC	FC	FC	
2.2μF	FC	FC						FC	FC		
3.3μF	FC	FC						FC	FC		
4.7μF	FC	FC						FC	FC		
6.8μF	FC							FC			
10μF	FC							FC			

代码 Code	FA	FB	FC
T	0.80±0.20	1.25±0.20	1.60±0.30

AE10(3.2mm*2.5mm)

尺寸 Specification	AE10									
材料 Temperature Characteristics	X7R							X7S		
电压 Voltage	25V	50V	100V	200V 250V	500V 630V	1000V	2000V	25V	50V	100V
470pF	GA	GA	GA	GA	GA	GA	GA			
560pF	GA	GA	GA	GA	GA	GA	GA			
680pF	GA	GA	GA	GA	GA	GA	GA			
1.0nF	GA	GA	GA	GA	GA	GA	GA			
1.2nF	GA	GA	GA	GA	GA	GA	GA			
1.5nF	GA	GA	GA	GA	GA	GA	GA			
1.8nF	GA	GA	GA	GA	GA	GA	GA			
2.2nF	GA	GA	GA	GA	GA	GA	GA			
2.7nF	GA	GA	GA	GA	GA	GA	GA			
3.3nF	GA	GA	GA	GA	GA	GA	GA			
3.9nF	GA	GA	GA	GA	GA	GA	GA			
4.7nF	GA	GA	GA	GA	GA	GA	GA			
5.6nF	GA	GA	GA	GA	GA	GA	GB			
6.8nF	GA	GA	GA	GA	GA	GB	GB			
10nF	GA	GA	GA	GA	GA	GB	GC			
12nF	GA	GA	GA	GA	GA	GB				
15nF	GA	GA	GA	GA	GA	GB				
18nF	GA	GA	GA	GA	GA	GB				
22nF	GA	GA	GA	GA	GA	GB				
27nF	GA	GA	GA	GA	GB					
33nF	GA	GA	GA	GA	GB					
39nF	GA	GA	GA	GA	GB					
47nF	GA	GA	GA	GA	GC					
56nF	GA	GA	GA	GA						
68nF	GA	GA	GA	GA						
100nF	GA	GA	GA	GA						
220nF	GB	GB	GB	GB						
330nF	GB	GB	GB							
470nF	GB	GB	GB							
680nF	GB	GB	GB							
1μF	GB	GB	GB					GB	GB	GB
2.2μF	GD	GD	GD					GD	GD	GD
3.3μF	GD	GD						GD	GD	
4.7μF	GD	GD						GD	GD	
6.8μF	GD							GD		
10μF	GD							GD		

代码 Code	GA	GB	GC	GD
T	1.25±0.20	1.60±0.30	2.00±0.30	2.50±0.30

AE20(5.7mm*5.0mm)

材料 Temperature Characteristics	X7R					
尺寸 Specification	AE20					
电压 Voltage	100V	200V 250V	500V 630V	1000V	2000V	3000V
10nF	LA	LA	LA	LA	LA	
22nF	LA	LA	LA	LA	LA	
33nF	LA	LA	LA	LA	LB	
47nF	LA	LA	LA	LA	LB	
100nF	LA	LA	LA	LB		

代码 Code	LA	LB
T	1.60±0.30	2.00±0.30

◆可靠性测试
Reliability Test

序号 NO.	项目 Item	技术规格 Technical Specification		测 试 方 法 Test Method and Remarks
1	容量 Capacitance	II类 Class II	应符合指定的误差级别 Should be within the specified tolerance.	C≤10μF： 测试频率 Test Frequency: 1KHz±10% 测试电压 Test Voltage: 1.0±0.2Vrms C>10μF ： 测试频率 Test Frequency: 120±24 Hz 测试电压 Test Voltage:0.5±0.1Vrms
2	损耗角正切 (DF, tanδ) Dissipation Factor	II类 Class II		测试方法与 容量相同 The test method is the same as the capacity.

电压	DF (*10-4)	0402	0603	0805	1206 及 以上
≥100V	≦250	≤10nF	≤100nF	≤100nF	≤100nF
	≦500	——	——	≤220nF	≤4.7μF
50V	≦250	≤10nF	——	≤220nF	<1μF
	≦350	——	——	——	——
	≦500	≤0.1μF	≤100nF	≤1μF	1μF≤C ≤2.2μF
	≦750	——	≤1μF	——	≤4.7μF
	≦1000	——	——	≤2.2μF	≤10μF
25V	≦250	≤10nF	≤100nF	≤220nF	≤1μF
	≦350	≤100nF	——	——	——
	≦500	≤220nF	<470nF	≤1μF	≤2.2μF
	≦750	——	<1μF	≤2.2μF	≤4.7μF
	≦1000	≤2.2μF	≤10μF	≤22μF	≤22μF
16V	≦250	≤10nF	≤100nF	≤220nF	<1μF
	≦350	≤100nF	≤330nF	——	——
	≦500	≤220nF	≤470nF	≤1μF	≤2.2μF
	≦750	——	≤1μF	≤2.2μF	≤4.7μF
	≦1000	≤4.7μF	≤10μF	≤22μF	≤47μF
10V	≦250	≤10nF	≤100nF	≤220nF	<1μF
	≦350	≤100nF	≤330nF	——	——
	≦500	≤220nF	≤470nF	≤1μF	≤2.2μF
	≦750	≤1μF	≤1μF	≤2.2μF	≤4.7μF
	≦1000	≤10μF	≤22μF	≤47μF	≤100μF
≦ 6.3V	≦250	≤10nF	≤100nF	≤220nF	——
	≦350	≤100nF	≤330nF	——	≤1μF
	≦500	≤220nF	≤680nF	≤1μF	≤2.2μF
	≦750	≤1μF	——	4.7μF	≤10μF
	≦1000	≤22μF	≤47μF	≤47μF	≤100μF

序号 NO.	项目 Item	技术规格 Technical Specification	测 试 方 法 Test Method and Remarks
3	绝缘电阻(IR) Insulation Resistance	Ⅱ类 Class Ⅱ： C≤25 nF, Ri≥10000MΩ C>25 nF, Ri•C_R≥100S	测试电压：额定电压（最高 500V） 测试时间: 60±5 秒 测试湿度：≤75% 测试温度： 25℃±3℃ 测试充放电电流：≤50mA Measuring Voltage: Rated Voltage (Max 500V) Duration: 60±5s Test Humidity: ≤75% Test Temperature: 25℃±3℃ Testing charge/discharge current: ≤50mA
4	介质耐电强度(DWV) Dielectric Withstanding Voltage (DWV)	不应有介质被击穿或损伤 No breakdown or damage.	① Ur≤100V 测量电压： 250% Ur 时　　间： 5 秒 充/放电电流：不应超过 50mA Measuring Voltage: 250% Ur Duration: 5s Charge/ Discharge Current: 50mA max. ② 100V<Ur<500V 测量电压： 200% Ur 时　　间： 5 秒 充/放电电流：不应超过 50mA Measuring Voltage: 200% Ur Duration: 5s Charge/ Discharge Current: 50mA max. ③ 500V≤Ur≤1000V 测量电压： 150% Ur 时　　间： 5 秒 充/放电电流：不应超过 50mA Measuring Voltage: 150% Ur Duration: 5s Charge/ Discharge Current: 50mA max. ④ 1000V<Ur≤2000V 测量电压： 120% Ur 时　　间： 5 秒 充/放电电流：不应超过 50mA Measuring Voltage: 120% Ur Duration: 5s Charge/ Discharge Current: 50mA max. ⑤1000V<Ur≤2000V 测量电压： 120% Ur 时　　间： 5 秒 充/放电电流：不应超过 10mA Measuring Voltage: 120% Ur Duration: 5s Charge/ Discharge Current:10mA max
5	外观 Appearance	无可见损伤 No visible damage	目视检查 Visual inspection
6	尺寸 Physical Specification	在规定尺寸范围内 Within the specified Specifications	使用卡尺 Use caliper
7	破坏性物理分析 Destructive Physical Analysis (DPA)	无缺陷或异常 No defects or abnormalities	按照 EIA-469 Accounting to EIA-469
8	温度循环 Temperature Cycle	ΔC/C： Ⅱ类 Class Ⅱ： -12.5%~+12.5%； DF：同初始标准 Same to initial value.； IR：同初始标准 Same to initial value.； 外观：无可见损伤 Appearance：No visible damage	循环次数：1000 次,一个循环分以下 4 步： 阶段 1：下限温度-55℃；时间 30 分钟； 阶段 2：常温 20℃；时间 1 分钟； 阶段 3：上限温度 125℃；时间 30 分钟； 阶段 4：常温 20℃；时间 1 分钟。 Cycling Times: 1000 times. A cycle is divided into the following 4 steps: Step1：Lower limit temperature :-55℃；30 minutes； Step2：Normal temperature :20℃；1 minutes； Step3：Upper limit temperature :125℃；30 minutes； Step4：Normal temperature :20℃；1 minute.

<table>
<tr><th>序号
NO.</th><th>项目
Item</th><th>技术规格
Technical Specification</th><th>测 试 方 法
Test Method and Remarks</th></tr>
<tr><td>9</td><td>耐湿负荷
Biased
Humidity</td><td>ΔC/C：
Ⅱ类 Class Ⅱ：-12.5%~+12.5%；
DF：同初始标准
Same to initial value.；
IR：同初始标准
Same to initial value.；
外观：无可见损伤
Appearance：No visible damage</td><td>试验温度：85±2℃，
试验湿度：80~85%R.H. ，
试验时间：1000 小时,
施加电压：
Ur＜1000V：额定电压
Ur≥1000V: 1000V
Temperature: 85℃
Humidity: 80~85%RH
Voltage:
Ur＜1000V : Rated Voltage
Ur≥1000V: 1000V
Duration: 1000h</td></tr>
<tr><td>10</td><td>寿命试验
Life test</td><td>ΔC/C：
Ⅱ类 Class Ⅱ：-15%~+15%；
DF：同初始标准
Same to initial value.；
IR：
Ⅱ类 Class Ⅱ：Ri≥1000MΩ或 Ri•CR≥10S，
取两者中最小者
whichever is smaller；
外观：无可见损伤
Appearance：No visible damage</td><td>时间 Duration：1000h
温度 Temperature：上限温度 Up- category temp.
充电电流 Charge/Discharge Current：50mA max
电压 Voltage：
①Ur<500V：见下表
<table>
<tr><th>容量
Capacitance</th><th>试验电压
Applied Voltage</th><th>容量
Capacitance</th><th>试验电压
Applied Voltage</th></tr>
<tr><td>220nF≥0201≥10nF</td><td rowspan="6">1.5Ur</td><td>0201＜10nF</td><td rowspan="6">2.0Ur</td></tr>
<tr><td>2.2uF≥0402≥47nF</td><td>0402＜47nF</td></tr>
<tr><td>4.7uF≥0603≥220nF</td><td>0603＜220nF</td></tr>
<tr><td>10uF≥0805≥0.47uF</td><td>0805＜0.47uF</td></tr>
<tr><td>22uF≥1206≥1uF</td><td>1206＜1uF</td></tr>
<tr><td>22uF≥1210≥1uF</td><td>1210＜1uF</td></tr>
</table>
除上表之外的，按 1.0Ur 施加电压
② 500V≤Ur≤630V：1.2 Ur
③ Ur>630V：1.0Ur</td></tr>
<tr><td>11</td><td>可焊性
Solder
ability</td><td>上锡率应大于 95%
外观：无可见损伤.
At least 95% of the terminal electrode is covered by new solder.
Visual Appearance: No visible damage.</td><td>将电容在 80~120℃的温度下预热 10~30 秒.
Preheating conditions:80 to 120℃; 10~30s.
无铅焊料：
浸锡温度: 245±5℃
浸锡时间: 3±0.3s
Lead-free soldering
Solder Temperature: 245±5℃
Duration: 3±0.3s</td></tr>
<tr><td>12</td><td>耐焊接热
Resistance
to Soldering
Heat</td><td>ΔC/C：
Ⅱ类 Class Ⅱ：-15%~+15%；
DF：同初始标准
Same to initial value.；
IR：同初始标准
Same to initial value.；
外观：无可见损伤 上锡率：≥95%
Appearance：No visible damage.At least 95% of the terminal electrode is covered by new solder.</td><td>将电容在 100~200℃的温度下预热 60~120 秒.
浸锡温度: 265±5℃
浸锡时间: 10±1s
然后取出溶剂清洗干净,在 10 倍以上的显微镜底下观察.
放置时间：24±2 小时 放置条件：室温
Preheating conditions: 100 to 200℃; 60~120s.
Solder Temperature: 265±5℃
Duration: 10±1s
Clean the capacitor with solvent and examine it with a 10X(min.) microscope.
Recovery Time: 24±2h
Recovery condition: Room temperature</td></tr>
</table>

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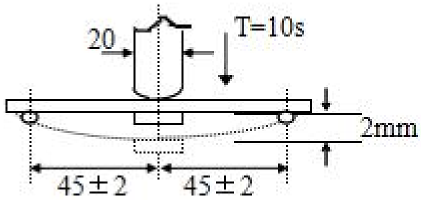
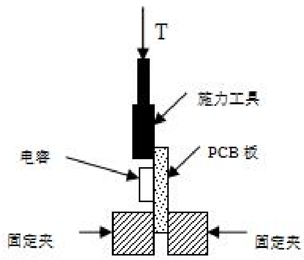
<tr><td>13</td><td>静电放电
Electrostatic Discharge
(ESD)</td><td>ΔC/C：同初始标准
Same to initial value；
DF：同初始标准
Same to initial value；
IR：同初始标准
Same to initial value；
外观：无可见损伤
Appearance：No visible damage</td><td>参照 AEC-Q200-002 方法进行 ESD 静电放电试验；
放电电压：2kV~22kV 按 2kV 步进测试。
每个样品每个电极承受两次放电，正、负级性各 1 次；
样品经过指定等级的电压后符合验收标准要求，则使用原样品进入下一个电压应力等级试验。
ESD electrostatic discharge test was carried out according to AEC-Q200-002 method：
Discharge Voltage: 2kV~22kV according to 2kV step test.
Each sample is subjected to two discharges per electrode, one positive and one negative grade.
After the sample meets the requirements of the acceptance criteria after passing the specified level of Voltage, the original sample is used to enter the next Voltage stress level test</td></tr>
<tr><td>14</td><td>抗弯曲强度
Board Flex</td><td>ΔC/C：
Ⅱ类　Class Ⅱ：-12.5%~+12.5%；
DF：同初始标准
Same to initial value.；
IR：同初始标准
Same to initial value.；
外观：无可见损伤
Appearance：No visible damage</td><td>试验基板：Al_2O_3 或 PCB
弯曲深度：≥ 3mm
施压速度：1mm/sec.
保持时间：60 s
应在弯曲状态下进行测量
Test Board: Al_2O_3 or PCB
Bending depth: ≥ 3mm
Speed: 1mm/sec. Hold time: 60 sec
The measurement should be made with the board in the bending position.

</td></tr>
<tr><td>15</td><td>振动
Vibration</td><td>ΔC/C：
Ⅱ类　Class Ⅱ：-12.5%~+12.5%；
DF：同初始标准
Same to initial value.；
IR：同初始标准
Same to initial value.；
外观：无可见损伤
Appearance：No visible damage</td><td>5g 的力 20 分钟，三个方向每个方向 12 个循环。
注意：使用 8"X5" 印刷线路板，.031"厚，在长的一边有 7 个固定点，在对面的边的角有 2 个固定点。产品在距离固定点 2" 内安装。测试频率从 10-2000 赫兹。
The force of 5g is 20 minutes, and there are 12 cycles in each direction in three directions.
Note: Use an 8"X5" PCB board, .031" thick, with 7 fixing points on the long side and 2 fixing points at the corners of the opposite side. The product is installed within 2" of the fixed point. Test frequency from 10-2000 Hz.</td></tr>
<tr><td>16</td><td>端子强度
(SMD)
Terminal strength</td><td>ΔC/C：
Ⅱ类　Class Ⅱ：-12.5%~+12.5%；
DF：同初始标准
Same to initial value.；
IR：同初始标准
Same to initial value.；
外观：无可见损伤
Appearance：No visible damage</td><td>如图所示
慢慢施加一个 T 的力到电容侧面瓷体上，并保持 60+1 秒。
<table><tr><th>规格</th><th>施加力 T</th></tr><tr><td>≤AE02</td><td>2N</td></tr><tr><td>AE03</td><td>10N</td></tr><tr><td>>AE03</td><td>17.7N</td></tr></table>
As shown in the picture
Slowly apply a T force to the porcelain body on the side of the capacitor and hold for 60+1 seconds.

</td></tr>
</table>

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<tr><td>17</td><td>温度特性
Temperature characteristics</td><td><table><tr><th>项目
Item</th><th>ΔC/C</th><th>温度范围
Temperature range</th></tr><tr><td>X7R</td><td>±15%</td><td>-55℃~125℃</td></tr><tr><td>X7S</td><td>±22%</td><td>-55℃~125℃</td></tr></table></td><td>在下限温度、25℃、上限温度三个温度点分别测量产品电性能
The electrical properties of the product are measured at three temperature points of lower limit temperature, 25°C and upper limit temperature</td></tr>
<tr><td>18</td><td>机械冲击
Mechanical shock</td><td>ΔC/C：
Ⅰ类　Class Ⅰ：≤±2.5%或±0.25pF，
取两者中最大者
whichever is larger.
Ⅱ类　Class Ⅱ：-12.5%~+12.5%；
DF：同初始标准
Same to initial value.；
IR：同初始标准
Same to initial value.；
外观：无可见损伤
Appearance：No visible damage</td><td>应沿试件的 3 个互相垂直轴，在每个方向上实施 3 次冲击试验 (共计 18 次冲击)。
脉冲波形：正弦半波
持续时长：0.5 毫秒
峰值：1500g
速度变化：4.7m/s

Three impact tests (18 shocks in total) should be performed in each direction along the three perpendicular axes of the specimen.
Pulse waveform: sinusoidal half-wave
Duration: 0.5 ms
Peak: 1500g
Speed change: 4.7m/s</td></tr>
<tr><td>19</td><td>高温存储
High Temperature Exposure</td><td>ΔC/C：
Ⅰ类　Class Ⅰ：≤±2.5%或±0.25pF，
取两者中最大者
whichever is larger.
Ⅱ类　Class Ⅱ：-12.5%~+12.5%；
DF：同初始标准
Same to initial value.；
IR：同初始标准
Same to initial value.；
外观：无可见损伤
Appearance：No visible damage</td><td>温度：125℃
实验电压：不施加电压
实验时间：1000 小时
放置条件：室温
放置时间：24 小时(Ⅰ类)；48 小时(Ⅱ类)
Temperature: 125℃
Voltage: without
Duration: 1000h
Recovery conditions: Room temperature
Recovery Time: 24h (Class1) or 48h (Class2)</td></tr>
</table>

※预处理（仅针对Ⅱ类电容器）：在 140℃~150℃下预热 1h±10min 后，在室温下放置 24±2h。

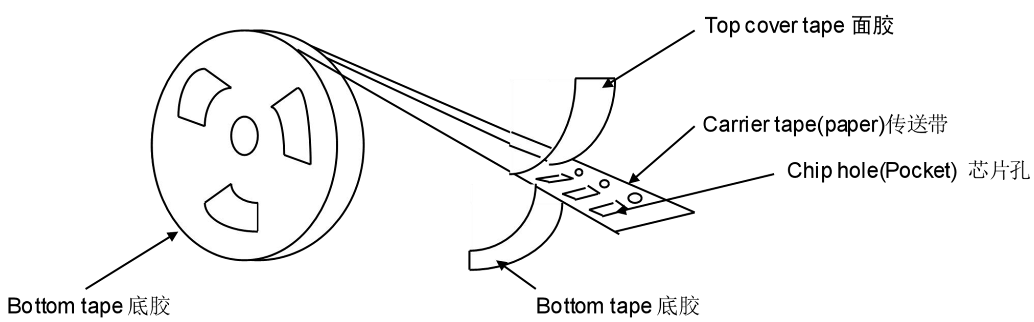
实验结束后处理（仅针对Ⅱ类电容器）：在 140℃~150℃下预热 1h±10min 后，在室温下放置 24±2h。

※Pre-conditioning (for Class II capacitors only): Preheat at 140°C to 150°C for 1 hour ±10 minutes, then store at room temperature for 24 ±2 hours.

Post-test treatment (for Class II capacitors only): Preheat at 140°C to 150°C for 1 hour ±10 minutes, then store at room temperature for 24 ±2 hours.

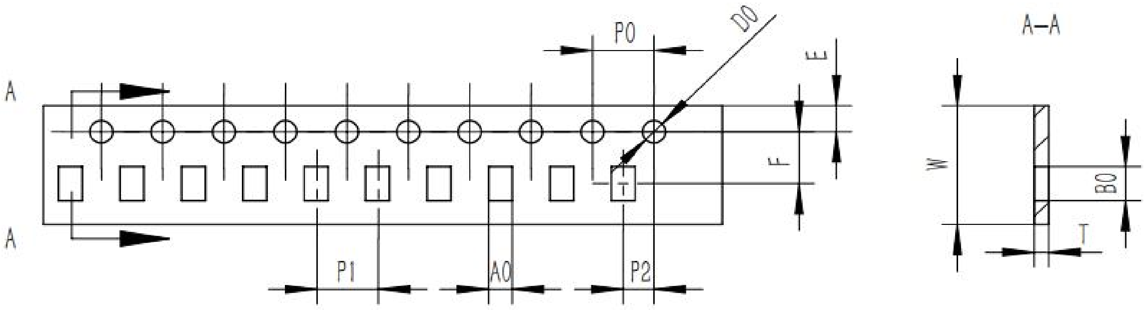
◆包装
Package

*** 纸带卷盘结构**
Paper Taping



※ 适合‘AE02’纸带编带尺寸大小

Specifications of paper taping for AE02 type

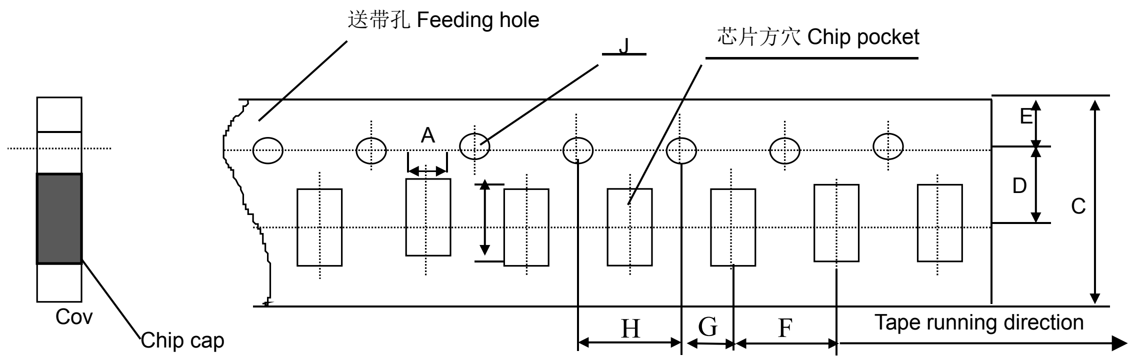


Unit：mm

代号Code 纸带规格 Paper size	A0	B0	W	F	E	P1	P2	P0	D0	T
AE02	0.65± 0.10	1.15± 0.10	8.00± 0.10	3.50± 0.05	1.75± 0.10	2.00± 0.05	2.00± 0.05	4.00±0. 10	1.50 -0/+0.10	0.80 Below

※ 适合‘AE03，AE05，AE06’常规尺寸产品的纸带尺寸

Specifications of paper taping for AE03，AE05，AE06 types.



Unit：mm

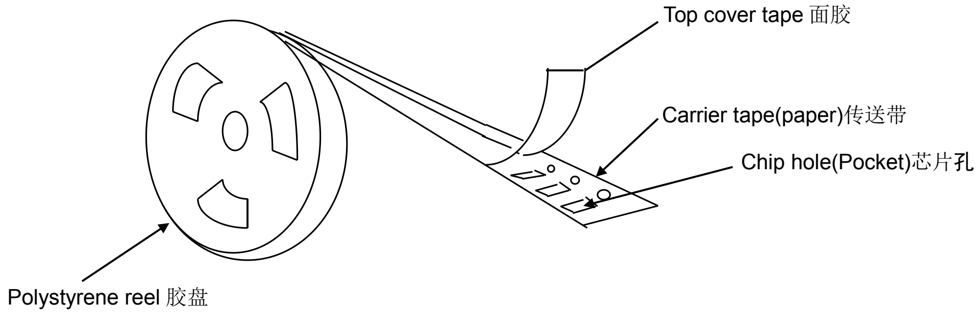
代号 Code 纸带规格 Paper size	I	B	C	D*	E	F	G*	H	J	T
AE03	1.10 ± 0.10	1.90 ± 0.10	8.00 ± 0.10	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.10 Max
AE05	1.45 ± 0.15	2.30 ± 0.15	8.0 ± 0.15	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.10 Max
AE06	1.80 ± 0.20	3.40 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.10 Max

注意：*表示此处对尺寸的要求非常精确。

Note: * Indicates that the dimensional requirement here is highly precise.

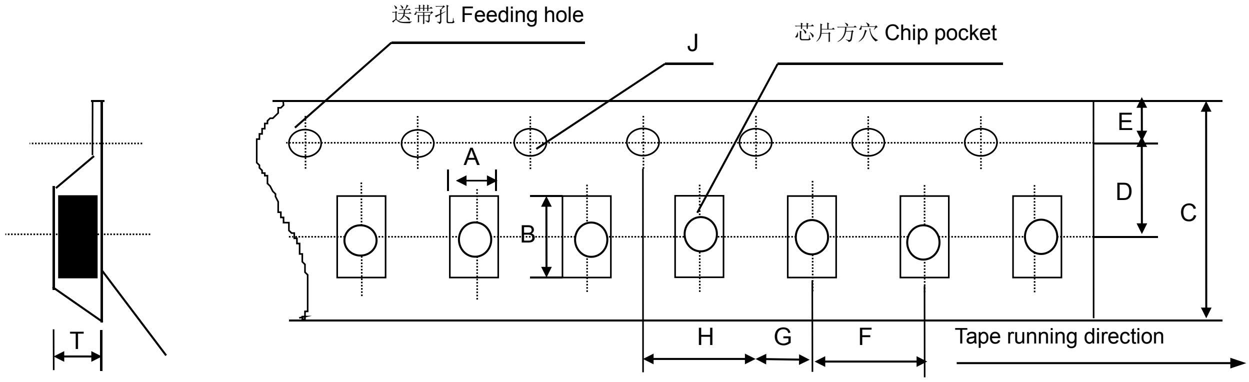
*** 塑胶卷盘结构**

Embossed Taping



※ 塑胶带尺寸结构(适合‘AE05~AE20’型产品)

Embossed Taping Dimension and Structure (suitable for 'AE05~AE20' type products).



Unit：mm

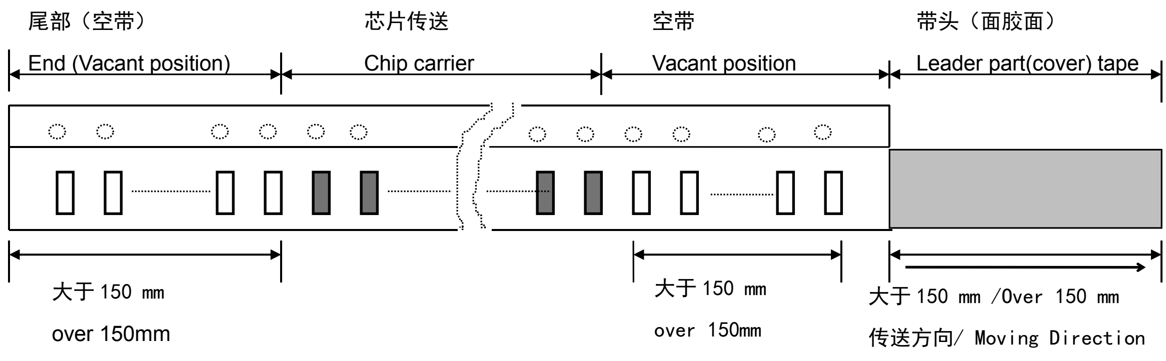
代号 Code / 规格 Tapesize	I	B	C	D*	E	F	G*	H	J	T
AE05	1.55 ± 0.20	2.35 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.50 Max
AE06	1.95 ± 0.20	3.60 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.1	1.50 -0/+0.10	1.85 Max
AE10	2.70 ± 0.10	3.42 ± 0.10	8.00 ± 0.10	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	1.55 -0/+0.10	3.2 Max
AE20	6.20 ± 0.10	6.70 ± 0.10	12.00 ± 0.10	5.50 ± 0.05	1.75 ± 0.10	8.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	1.55 -0/+0.10	2.40 ± 0.10

备注：*表示此处对尺寸的要求非常精确。

Note: * Indicates that the dimensional requirement here is highly precise.

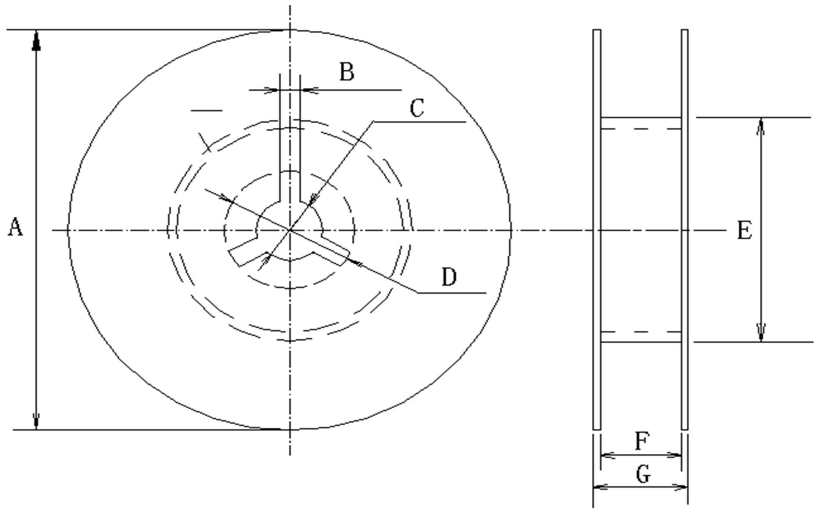
*** 传送带的前后结构**

Conveyor front and rear structure.



*** 卷盘尺寸(单位: mm)**

Reel Specifications (unit: mm)



*** 尺寸代码**

Size Code

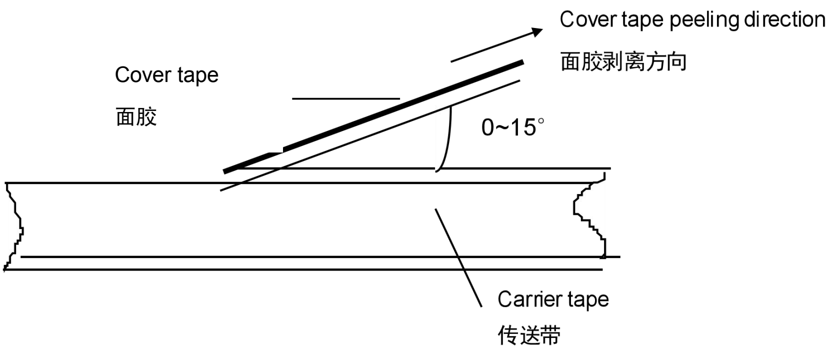
卷盘型号 Reel Type	A	B	C	D	E	F	G
7′ REEL	φ178±2.0	3.0	φ13±0.5	φ21±0.8	φ50 或更大 φ50 or larger	10.0±1.5	12max
13′ REEL	φ330±2.0	3.0	φ13±0.5	φ21±0.8	φ50 或更大 φ50 or larger	10.0±1.5	12max

* 关于卷带的说明

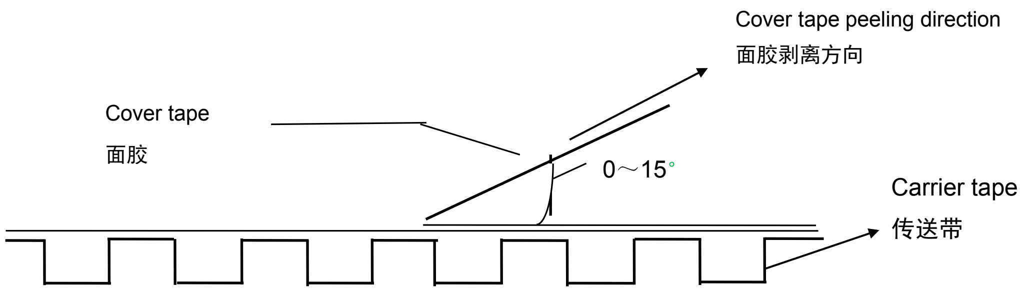
Taping specification

※ 面胶剥离强度 Top tape peeling strength

(I)纸带　Paper Taping



(II) 塑料胶盘　Embossed Taping



标准：0.1N<剥离强度<0.7N

在剥离时，纸带不能有纸碎，也不能粘在底、面胶上。

Standard: 0.1N < peeling strength < 0.7N

No paper dirty remains on the scotch when peeling and sticks to top and bottom tape.

※包装数量 Packing Quantity

尺寸代码 Size Code	厚度（T） Thickness	7 寸纸带卷盘（PT） 7-Inch Paper Tape Reel (PT)	7 寸胶带卷盘（ET） 7-Inch Plastic Tape Reel (ET)	13 寸纸带卷盘(PT) 13-Inch Paper Tape Reel (PT)	13 寸胶带卷盘(ET) 13-Inch Plastic Tape Reel (ET)
AE02	CA	10000	——	50000	——
	CB	10000	——	50000	——
	CC	10000	——	50000	——
AE03	DA	4000	——	15000	——
	DB	4000	——	15000	——
AE05	EA	4000	——	15000	——
	EB	——	3000	——	10000
AE06	FA	4000	——	15000	——
	FB	——	3000	——	10000
	FC	——	2000	——	8000
AE10	GA	——	2000	——	8000
	GB	——	2000	——	8000
	GD	——	1000	——	8000
AE20	LA	——	500	——	
	LB	——	500	——	

注意：包装的形式和数量可根据客户的要求来定。

Note：We can choose packing style and quantity can be according to the customer’s requirement.

* 外包装

Outer packing

小包装 The first package

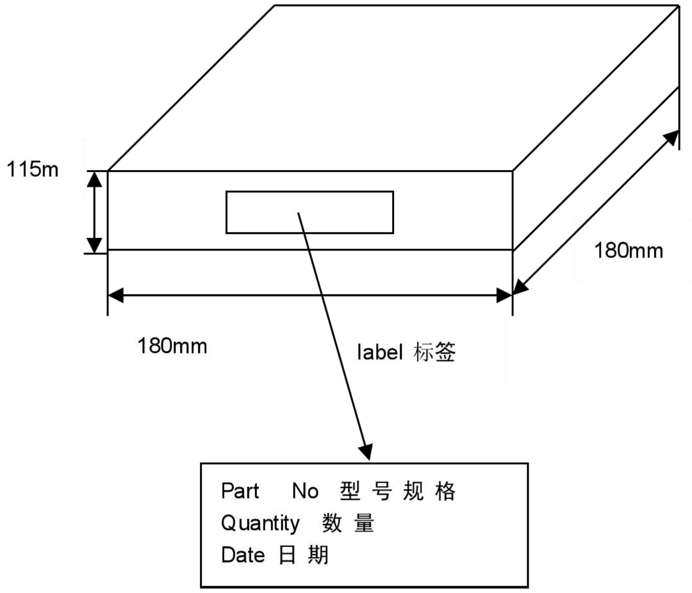
Quantity: 10 reels

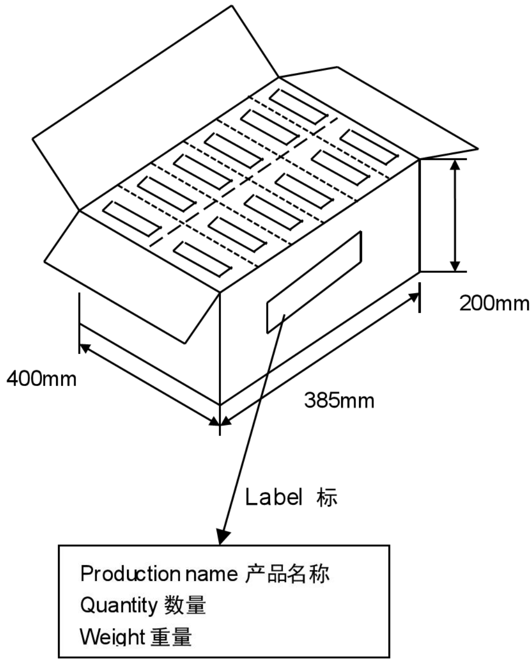
数量： 10 卷

大包装 The second package

Quantity: 6 cases

数量：6 盒





◆储存方法

Storage Methods

*MLCC 的储存条件：相对湿度为 20~70%，储存温度为 5~40℃，建议温度低于 30℃。

*MLCC 的性能可能会受到储存条件的影响，交货后请立即使用。高温高湿条件、长期储存可能会导致包装材料变质、产品端头电极氧化。如自交付后已超过六个月，使用前检查包装、外观等。如果交付后超过一年，在使用前要检查可焊性。

* 不要将电容器存放在含有腐蚀性气体(例如硫化氢、二氧化硫、氯气、氨气等)的环境中。

* 不要在阳光直射下或高湿度条件下储存电容器。

Storage Conditions for MLCC: Relative humidity: 20~70%, storage temperature: 5~40 ℃ , recommended temperature is below 30℃.

The performance of MLCCs may be affected by storage conditions. Please use immediately after delivery. High temperature and high humidity conditions, or long-term storage, may lead to packaging material deterioration and oxidation of the product's end electrodes. If it has been over six months since delivery, check the packaging and appearance before use. If it has been over a year, check the solderability before use.

Do not store capacitors in environments containing corrosive gases (e.g., hydrogen sulfide, sulfur dioxide, chlorine, ammonia, etc.).

Do not store capacitors under direct sunlight or in high humidity conditions.

◆使用前的注意事项
Precautions For Use

***安装前的信息 Pre-installation Information:**

1、不要重复使用从设备上拆下的电容器。

2、确认额定容量、额定电压等电气特性。

3、确认施加电压下的电容特性。

4、确认使用下的机械应力。

5、确认长期存放的电容器的可焊性。

6、在测量电容之前，对长期存放的电容器进行热处理。

1.Do not reuse capacitors removed from equipment.
2.Confirm electrical characteristics such as rated capacitance and rated Voltage.
3.Confirm the capacitor characteristics under applied Voltage.
4.Confirm the mechanical stress under use conditions.
5.Confirm the solderability of capacitors stored for long periods.
6.Perform heat treatment on capacitors that have been stored for a long time before measuring capacitance.

*** 应用限制 Application Restrictions**

1、我们的产品为汽车专用电子元器件，产品的设计基于正常操作和使用条件下的通用应用和标准用途。

2、除汽车及汽车相关电子产品外，在将我们的产品用于以下对应用要求特别高的场景之前，请联系我们：航空航天设备、医疗设备、原子能设备、灾难预防设备、犯罪预防设备、电加热设备、燃烧设备、公共信息网络设备、数据处理设备、军事设备、发电控制设备、安全设备、和海底设备，或用于可能导致人身伤害、死亡或严重财产损失的其他应用场景。

3、除非您事先获得风华的书面同意，否则风华不对您或第三方因将我们的产品用于第 2 点设备而产生的任何损害承担任何责任。

1.Our products are automotive-specific electronic components, and their design is based on general applications and standard uses under normal operating and usage conditions.
2.Before using our products in the following high-reliability application scenarios other than automotive and automotive-related electronic products, please contact us: aerospace equipment, medical devices, atomic energy equipment, disaster prevention equipment, crime prevention equipment, electric heating equipment, combustion equipment, military equipment, public information network devices, data processing equipment, power generation control equipment, safety equipment, and underwater equipment, or in any other application where product failure may lead to personal injury, death, or severe property damage.
3.Unless you have prior written consent from Fenghua, Fenghua is not liable for any damages caused to you or third parties by using our products in the devices mentioned in point 2

* 焊接的条件与相关图表

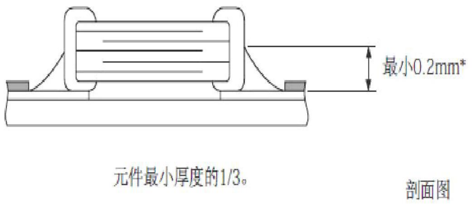
Soldering Condition and Profile

为避免因温度的突然变化而引起的芯片开裂或局部爆炸的现象发生,请按有关温度曲线图表来进行.(请参考附页中的图表)
To avoid the crack problem by sudden temperature change, follow the temperature profile in the adjacent graph (refer to the graph in the enclosure page).

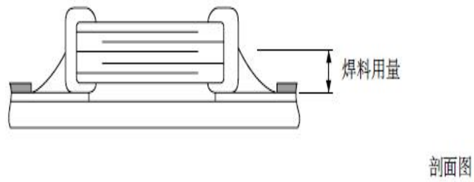
* 推荐焊料用量

Recommended Soldering Amounts

回流焊接的最佳焊料用量
The optimal solder fillet amounts
for re-flow soldering

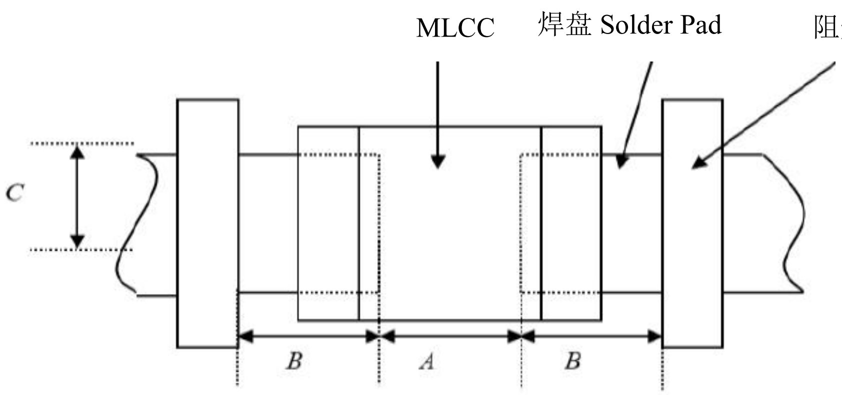


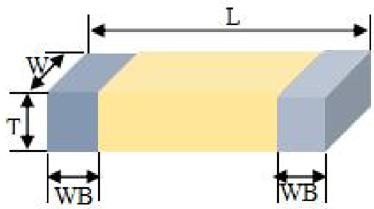
使用烙铁返修时的最佳焊料量
The optimal solder fillet amounts
for reworking by using soldering



*推荐焊盘设计

Recommended pad design





电容产品尺寸 Capacitor product size			焊盘尺寸 Pad size		
规格代码 Size Code	L	W	A	B	C
AE02	1.00±0.05	0.50±0.05	0.30~0.50	0.35~0.45	0.40~0.60
	1.00±0.15	0.50±0.15	0.40~0.60	0.40~0.50	0.50~0.70
	1.00±0.20	0.50±0.20			
AE03	1.60±0.10	0.80±0.10	0.60~0.80	0.60~0.70	0.60~0.80
	1.60±0.20	0.80±0.20	0.70~0.90	0.70~0.80	0.80~1.00
AE05	2.00±0.20	1.25±0.20	1.00~1.40	0.60~0.80	1.20~1.40
AE06	3.20±0.30	1.60±0.30	1.90~2.10	1.00~1.30	1.60~1.90
AE10	3.20±0.30	2.50±0.30	2.00~2.40	1.00~1.30	2.50~2.80

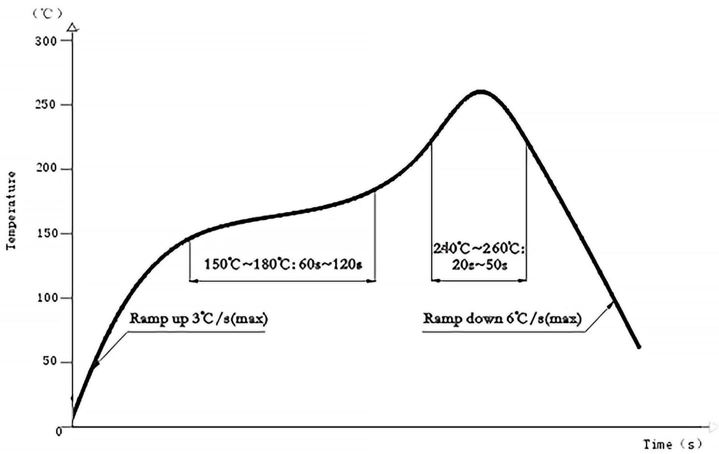
◆推荐焊接方式
Recommended Soldering Method

规格尺寸 Size	焊接方式 Soldering Method
AE02	回流焊 Reflow Soldering
AE03	回流焊 Reflow Soldering
AE05	回流焊 Reflow Soldering
AE06	回流焊 Reflow Soldering
≥AE10	回流焊 Reflow Soldering

◆推荐焊接温度曲线图
The temperature profile for soldering

*** 回流焊接**

Re-flow soldering

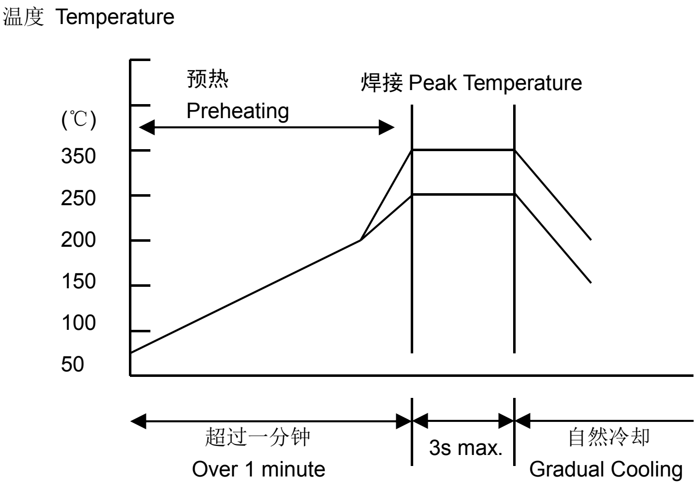


在预热时，请将焊接温度与芯片表面温度之间的温差维持在 T≤150℃。

While in preheating, please keep the temperature difference between soldering temperature and surface temperature of chips as: T≤150℃.

* **手工焊接**

Hand soldering



项目 （Item）	建议 （Suggestions）
预热 Preheating	△≤130℃
烙铁头温度 Temperature of soldering iron head	最高 350°C Highest temperature:350℃
烙铁功率 Power of soldering iron	最大 20W 20W at the highest
烙铁头直径 Diameter of soldering iron head	建议 1mm 1mm recommended
焊接时间 Soldering time	最长 3s 3s at the longest
锡膏量 Solder paste amount	≤1/2 芯片厚度 ≤1/2 chip thickness
限制条件 Restricted conditions	请勿使用烙铁头直接接触陶瓷元件 Please avoid the direct contact between soldering iron head and ceramic components

* 备注：产品规格书仅供设计选型参考用，不作为交货依据。

Note: The product specification is for design and selection reference only and shall not serve as a basis for delivery.