



◆ Feature

- * The products are specially designed and applied to industrial electronic automation equipment, network core equipment and related electronic products
- * The product has high reliability and is suitable for various electronic products with harsh application conditions, high quality requirements and low failure rate.
- * Executive Standard: GB/T 21041-2007 GB/T 21042-2007

◆How To Order

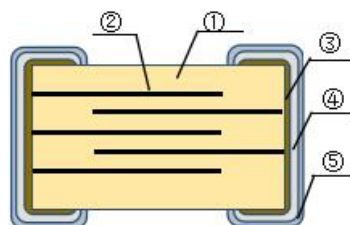
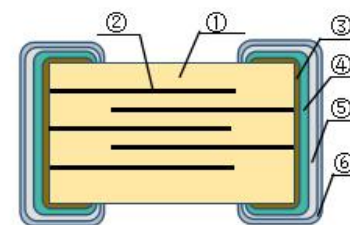
IM05			CG		101		J		500		N		T	
Size Code			Nominal Capacitance		Rated Voltage (unit): V		Package Styles							
Size Code	(L×W) inch	(L×W) mm	Express Method	Actual Value	Express Method	Actual Value	Express Method	Package Styles						
01	0.02×0.01	0.6×0.3	0R5	0.5	6R3	6.3	B	Bulk Bag						
02	0.04×0.02	1.00×0.50	1R0	1.0	500	50×10 ⁰	T	Taping Package						
03	0.06×0.03	1.60×0.80	102	10×10 ²	201	20×10 ¹								
05	0.08×0.05	2.00×1.25	Note: the first two digits are significant; third digit denotes number of zeros; R=decimal point.		Note: the first two digits are significant; third digit denotes number of zeros; R=decimal point.									
06	0.12×0.06	3.20×1.60												
10	0.12×0.10	3.20×2.50												
08	0.18×0.08	4.50×2.00												
12	0.18×0.12	4.50×3.20												

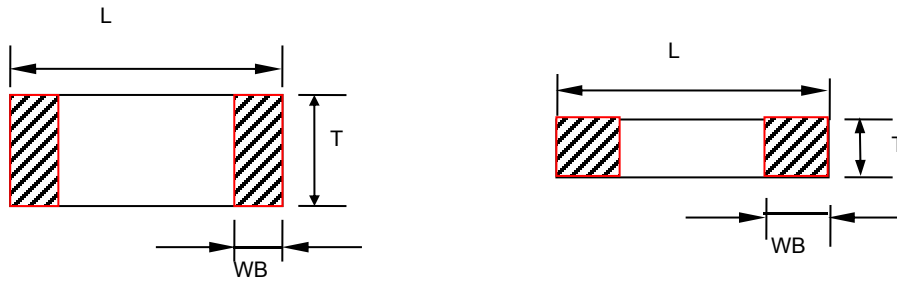
Dielectric Code	
介质种类 Dielectric Code	介质 Dielectric
CG	C0G
X	X5R
B	X7R
BS	X7S
BT	X7T
DS	X6S
DT	X6T

Capacitance Tolerance		
Code	Tolerance	Note
A	±0.05pF	These Capacitance tolerance A, B, C, D are just applicable the capacitance that equals to or less than 10pF.
B	±0.10pF	
C	±0.25pF	
D	±0.50pF	
F	±1%	
G	±2%	
J	±5%	
K	±10%	
M	±20%	
S	-20% +50%	
Z	-20% +80%	

Terminal Material Styles	
Termination Styles	Express Method
The flexible Termination	A
Nickel Barrier Termination	N

◆Product Structure

Item	N-Terminal (Cu/Ni/Sn Three-layer Terminal)	A-Terminal (Flexible Terminal)
Structure Diagram		
Code Description	①Ceramic Dielectric ②Nickel Electrode ③Copper electrode Layer ④Nickel Layer ⑤Tin Layer	①Ceramic Dielectric ②Nickel Electrode ③Copper electrode Layer ④Conductive Resin ⑤Nickel Layer ⑥Tin Layer

◆ Product Dimensions


≤50V General purpose products

Type	British expression	Metric expression	Dimensions (mm)				Special Instructions
			L	W	T	WB	
IM01	0201	0603	0.60±0.03	0.30±0.03	0.30±0.03	0.15±0.05	C<0.1 μF
			0.60±0.05	0.30±0.05	0.30±0.05	0.15±0.05	C≥0.1 μF
IM02	0402	1005	1.00±0.05	0.50±0.05	0.50±0.05	0.25±0.10	C<0.22 μF
			1.00±0.15	0.50±0.15	0.50±0.15	0.25±0.10	0.22 μF≤C<10 μF
			1.00±0.20	0.50±0.20	0.50±0.20	0.25±0.10	C≥10 μF
IM03	0603	1608	1.60±0.10	0.80±0.10	0.80±0.10	0.35±0.20	C<1 μF
			1.60±0.20	0.80±0.20	0.80±0.20	0.35±0.20	C≥1 μF
IM05	0805	2012	2.00±0.20	1.25±0.20	0.80±0.20	0.50±0.20	C<0.47 μF
					1.25±0.20		C≥0.47 μF
IM06	1206	3216	3.20±0.30	1.60±0.30	0.80±0.20	0.60±0.30	C<0.33 μF
					1.25±0.20		0.33 μF≤C<1 μF
					1.60±0.30		C≥1 μF
IM10	1210	3225	3.20±0.30	2.50±0.30	1.25±0.30	0.60±0.30	C<0.47 μF
					1.60±0.30		0.56 μF≤C<2.2 μF
					2.50±0.30		C≥2.2 μF
IM08	1808	4520	4.50±0.40	2.00±0.20	≤2.20	0.60±0.30	all
IM12	1812	4532	4.50±0.40	3.20±0.30	≤3.50	0.60±0.30	all

Note: 1、The specific thickness of the product can read “capacity range and voltage” in this approval sheet.
 2、We can design according to customer special requirements

>50V Medium and High Voltage Products

Type	British expression	Metric expression	Dimensions (mm)			
			L	W	T	WB
IM02	0402	1008	1.00±0.05	0.50±0.05	0.50±0.05	0.25±0.10
IM03	0603	1608	1.60±0.10	0.80±0.10	0.80±0.10	0.35±0.20
IM05	0805	2012	2.00±0.20	1.25±0.20	0.80±0.20 1.25±0.20	0.50±0.20
IM06	1206	3216	3.20±0.30	1.60±0.30	0.80±0.20 1.25±0.20 1.60±0.30	0.60±0.30
IM10	1210	3225	3.20±0.30	2.50±0.30	1.25±0.20 1.60±0.30 2.00±0.30 2.50±0.30	0.60±0.30
IM08	1808	4520	4.50±0.40	2.00±0.20	≤2.20	0.60±0.30
IM12	1812	4532	4.50±0.40	3.20±0.30	≤3.50	0.60±0.30

Note: 1、The specific thickness of the product can read "capacity range and voltage "in this approval sheet.

2、We can design according to customer special requirements.

◆Temperature Coefficient /Characteristics

Dielectric	Temperature Coefficient	Operation Temperature Range
C0G	0±30 ppm/°C	-55°C~125°C
X5R	±15%	-55°C~85°C
X6S	±22%	-55°C~105°C
X6T	-33%~+22%	-55°C~105°C
X7R	±15%	-55°C~125°C
X7S	±22%	-55°C~125°C
X7T	-33%~+22%	-55°C~125°C

◆ Capacitance Range and Operating Voltage

*A list of the specific voltage-specific capacitors of Class I capacitors

Dimension	IM01											
Dielectric	X7R				X7S				X7T			
Capacity/ Voltage	≤10V	16V	25V	50V	≤10V	16V	25V	50V	≤10V	16V	25V	50V
100pF	0.30±0.03 (N)				0.30±0.03 (N)				0.30±0.03 (N)			
120pF												
150pF												
180pF												
220pF												
470pF												
680pF												
1nF												
1.5nF	0.30±0.03 (N)			0.30 ± 0.03 (N)	0.30±0.03 (N)				0.30 ± 0.03 (N)	0.30 ± 0.03 (N)		
1.8nF												
2.2nF												
2.7nF												
3.3nF												
3.9nF												
4.7nF												
5.6nF												
6.8nF												
10nF												
15nF					0.30±0.03 (N)							
18nF												
22nF												
27nF												
33nF												
47nF												
100nF					0.30±0.05 (N)							
									0.30±0.05 (N)			

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM01											
Dielectric	X6S				X6T				X5R			
Capacity/ Voltage	≤10V	16V	25V	50V	≤10V	16V	25V	50V	≤10V	16V	25V	50V
100pF	0.30±0.03 (N)				0.30±0.03 (N)				0.30±0.03 (N)			
120pF												
150pF												
180pF												
220pF												
470pF												
680pF												
1nF	0.30±0.03 (N)				0.30±0.03 (N)				0.30±0.03 (N)			
1.5nF												
1.8nF												
2.2nF												
2.7nF												
3.3nF												
3.9nF												
4.7nF												
5.6nF												
6.8nF												
10nF												
15nF	0.30±0.03 (N)				0.30±0.03 (N)				0.30±0.03 (N)			
18nF												
22nF												
27nF												
33nF												
47nF												
100nF	0.30±0.05 (N)				0.30±0.05 (N)				0.30±0.05 (N)			

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

3、We can design according to customer special requirement.

Dimension	IM02														
Dielectric	X7R					X7S					X7T				
Capacity/ Voltage	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V
100pF	0.50±0.05 (A/N)					0.50±0.05 (A/N)					0.50±0.05 (N)				
120pF															
150pF															
180pF															
220pF															
470pF															
680pF															
1nF	0.50 ± 0.05 (A/N)					0.50 ± 0.05 (A/N)					0.50 ± 0.05 (A/N)				

Dimension	IM02														
	X7R					X7S					X7T				
Dielectric	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V
Capacity/ Voltage	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V
1.5nF	0.50±0.05 (A/N)					0.50 ± 0.05 (A/N)					0.50 ± 0.05 (A/N)				
1.8nF															
2.2nF															
2.7nF															
3.3nF															
3.9nF															
4.7nF															
5.6nF															
6.8nF															
10nF															
15nF															
18nF															
27nF															
33nF															
22nF															
47nF															
68nF															
100nF	0.50±0.05 (N)					0.50±0.05 (N)					0.50±0.05 (N)				
220nF						0.50±0.15 (N)					0.50±0.15 (N)				
270nF											0.50±0.15 (N)				
330nF											0.50±0.15 (N)				
470nF											0.50±0.15 (N)				
680nF											0.50 ± 0.15 (N)				
1uF											0.50 ± 0.15 (N)				

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM02														
	X6S					X6T					X5R				
Dielectric	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V
Capacity/ Voltage	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V
100pF	0.50±0.05 (N)					0.50±0.05 (N)					0.50±0.05 (A/N)				
120pF															
150pF															
180pF															
220pF															
470pF															
680pF															
1nF															
1.5nF															
1.8nF															
2.2nF															
2.7nF															
3.3nF															
3.9nF															
4.7nF															
5.6nF															
6.8nF															
10nF															

Dimension	IM02														
Dielectric	X6S					X6T					X5R				
Capacity/ Voltage	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V	≤10V	16V	25V	50V	100V
15nF	0.50±0.05 (A/N)					0.50±0.05 (A/N)					0.50±0.05 (A/N)				
18nF															
22nF															
27nF															
33nF															
47nF															
68nF	0.50±0.05 (N)					0.50±0.05 (N)					0.50±0.05 (N)				
100nF															
220nF	0.50±0.15 (N)					0.50±0.15 (N)					0.50±0.15 (N)				
270nF	0.50±0.15 (N)					0.50±0.15 (N)					0.50±0.15 (N)				
330nF															
470nF															
680nF															
1uF	0.50 ± 0.15 (N)					0.50 ± 0.15 (N)					0.50 ± 0.15 (N)				

Dimension	IM03																				
Dielectric	X7R							X7S													
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200-250V	≤6.3V	10V	16V	25V	50V	100V	200-250V							
150pF	0.80±0.10 (A/N)							0.80±0.10 (N)							0.80 ± 0.10 (N)						
180pF																					
220pF																					
470pF																					
680pF																					
1nF																					
1.5nF																					
1.8nF																					
2.2nF																					
2.7nF																					
3.3nF																					
3.9nF																					
4.7nF																					
5.6nF																					
6.8nF																					
10nF																					
15nF	0.80±0.10 (N)							0.80±0.10 (N)							0.80±0.10 (N)						
22nF																					
27nF																					
33nF																					
47nF	0.80±0.10 (N)							0.80±0.10 (N)							0.80±0.10 (N)						
56nF																					
68nF	0.80±0.10 (N)							0.80±0.10 (N)							0.80±0.10 (N)						
100nF																					
220nF	0.80±0.10 (N)							0.80±0.10 (N)							0.80±0.10 (N)						
270nF																					
330nF	0.80±0.10 (N)							0.80±0.10 (N)							0.80±0.10 (N)						
470nF																					
680nF	0.80±0.10 (N)							0.80±0.10 (N)							0.80±0.10 (N)						
1uF																					

Note: 1、Corresponding product design thickness, unit: mm "(A)" N-products "(A)" A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM03														
Dielectric	X7T							X6S							
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200-250V	10V	16V	25V	50V	100V	200V		
150pF	0.80±0.10 (A/N)							0.80±0.10 (N)	0.80±0.10 (A/N)						0.80 ± 0.10 (N)
180pF															
220pF															
470pF															
680pF															
1nF															
1.5nF															
1.8nF															
2.2nF															
2.7nF															
3.3nF															
3.9nF															
4.7nF															
5.6nF															
6.8nF															
10nF															
15nF															
18nF															
22nF															
27nF															
33nF															
47nF															
56nF															
68nF															
100nF	0.80±0.10 (N)								0.80±0.10 (N)						
220nF	0.80±0.10 (N)								0.80±0.10 (N)						
270nF															
330nF															
470nF															
680nF	0.80±0.20 (N)								0.80±0.20 (N)						
1uF															
1.5uF	0.80±0.20 (N)														
2.2uF															
3.3uF	0.80±0.20 (N)														
4.7uF															
6.8uF	0.80 ± 0.20 (N)														
10uF															

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM03																				
Dielectric	X6T							X5R													
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200V	≤6.3V	10V	16V	25V	50V	100V	200-250V							
150pF	0.80±0.10 (N)							0.80±0.10 (A/N)							0.80±0.10 (N)						
180pF																					
220pF																					
470pF																					
680pF																					
1nF																					
1.5nF																					
1.8nF																					
2.2nF																					
2.7nF																					
3.3nF																					
3.9nF																					
4.7nF																					
5.6nF																					
6.8nF																					
10nF																					
15nF	0.80±0.10 (N)						0.80±0.10 (N)							0.80±0.10 (N)							
18nF																					
22nF																					
27nF																					
33nF																					
47nF																					
56nF																					
68nF																					
100nF																					
220nF	0.80±0.10 (N)						0.80±0.10 (N)														
270nF																					
330nF																					
470nF																					
680nF																					
1uF	0.80±0.20 (N)						0.80±0.20 (N)														
1.5uF	0.80±0.20 (N)						0.80±0.20 (N)														
2.2uF																					
3.3uF	0.80±0.20 (N)						0.80±0.20 (N)														
4.7uF																					
6.8uF	0.80 ± 0.20 (N)							0.80±0.20 (N)													
10uF																					

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A-terminal products.

2、We can design according to customer special requirement.

Dimension	IM05																							
Dielectric	X7R								X7S															
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V								
150pF	0.80±0.20 (A/N)								0.80±0.20 (A/N)								0.80±0.20 (N)							
180pF																								
220pF																								
470pF																								
680pF																								
1nF	0.80±0.20 (A/N)								0.80±0.20 (A/N)								0.80±0.20 (N)							
1.5nF																								
1.8nF																								
2.2nF																								
2.7nF																								
3.3nF																								
3.9nF																								
4.7nF																								
5.6nF																								
6.8nF																								
10nF	0.80±0.20 (A/N)								0.80±0.20 (A/N)								0.80±0.20 (N)							
15nF																								
18nF																								
22nF																								
27nF																								
33nF																								
47nF																								
56nF																								
68nF																								
100nF																								
220nF	0.80±0.20 (N)								0.80±0.20 (N)								0.80±0.20 (N)							
270nF																								
330nF																								
470nF																								
680nF																								
1uF	1.25±0.20 (N)								1.25±0.20 (N)								1.25±0.20 (N)							
1.5uF																								
2.2uF																								

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM05																							
Dielectric	X7T																							
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V																
150pF	0.80±0.20 (A/N)								0.80±0.20 (N)								0.80±0.20 (N)							
180pF																								
220pF																								
470pF																								
680pF																								
1nF	0.80±0.20 (A/N)								0.80±0.20 (N)								0.80±0.20 (N)							
1.5nF																								
1.8nF																								
2.2nF																								
2.7nF																								

Dimension	IM05								
Dielectric	X7T								
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V	
3.3nF	0.80±0.20 (A/N)				0.80±0.20 (N)		0.80 ± 0.20 (N)	1.25 ± 0.20 (N)	
3.9nF									
4.7nF									
5.6nF									
6.8nF									
10nF									
15nF									
18nF									
22nF									
27nF									
33nF							1.25 ± 0.20 (N)		
47nF									
56nF									
68nF									
100nF					0.80 ± 0.20 (N)	1.25 ± 0.20 (N)			
220nF	0.80±0.20 (N)								
270nF									
330nF									
470nF	1.25±0.20 (N)								
680nF									
1uF									
1.5uF	1.25±0.20 (N)								
2.2uF									
3.3uF	1.25±0.20 (N)								
4.7uF									
6.8uF	1.25±0.20 (N)								
10uF									
22uF	1.25 ± 0.20 (N)								

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM05								
Dielectric	X6S/X6T								
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V	1000V
150pF	0.80±0.20 (N)						0.8 ± 0.20 (N)		
180pF									
220pF									
470pF									
680pF									
1nF									
1.5nF									
1.8nF							1.25 ± 0.20 (N)		

Dimension	IM05									
Dielectric	X6S/X6T									
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V	1000V	
2.2nF	0.80±0.20 (N)						1.25 ± 0.20 (N)	0.8 ± 0.20 (N)	1.25 ± 0.20 (N)	
2.7nF										
3.3nF										
3.9nF										
4.7nF										
5.6nF										
6.8nF										
10nF										
15nF										
18nF										
22nF										
27nF										
33nF										
47nF										
56nF										
68nF	0.80±0.20 (N)				1.25±0.20 (N)		1.25 ± 0.20 (N)			
100nF										
220nF										
270nF										
330nF	1.25±0.20 (N)									
470nF										
680nF										
1uF	1.25±0.20 (N)									
1.5uF										
2.2uF										
3.3uF	1.25±0.20 (N)									
4.7uF										
6.8uF	1.25±0.20 (N)									
10uF										
22uF	1.25± 0.20 (N)									

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM05								
Dielectric	X5R								
Capacity/ Voltage	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V	
150pF	0.80±0.20 (A/N)					0.80± 0.20 (A/N)	0.80±0.20 (N)	1.25±0.20 (N)	
180pF									
220pF									
470pF									
680pF									
1nF									
1.5nF									
1.8nF									
2.2nF									
2.7nF									
3.3nF									
3.9nF									
4.7nF									
5.6nF									
6.8nF									
10nF									
15nF									
18nF									
22nF									
27nF									
33nF									
47nF									
56nF									
68nF									
100nF									
220nF	0.80±0.20 (N)					1.25±0.20 (N)			
270nF									
330nF	1.25±0.20 (N)								
470nF									
680nF									
1uF									
1.5uF	1.25±0.20 (N)								
2.2uF									
3.3uF	1.25±0.20 (N)								
4.7uF									
6.8uF	1.25±0.20 (N)								
10uF									
22uF	1.25±0.20 (N)								

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM06																	
Dielectric	X7R																	
Capacity/ Voltage	4V	6.3V	10V	16V	25V	50V	100V	200~250V	500~630V	1000V	2000V	2500V						
100pF							0.80 ± 0.20 (A/N)	0.80 ± 0.20 (A/N)	0.80 ± 0.20 (A/N)	0.80 ± 0.20 (A/N)	1.25 ± 0.20 (N)							
120pF																		
150pF																		
180pF																		
220pF	0.80±0.20 (A/N)																	
470pF																		
680pF																		

Dimension	IM06												
Dielectric	X7R												
Capacity/ Voltage	4V	6.3V	10V	16V	25V	50V	100V	200~250V	500~630V	1000V	2000V	2500V	
1nF		0.80±0.20 (A/N)					0.80 ± 0.20 (A/N)	0.80 ± 0.20 (A/N)	0.80 ± 0.20 (A/N)	1.25 ± 0.20 (N)	0.80 ± 0.20 (N)	1.25 ± 0.20 (N)	1.25 ± 0.20 (N)
1.5nF													
1.8nF													
2.2nF													
2.7nF													
3.3nF													
3.9nF													
4.7nF													
5.6nF													
6.8nF													
10nF													
15nF													
18nF													
22nF													
27nF													
33nF													
47nF													
56nF													
68nF													
100nF													
150nF													
220nF		0.80±0.20 (N)					1.25 ± 0.20 (N)	1.60 ± 0.30 (N)					
270nF													
330nF													
470nF		1.25±0.20 (N)					1.60 ± 0.30 (N)	1.60 ± 0.30 (N)					
680nF													
1uF	1.60±0.30 (N)						1.60 ± 0.30 (N)						
1.5uF													
2.2uF													
3.3uF	1.60±0.30 (N)												
4.7uF													

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM06											
Dielectric	X7S											
Capacity/ Voltage	4V	6.3V	10V	16V	25V	50V	100V	200~250V	500~630V	1000V	2000V	2500V
100pF												
120pF												
150pF												
180pF												
220pF										0.80 ± 0.20 (N)		
470pF										0.80 ± 0.20 (N)		
680pF										0.80 ± 0.20 (N)		
1nF										1.25 ± 0.20 (N)	1.25 ± 0.20 (N)	1.25 ± 0.20 (N)
1.5nF												
1.8nF												
2.2nF												
2.7nF												
3.3nF												
3.9nF												
4.7nF												
5.6nF												
6.8nF												
10nF												
15nF												
18nF												
22nF												
27nF												
33nF												
47nF												
56nF												
68nF												
100nF												
150nF												
220nF												
270nF												
330nF												
470nF												
680nF												
1uF												
1.5uF												
2.2uF												
3.3uF												
4.7uF												
6.8uF												

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM06											
Dielectric	X7T											
Capacity/ Voltage	4V	6.3V	10V	16V	25V	50V	100V	200~250V	500~630V	1000V	2000V	2500V
100pF												
120pF												
150pF												
180pF												
220pF										0.80 ± 0.20 (N)		
470pF												
680pF												
1nF											1.25 ± 0.20 (N)	1.25 ± 0.20 (N)
1.5nF												
1.8nF												
2.2nF												
2.7nF												
3.3nF												
3.9nF												
4.7nF												
5.6nF												
6.8nF												
10nF												
15nF												
18nF												
22nF												
27nF												
33nF												
47nF												
56nF												
68nF												
100nF												
150nF												
220nF												
270nF												
330nF												
470nF												
680nF												
1uF												
1.5uF												
2.2uF												
3.3uF												
4.7uF												
6.8uF												
10uF												
22uF												
47uF												
100uF												

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM06											
Dielectric	X6S											
Capacity/ Voltage	4V	6.3V	10V	16V	25V	50V	100V	200~250V	500~630V	1000V	2000V	
100pF												
120pF												
150pF												
180pF												
220pF	0.80±0.20 (N)								0.80 ± 0.20 (N)	0.80 ± 0.20 (N)	0.80 ± 0.20 (N)	1.25±0.20 (N)
470pF												
680pF												
1nF												
1.5nF												
1.8nF												
2.2nF												
2.7nF												
3.3nF												
3.9nF												
4.7nF												
5.6nF						0.80 ± 0.20 (N)			1.25 ± 0.20 (N)			
6.8nF								1.25 ± 0.20 (N)			1.60±0.30 (N)	
10nF												
15nF												
18nF												
22nF												
27nF												
33nF												
47nF								1.25 ± 0.20 (N)	1.60 ± 0.30 (N)			
56nF												
68nF												
100nF							1.25 ± 0.20 (N)	1.60 ± 0.30 (N)				
150nF												
220nF												
270nF												
330nF								1.60 ± 0.30 (N)				
470nF												
680nF												
1uF	1.60 ± 0.30 (N)	1.60 ± 0.30 (N)	1.60 ± 0.30 (N)	1.60±0.30 (N)			1.60 ± 0.30 (N)					
1.5uF												
2.2uF												
3.3uF												
4.7uF												
6.8uF												
10uF												
22uF												
47uF												
100uF												

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM06															
Dielectric	X6T															
Capacity/ Voltage	4V	6.3V	10V	16V	25V	50V	100V	200~250V	500~630V	1000V	2000V					
100pF																
120pF																
150pF																
180pF																
220pF	0.80±0.20 (N)															
470pF																
680pF																
1nF																
1.5nF																
1.8nF																
2.2nF																
2.7nF																
3.3nF																
3.9nF																
4.7nF																
5.6nF																
6.8nF																
10nF																
15nF																
18nF																
22nF																
27nF																
33nF																
47nF																
56nF																
68nF																
100nF																
150nF																
220nF																
270nF																
330nF																
470nF																
680nF																
1uF																
1.5uF																
2.2uF																
3.3uF	1.60 ± 0.30 (N)	1.60 ± 0.30 (N)	1.60 ± 0.30 (N)	1.60±0.30 (N)			1.60 ± 0.30 (N)									
4.7uF																
6.8uF																
10uF																
22uF																
47uF																
100uF																

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM06											
Dielectric	X5R											
Capacity/ Voltage	4V	6.3V	10V	16V	25V	50V	100V	200~250V	500~630V	1000V	2000V	2500V
100pF												
120pF												
150pF												
180pF												
220pF												
470pF												
680pF												
1nF												
1.5nF												
1.8nF												
2.2nF												
2.7nF												
3.3nF												
3.9nF												
4.7nF												
5.6nF												
6.8nF												
10nF												
15nF												
18nF												
22nF												
27nF												
33nF												
47nF												
56nF												
68nF												
100nF												
150nF												
220nF												
270nF												
330nF												
470nF												
680nF												
1uF												
1.5uF												
2.2uF												
3.3uF												
4.7uF												
6.8uF												
10uF												
22uF												
47uF												
100uF												

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM10						
Dielectric	X7R						
Capacity/ Voltage	25V	50V	100V	200V~250V	500V~630V	1000V	2000V
220pF	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)
470pF							
680pF							
1nF							
1.5nF							
1.8nF							
2.2nF							
2.7nF							
3.3nF							
3.9nF							
4.7nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	
5.6nF							
6.8nF							
10nF							
15nF							
18nF							
22nF							
27nF							
33nF							
47nF							
56nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	
68nF							
100nF							
150nF							
220nF							
270nF							
330nF							
470nF							
680nF							
1uF							
1.5uF	2.50±0.30 (N)	2.50±0.30 (N)	2.50±0.30 (N)	2.50±0.30 (N)	2.50±0.30 (N)	2.50±0.30 (N)	
2.2uF							
3.3uF							
4.7uF							

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM10						
Dielectric	X7S						
Capacity/ Voltage	25V	50V	100V	200V~250V	500V~630V	1000V	2000V
220pF	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)
470pF							
680pF							
1nF							
1.5nF							
1.8nF							
2.2nF							
2.7nF							
3.3nF							
3.9nF							
Dimension	IM10						
Dielectric	X7S						

Capacity/ Voltage	25V	50V	100V	200V~250V	500V~630V	1000V	2000V			
4.7nF	1.25±0.30 (N)		1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)			
5.6nF										
6.8nF										
10nF										
15nF										
18nF										
22nF					2.00±0.30 (N)					
27nF										
33nF										
47nF										
56nF										
68nF					1.60±0.30 (N)					
100nF										
150nF										
220nF										
270nF										
330nF	1.60±0.30 (N)									
470nF										
680nF										
1uF										
1.5uF										
2.2uF	2.50±0.30 (N)									
3.3uF										
4.7uF										

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM10												
Dielectric	X7T												
Capacity/ Voltage	25V	50V	100V	200V~250V	500V~630V	1000V	2000V						
220pF	1.25±0.30 (N)		1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)						
470pF													
680pF													
1nF													
1.5nF													
1.8nF													
2.2nF													
2.7nF													
3.3nF													
3.9nF													
4.7nF													
5.6nF								1.60±0.30 (N)					1.60±0.30 (N)
6.8nF													
10nF													
15nF													
18nF													
22nF	1.60±0.30 (N)												
27nF													
33nF													
47nF													

Dimension	IM10						
Dielectric	X7T						
Capacity/ Voltage	25V	50V	100V	200V~250V	500V~630V	1000V	2000V
56nF	1.25±0.30 (N)		1.25±0.30 (N)		1.60±0.30 (N)		
68nF							
100nF							
150nF			2.00±0.30 (N)				
220nF							
270nF							
330nF							
470nF	1.60±0.30 (N)						
680nF							
1uF	1.60±0.30 (N)						
1.5uF							
2.2uF	2.50±0.30 (N)						
3.3uF							
4.7uF	2.50±0.30 (N)						
6.8uF							
10uF							

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM10									
Dielectric	X6S					X6T				
Capacity/ Voltage	100V	200~250V	500~630V	1000V	2000V	100V	200~250V	500~630V	1000V	2000V
220pF	1.25±0.20 (N)	1.25±0.20 (N)	1.25±0.20 (N)	1.25±0.20 (N)	1.60±0.30 (N)	1.25±0.20 (N)	1.25±0.20 (N)	1.25±0.20 (N)	1.60±0.30 (N)	1.60±0.30 (N)
470pF										
680pF										
1nF										
1.5nF										
1.8nF										
2.2nF										
2.7nF										
3.3nF										
3.9nF										
4.7nF										
5.6nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	
6.8nF										
10nF										
15nF										
18nF										
22nF										
27nF										
33nF										
47nF										
56nF										
68nF										
100nF	2.00±0.30 (N)									
150nF										
220nF										
270nF										
330nF	1.60±0.30 (N)									

470nF										
Dimension	IM10									
Dielectric	X6S					X6T				
Capacity/ Voltage	100V	200~250V	500~630V	1000V	2000V	100V	200~250V	500~630V	1000V	2000V
680nF	1.60±0.30 (N)					1.60±0.30 (N)				
1uF										
1.5uF	2.50±0.30 (N)									
2.2uF						2.50±0.30 (N)				
3.3uF										
4.7uF										

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM10						
Dielectric	X5R						
Capacity/ Voltage	25V	50V	100V	200V~250V	500V~630V	1000V	2000V
220pF	1.25±0.30 (N)		1.25±0.30 (N)	1.25±0.30 (N)	1.25±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)
470pF							
680pF							
1nF							
1.5nF							
1.8nF							
2.2nF							
2.7nF							
3.3nF							
3.9nF							
4.7nF							
5.6nF							
6.8nF							
10nF							
15nF							
18nF							
22nF	1.60±0.30 (N)	2.50±0.30 (N)	2.50±0.30 (N)	2.00±0.30 (N)			
27nF							
33nF							
47nF							
56nF							
68nF							
100nF							
150nF							
220nF							
270nF							
330nF							
470nF							
680nF							
1uF							
1.5uF							
2.2uF							
3.3uF							
4.7uF							
6.8uF							
10uF							
22uF							

Dimension	IM08								
Dielectric	X7R								
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V
100pF									
120pF									
150pF									
180pF									
220pF								1.60±0.30 (N)	1.60±0.30 (N)
470pF									
680pF									
1nF									
1.5nF									
1.8nF									
2.2nF									
2.7nF									
3.3nF									
3.9nF									
4.7nF									
5.6nF									
6.8nF		1.60±0.30 (N)	1.60±0.30 (N)						
10nF									
15nF	1.60±0.30 (N)								
18nF									
22nF									
27nF									
33nF									
47nF									
56nF									
68nF									
100nF									
150nF									
220nF									
270nF									
330nF									
470nF									
680nF									
1uF									
1.5uF									
2.2uF									
3.3uF									
4.7uF									

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM08								
Dielectric	X7S								
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V
100pF									
120pF									
150pF									
180pF									
220pF								1.60±0.30 (N)	1.60±0.30 (N)
470pF									
680pF									
1nF									
1.5nF									
1.8nF									
2.2nF									
2.7nF									
3.3nF									
3.9nF									
4.7nF									
5.6nF									
6.8nF		1.60±0.30 (N)	1.60±0.30 (N)						
10nF									
15nF	1.60±0.30 (N)								
18nF									
22nF									
27nF									
33nF									
47nF									
56nF									
68nF									
100nF									
150nF									
220nF									
270nF									
330nF									
470nF									
680nF									
1uF									
1.5uF									
2.2uF									
3.3uF									
4.7uF									

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM08								
Dielectric	X7T								
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V
100pF									
120pF									
150pF									
180pF									
220pF								1.60±0.30 (N)	1.60±0.30 (N)
470pF									
680pF									
1nF									
1.5nF									
1.8nF									
2.2nF									
2.7nF									
3.3nF									
3.9nF									
4.7nF									
5.6nF									
6.8nF		1.60±0.30 (N)	1.60±0.30 (N)						
10nF									
15nF	1.60±0.30 (N)								
18nF									
22nF									
27nF									
33nF									
47nF									
56nF									
68nF									
100nF									
150nF									
220nF									
270nF									
330nF									
470nF									
680nF									
1uF									
1.5uF									
2.2uF									
3.3uF									
4.7uF									

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM08									
Dielectric	X6S					X6T				
Capacity/ Voltage	500~630V	1000V	2000V	3000V	5000V	500~630V	1000V	2000V	3000V	5000V
100pF										
120pF										
150pF										
180pF										
220pF					1.60±0.30 (N)					1.60±0.30 (N)
470pF										
680pF										
1nF										
1.5nF			1.60±0.30 (N)					1.60±0.30 (N)		
1.8nF										
2.2nF										
2.7nF										
3.3nF	1.60±0.30 (N)									
3.9nF										
4.7nF										
5.6nF										
6.8nF										
10nF										
15nF										
18nF										
22nF										
27nF										
33nF										
47nF	1.60±0.30 (N)					1.60±0.30 (N)				

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM08									
Dielectric	X5R									
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V	
100pF										
120pF										
150pF										
180pF										
220pF										
470pF								1.60±0.30 (N)	1.60±0.30 (N)	
680pF										
1nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)		1.60±0.30 (N)	1.60±0.30 (N)			
1.5nF					1.60±0.30 (N)					
1.8nF										
2.2nF										
2.7nF										
3.3nF										
3.9nF										
4.7nF										
5.6nF										

Dimension	IM08								
Dielectric	X5R								
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V
6.8nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)			
10nF									
15nF									
18nF									
22nF									
27nF									
33nF									
47nF									
56nF									
68nF									
100nF									
150nF									
220nF									
270nF									
330nF									
470nF									
680nF									
1uF									
1.5uF									
2.2uF									
3.3uF									
4.7uF									

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM12									
Dielectric	X7R									
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V	
150pF										
180pF										
220pF										
330pF										
470pF	1.60±0.30 (N)									
680pF										
1nF										
1.5nF										
1.8nF										
2.2nF					1.60±0.30 (N)		1.60±0.30 (N)	1.60±0.30 (N)		2.00±0.30 (N)
2.7nF						1.60±0.30 (N)				
3.3nF				1.60±0.30 (N)						
3.9nF										
4.7nF										
5.6nF							2.50±0.30 (N)			
6.8nF										
10nF										
15nF		1.60±0.30 (N)				2.00±0.30 (N)				
18nF										
22nF										

Dimension	IM12											
Dielectric	X7R											
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V			
27nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)							
33nF												
47nF												
56nF									2.00±0.30 (N)			
68nF												
100nF												
150nF								2.00±0.30 (N)				
220nF												
270nF												
330nF												
470nF			2.00±0.30 (N)									
680nF												
1uF		2.00±0.30 (N)										
1.5uF	2.50±0.30 (N)											
2.2uF												
3.3uF												
4.7uF												
6.8uF												

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM12									
Dielectric	X7S									
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V	
150pF										
180pF										
220pF										
330pF										
470pF	1.60±0.30 (N)									
680pF										
1nF								1.60±0.30 (N)	1.60±0.30 (N)	
1.5nF										
1.8nF										
2.2nF										2.00±0.30 (N)
2.7nF					1.60±0.30 (N)					
3.3nF						1.60±0.30 (N)				
3.9nF				1.60±0.30 (N)						
4.7nF										
5.6nF										
6.8nF								2.50±0.30 (N)		
10nF										
15nF										
18nF		1.60±0.30 (N)								
22nF										
27nF										
33nF										

Dimension	IM12											
Dielectric	X7S											
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V			
47nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	2.00±0.30 (N)							
56nF												
68nF												
100nF												
150nF												
220nF						2.00±0.30 (N)						
270nF												
330nF					2.00±0.30 (N)							
470nF												
680nF												
1uF		2.00±0.30 (N)										
1.5uF												
2.2uF	2.50±0.30 (N)											
3.3uF												
4.7uF												
6.8uF												

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM12										
Dielectric	X7T										
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V		
150pF											
180pF											
220pF											
330pF											
470pF	1.60±0.30 (N)										
680pF							1.60±0.30 (N)	1.60±0.30 (N)			
1nF											
1.5nF											
1.8nF											
2.2nF									1.60±0.30 (N)		2.00±0.30 (N)
2.7nF											
3.3nF						1.60±0.30 (N)					
3.9nF					1.60±0.30 (N)						
4.7nF											
5.6nF			1.60±0.30 (N)				2.50±0.30 (N)				
6.8nF											
10nF											
15nF		1.60±0.30 (N)				2.00±0.30 (N)					
18nF											
22nF											
27nF											
33nF											
47nF					2.00±0.30 (N)						
56nF											
68nF											
100nF											

Dimension	IM12								
Dielectric	X7T								
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V
150nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	2.00±0.30 (N)					
220nF									
270nF									
330nF		2.00±0.30 (N)							
470nF									
680nF									
1uF	2.50±0.30 (N)	2.00±0.30 (N)							
1.5uF									
2.2uF									
3.3uF									
4.7uF									
6.8uF									

- Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.
 2、We can design according to customer special requirement.

Dimension	IM12						
Dielectric	X6S						
Capacity/ Voltage	100V	200~250V	500~630V	1000V	2000V	3000V	5000V
150pF						1.60±0.30 (N)	
180pF							
220pF							
470pF							
680pF		1.60±0.30 (N)					
1nF							
1.5nF							
1.8nF							
2.2nF							
2.7nF							
3.3nF							
3.9nF							
4.7nF							
5.6nF							
6.8nF							
10nF	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)	1.60±0.30 (N)			
15nF							
18nF							
22nF							
27nF							
33nF							
47nF							
56nF							
68nF							
100nF							
150nF							
220nF							
270nF							
330nF							
470nF							
680nF	2.00±0.30 (N)	2.00±0.30 (N)					
1uF							
1.5uF							
2.2uF							

Dimension	IM12						
Dielectric	X6T						
Capacity/ Voltage	100V	200~250V	500~630V	1000V	2000V	3000V	5000V
150pF							
180pF							
220pF							
470pF							
680pF							
1nF							
1.5nF							
1.8nF							
2.2nF							
2.7nF							
3.3nF							
3.9nF							
4.7nF							
5.6nF							
6.8nF							
10nF							
15nF							
18nF							
22nF							
27nF							
33nF							
47nF							
56nF	1.60±0.30 (N)						
68nF							
100nF							
150nF							
220nF							
270nF							
330nF							
470nF							
680nF							
1uF							
1.5uF							
2.2uF							

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dimension	IM12								
Dielectric	X5R								
Capacity/ Voltage	50V	100V	200-250V	500-630V	1000V	2000V	3000V	4000V	5000V
150pF									
180pF									
220pF									
330pF									
470pF									
680pF									
1nF							1.60±0.30 (N)	1.60±0.30 (N)	
1.5nF									
1.8nF									
2.2nF							1.60±0.30 (N)		2.00±0.30 (N)
2.7nF									
3.3nF									
3.9nF									
4.7nF									
5.6nF									
6.8nF									
10nF									
15nF	1.60±0.30 (N)								
18nF									
22nF									
27nF									
33nF									
47nF									
56nF									
68nF									
100nF									
150nF									
220nF									
270nF									
330nF									
470nF									
680nF									
1uF									
1.5uF									
2.2uF									
3.3uF	2.50±0.30 (N)								
4.7uF									
6.8uF									

Note: 1、Corresponding product design thickness, unit: mm “(A)” N-products “(A)” A- terminal products.

2、We can design according to customer special requirement.

Dielectric Dimension	COG(NPO)										
	IM01					IM02					
Capacity/Voltage	≤10V	16V	25V	50V	≤10V	16V	25V	50V	100V		
0.1pF	0.3±0.03					0.50±0.05					
0.22pF											
0.3pF											
0.47pF											
3.3pF											
3.6pF											
3.9pF											
4.7pF											
5.0pF											
5.6pF											
6.8pF											
8.0pF											
8.2pF											
10pF											
22pF											
27pF											
33pF											
39pF											
47pF											
56pF											
68pF											
100pF											
120pF											
150pF											
180pF											
220pF											
270pF					0.50±0.05						
330pF											
390pF											
470pF											
560pF											
680pF											
1nF											
1.2nF											
1.5nF											
2.2nF											
2.7nF											
3.3nF											

Note: 1、Corresponding product design thickness , unit: mm 2、 We can design according to customer special requirement

Dielectric Dimension	COG(NPO)														
	IM03						IM05								
Capacity/Voltage	≤10V	16V	25V	50V	100V	200V	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V	1000V
0.1pF	0.80±0.10						0.80±0.20						0.80±0.20	0.80±0.20	1.25 ± 0.20
0.22pF															
0.3pF															
0.47pF															
3.3pF															
3.6pF															
3.9pF															
4.7pF															
5.0pF															
5.6pF															
6.8pF															
8.0pF															

Dielectric Dimension	COG(NPO)																	
	IM03						IM05											
Capacity/Voltage	≤10V	16V	25V	50V	100V	200V	≤6.3V	10V	16V	25V	50V	100V	200-250V	500-630V	1000V			
8.2pF	0.80±0.10						0.80±0.20									0.80±0.20	0.80±0.20	1.25 ± 0.20
10pF																		
22pF																		
27pF																		
33pF																		
39pF																		
47pF																		
56pF																		
68pF																		
100pF																		
120pF																		
150pF																		
180pF																		
220pF																		
270pF																		
330pF																		
390pF																		
470pF																		
560pF	0.80±0.10						0.80±0.20									0.80±0.20	0.80±0.20	1.25 ± 0.20
680pF																		
1nF	0.80±0.10						0.80±0.20									0.80±0.20	0.80±0.20	1.25 ± 0.20
1.2nF																		
1.5nF																		
2.2nF	0.80±0.10						0.80±0.20									0.80±0.20	0.80±0.20	1.25 ± 0.20
2.7nF																		
3.3nF	0.80±0.10						0.80±0.20									0.80±0.20	0.80±0.20	1.25 ± 0.20

Note: 1、Corresponding product design thickness , unit: mm 2、 We can design according to customer special requirement

Dielectric Dimension	COG(NPO)																			
	IM06											IM10								
Capacity/Voltage	4V	6.3V	10V	16V	25V	50V	100V	200-250V	500-630V	1000V	2000V	3000V	100V	200-250V	500-630V	1000V	2000V			
0.1pF	0.80±0.20											0.80 ± 0.20					0.80 ± 0.20	0.80 ± 0.20	1.25 ± 0.20	1.25 ± 0.20
0.22pF																				
0.3pF																				
0.5pF																				
1.8pF																				
2.0pF																				
8.0pF																				
8.2pF																				
10pF																				
12pF																				
15pF																				
18pF																				
22pF																				
27pF																				
33pF																				
39pF	0.80±0.20											0.80 ± 0.20					0.80 ± 0.20	0.80 ± 0.20	1.25 ± 0.20	1.25 ± 0.20

Dielectric Dimension	COG(NPO)															
	IM06											IM10				

Capacity/ Voltage	4V	6.3V	10V	16V	25V	50V	100V	200-250 V	500-630 V	1000V	2000V	3000V	100V	200-250 V	500-630 V	1000 V	2000 V						
47pF	0.80±0.20											1.25 ± 0.20											
56pF																							
68pF																							
82nF																							
100pF																							
120pF																							
150pF																							
180pF																							
220pF																							
270pF																							
300nF								0.80 ± 0.20		1.25 ± 0.20													
330pF																							
390pF																							
470pF																							
560pF									1.25 ± 0.20														
680pF										1.60 ± 0.30													
820nF							0.80± 0.20						1.25 ± 0.20										
1nF														1.25 ± 0.20									
1.2nF																							
1.5nF																							
1.8nF																							
2.2nF																							
2.7nF																							
3.3nF																							
4.7nF																							
6.8nF																							

Note: 1、Corresponding product design thickness , unit: mm 2、 We can design according to customer special requirement

Dielectric Dimension Capacity/ Voltage	COG(NPO)											
	IM08					IM12						
	500-630V	1000V	2000V	3000V	5000V	100V	200-250V	500-630V	1000V	2000V	3000V	5000V
1pF												
1.2pF												
1.5pF												
1.8pF												
2.0pF												
2.2pF												
3.0pF												
3.3pF												
4.7pF				1.60 ± 0.30								
5.0pF												
5.6pF												
6.8pF					1.60 ± 0.30							
8.0pF												
8.2pF									1.60 ± 0.30		1.60 ± 0.30	
10pF												
12pF												
15pF												
18pF												1.60 ± 0.30

Dielectric Dimension	COG(NPO)											
	IM08					IM12						
Capacity/Voltage	500-630V	1000V	2000V	3000V	5000V	100V	200-250V	500-630V	1000V	2000V	3000V	5000V
22pF												1.60 ± 0.30
27pF					1.60 ± 0.30							
33pF												
39pF												
47pF				1.60 ± 0.30							1.60 ± 0.30	
56pF												
68pF												
100pF												
120pF								1.25±0.20				
150pF												
180pF		1.60 ± 0.30							1.60 ± 0.30			
220pF			1.60 ± 0.30									
270pF				2.00 ± 0.30								
300pF												
330pF												
390pF											2.00 ± 0.30	
470pF						1.25 ± 0.20						
560pF												
680pF												
820pF										2.00 ± 0.30		
1nF												
1.2nF	1.60 ± 0.30		2.0 ± 0.2									
1.5nF												
1.8nF												
2.2nF												
2.7nF												
3.3nF												
3.9nF												
4.7nF							1.60±0.30					
10nF												

Note: 1、Corresponding product design thickness , unit: mm 2、 We can design according to customer special requirement

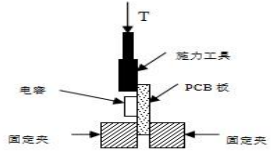
◆Reliability Test

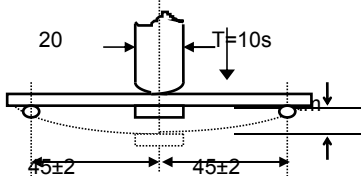
Item	Technical Specification		Test Method and Remarks		
1、Capacitance	class I	Should be within the specified tolerance.	Capacitance	Measuring Frequency	Measuring Voltage
			≤1000pF	1MHz±10%	1.0±0.2Vrms
	> 1000 pF	Test Temperature: 25°C±3°C C≤10μF: Test Frequency: 1KHz±10% Test Voltage: 1.0±0.2Vrms C>10μF: Test Frequency: 120±24 Hz Test Voltage: 0.5±0.1Vrms			
class II	Should be within the specified tolerance.				
2、Insulation Resistance(IR)	class I	C≤10 nF, Ri≥50000MΩ C>10 nF, Ri•CR≥500S	Measuring Voltage: Rated Voltage Duration: 60±5s Test Humidity: ≤75% Test Temperature: 25°C±3°C Test Current: ≤50mA		
	class II	C≤25 nF, Ri≥10000MΩ C>25 nF, Ri•CR≥100S			
注: S=Q:F					
3、Dissipation Factor(DF, tanδ)	class I	DF	Capacitance	Measuring Frequency	Measuring Voltage
		≤0.1%	Cr≥30pF	1MHz±10%	1.0±0.2Vrms
		≤1/ (400+20C)	Cr<30pF	1MHz±10%	

Item	Technical Specification							Test Method and Remarks															
Dissipation Factor(DF, tanδ)	class I	电压	DF (*10-4)	0201	0402	0603	0805	1206 及以上	<p style="text-align: center;">C≤10μF Test Frequency: 1KHz±10% Test Voltage: 1.0±0.2Vrms</p> <p style="text-align: center;">C>10μF Test Frequency: 120±24 Hz Test Voltage: 0.5±0.1Vrms</p>														
		>100V	≤250	All	≤0.01μF	≤0.1μF	≤0.1μF	≤0.68μF															
			≤350	—	—	—	—	≤0.2μF		≤1μF													
		100V	≤250	—	≤0.0047μF	≤0.1μF	≤0.1μF	—		≤0.68μF													
			≤350	—	—	—	—	—		—													
			≤500	—	—	—	—	≤1μF		≤1μF													
		50V	≤250	—	≤0.01μF	≤0.047μF	—	—		≤0.68μF													
			≤350	≤0.001μF	≤0.047μF	≤0.33μF	≤0.47μF	—		—													
			≤500	—	≤0.1μF	—	—	—		—													
			≤750	—	—	—	≤1μF	≤2.2μF		≤2.2μF													
			≤1000	—	—	≤1μF	≤2.2μF	≤4.7 μ F		≤4.7 μ F													
		25V	≤250	—	≤0.01μF	≤0.047μF	—	—		≤0.68μF													
			≤350	≤0.0033μF	≤0.047μF	≤0.33μF	≤0.47μF	—		—													
			≤500	≤0.01μF	≤0.1μF	—	—	—		—													
			≤750	—	≤0.22μF	—	≤1μF	≤2.2μF		≤2.2μF													
			≤1000	—	—	≤2.2μF	≤10 μ F	≤10μF		≤10μF													
		16V	≤250	—	≤0.01μF	≤0.047μF	—	—		≤0.68μF													
			≤350	≤0.0033μF	≤0.047μF	≤0.33μF	≤0.47μF	—		—													
			≤500	≤0.015μF	≤0.1μF	—	—	—		—													
			≤750	≤0.047μF	≤0.22μF	—	≤1μF	≤2.2μF		≤2.2μF													
			≤1000	≤0.1μF	≤1μF	≤2.2μF	≤10μF	≤10μF		≤10μF													
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			≤1000	≤0.1μF	≤1μF	≤10μF	≤22μF	≤100 μ F		≤100 μ F													
		4、Dielectric Withstanding Voltage(DVV)	No breakdown or damage.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="text-align: center;">Measuring Voltage: I class:300% Ur II class :250% Ur Duration: 1~5s Charge/ Discharge Current: 50mA max.</td> </tr> <tr> <td>Ur<100V</td> <td></td> </tr> <tr> <td>100V≤Ur<500V</td> <td>Force 200%Rated voltage for 5 second. Max current should not exceed 50 mA.</td> </tr> <tr> <td>500V≤Ur≤1000V</td> <td>Force 150%Rated voltage for 5 second. Max current should not exceed 50 mA.</td> </tr> <tr> <td>1000V<Ur≤2000V</td> <td>Force 120%Rated voltage for 5 seconds. Max current should not exceed 50 mA.</td> </tr> <tr> <td>2000V<Ur≤5000V</td> <td>Force 120%Rated voltage for 5 seconds. Max current should not exceed 10 mA.</td> </tr> </table>								Measuring Voltage: I class:300% Ur II class :250% Ur Duration: 1~5s Charge/ Discharge Current: 50mA max.	Ur<100V		100V≤Ur<500V	Force 200%Rated voltage for 5 second. Max current should not exceed 50 mA.	500V≤Ur≤1000V	Force 150%Rated voltage for 5 second. Max current should not exceed 50 mA.	1000V<Ur≤2000V	Force 120%Rated voltage for 5 seconds. Max current should not exceed 50 mA.	2000V<Ur≤5000V	Force 120%Rated voltage for 5 seconds. Max current should not exceed 10 mA.	
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5、Temperature Cycle	<table border="1" data-bbox="320 573 815 837"> <thead> <tr> <th data-bbox="320 573 432 607">Item</th> <th data-bbox="432 573 651 607">class I</th> <th data-bbox="651 573 815 607">class II</th> </tr> </thead> <tbody> <tr> <td data-bbox="320 667 432 730">$\Delta C/C$</td> <td data-bbox="432 667 651 730">$\leq \pm 1\%$ or $\pm 1\text{pF}$, whichever is larger.</td> <td data-bbox="651 667 815 730">-15%~+15%</td> </tr> <tr> <td data-bbox="320 730 432 763">DF</td> <td colspan="2" data-bbox="432 730 815 763">Same to initial value.</td> </tr> <tr> <td data-bbox="320 763 432 797">IR</td> <td colspan="2" data-bbox="432 763 815 797">Same to initial value.</td> </tr> <tr> <td colspan="3" data-bbox="320 797 815 837">Appearance: No visible damage</td> </tr> </tbody> </table>	Item	class I	class II	$\Delta C/C$	$\leq \pm 1\%$ or $\pm 1\text{pF}$, whichever is larger.	-15%~+15%	DF	Same to initial value.		IR	Same to initial value.		Appearance: No visible damage			<p data-bbox="847 215 1445 342">※Preconditioning(class II only): up-category temperature, 1h; Recovery time: 24±1h Initial Measurement Cycling Times: 100 times, 1 cycle, 4 steps:</p> <table border="1" data-bbox="847 342 1445 647"> <thead> <tr> <th data-bbox="847 342 954 383">Step</th> <th data-bbox="954 342 1310 383">Temperature (°C)</th> <th data-bbox="1310 342 1445 383">Time (min)</th> </tr> </thead> <tbody> <tr> <td data-bbox="847 383 954 483">1</td> <td data-bbox="954 383 1310 483">Low- category temp. (C0G/X7R/X7S/X7T /X6S/X6T/X5R: -55)</td> <td data-bbox="1310 383 1445 483">30</td> </tr> <tr> <td data-bbox="847 483 954 517">2</td> <td data-bbox="954 483 1310 517">Normal temp. (+20)</td> <td data-bbox="1310 483 1445 517">1</td> </tr> <tr> <td data-bbox="847 517 954 618">3</td> <td data-bbox="954 517 1310 618">Up- category temp. (C0G/X7R/X7S/X7T: +125 X5R:+85 X6S/X6T:+105)</td> <td data-bbox="1310 517 1445 618">30</td> </tr> <tr> <td data-bbox="847 618 954 647">4</td> <td data-bbox="954 618 1310 647">Normal temp. (+20)</td> <td data-bbox="1310 618 1445 647">1</td> </tr> </tbody> </table> <p data-bbox="999 647 1294 674">Recovery time after test: 24±2h</p>	Step	Temperature (°C)	Time (min)	1	Low- category temp. (C0G/X7R/X7S/X7T /X6S/X6T/X5R: -55)	30	2	Normal temp. (+20)	1	3	Up- category temp. (C0G/X7R/X7S/X7T: +125 X5R:+85 X6S/X6T:+105)	30	4	Normal temp. (+20)	1
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8、Physical Dimension	Within the specified dimensions	Use caliper																														

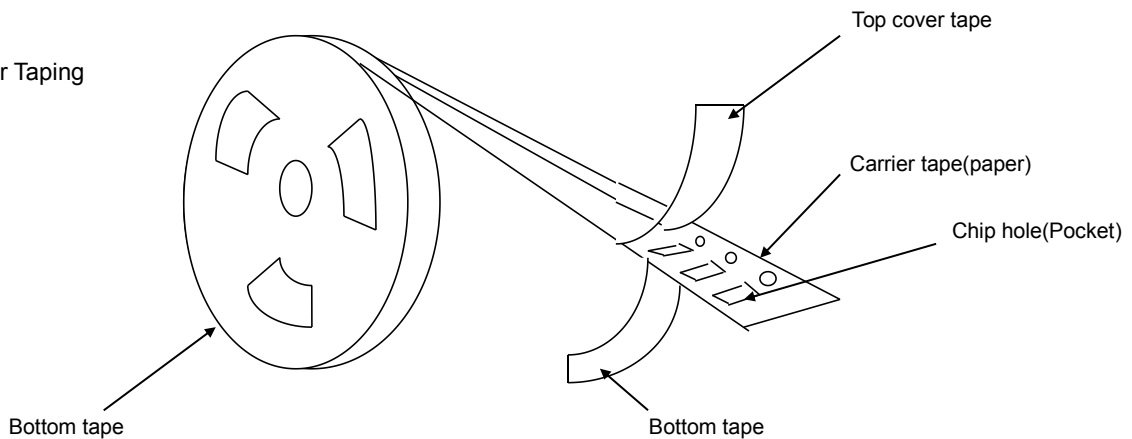
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0402 $\geq 0.47\mu\text{F}$		1206 $\geq 4.7\mu\text{F}$																																																		
0603 $\geq 1\mu\text{F}$		1210 $\geq 4.7\mu\text{F}$																																																		
13、Termination Adhesion	No visible damage.	<p>Apply force T duration $10 \pm 1\text{S}$</p> <table border="1" data-bbox="826 1590 1093 1751"> <tr> <th>specification</th> <th>Apply force T</th> </tr> <tr> <td>$< \text{IM}03$</td> <td>2N</td> </tr> <tr> <td>$\geq \text{IM}03$</td> <td>10N</td> </tr> </table> 	specification	Apply force T	$< \text{IM}03$	2N	$\geq \text{IM}03$	10N																																												
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$< \text{IM}03$	2N																																																			
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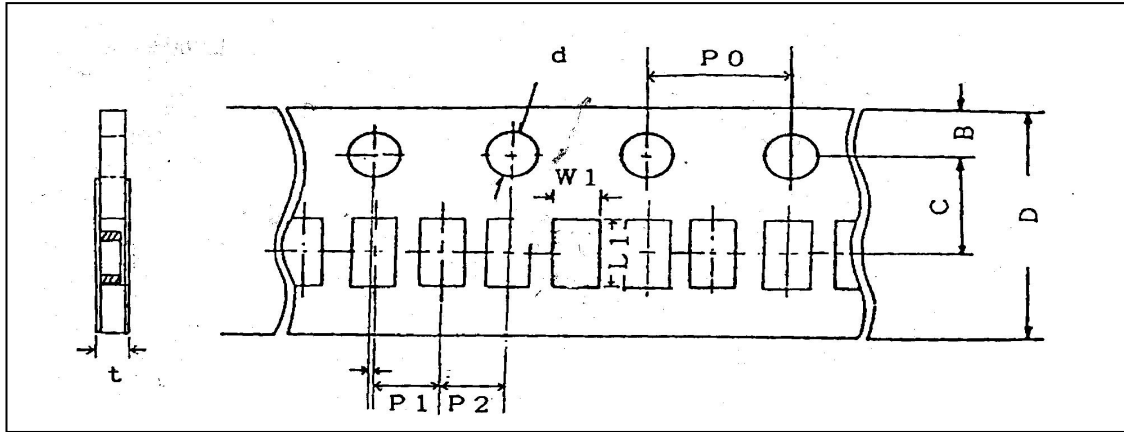
Item	Technical Specification			Test Method and Remarks
14、Solderability	At least 95% of the terminal electrode is covered by new solder. Visual Appearance: No visible damage.			Preheating conditions: 80 to 120°C; 10~30s.
15、Resistance to Soldering Heat	Item	Class I	Class II	Preheating conditions: 100 to 200°C; 60~120s. Solder Temperature: 265±5°C Duration: 10±1s Clean the capacitor with solvent and examine it with a 10X(min.) microscope. Recovery Time: 24±2h Recovery condition: Room temperature
	ΔC/C	≤ ± 2.5% or ± 0.25PF, whichever is larger	≤ ± 15%	
	DF	Same to initial value.		
	IR	Same to initial value.		
	Appearance: No visible damage. At least 95% of the terminal electrode is covered by new solder.			
16、Resistance to Flexure of Substrate (Bending Strength)	Item	Class I	Class II	 <p>Test Board: Al₂O₃ or PCB Warp: 1mm; Speed: 1mm/sec; Unit: mm The measurement should be made with the board in the bending position.</p>
	ΔC/C	≤±5%或±0.5pF, whichever is larger.	-10%~+10%	
	DF	Same to initial value.		
	IR	Same to initial value.		
	Visual Appearance: No visible damage.			

◆Package

*Paper Taping



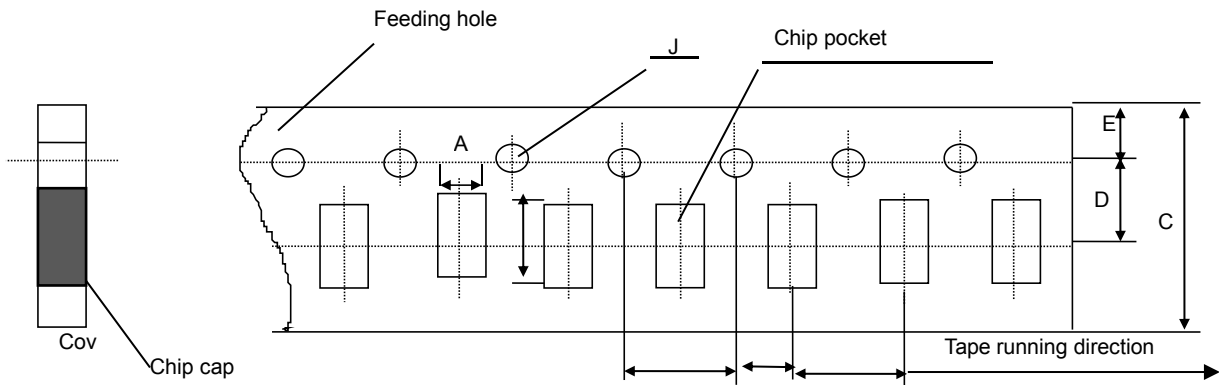
※Dimensions of paper taping for IM01, IM02 type



Unit: mm

Code	W1	L1	D	C	B	P1	P2	P0	d	t
IM01	0.37± 0.10	0.67±0.1 0	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
IM02	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

※Dimensions of paper taping for IM03, IM05, IM06 types.

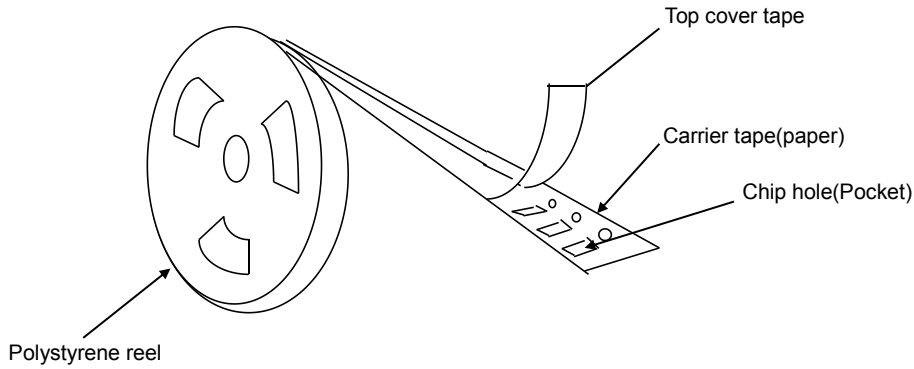


Unit: mm

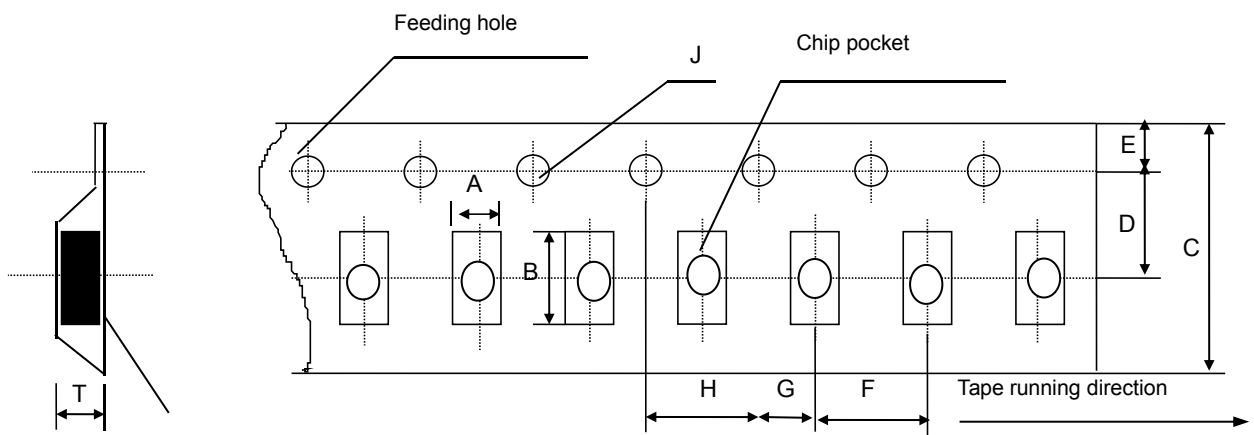
代号 Code	I	B	C	D*	E	F	G*	H	J	T
IM03	1.10 ±0.10	1.90 ±0.10	8.00 ±0.10	3.50 ±0.05	1.75 ±0.10	4.00 ±0.10	2.00 ±0.10	4.00 ±0.10	1.50 -0/+0.10	1.10 Max
IM05	1.45 ±0.15	2.30 ±0.15	8.00 ±0.15	3.50 ±0.05	1.75 ±0.10	4.00 ±0.10	2.00 ±0.10	4.00 ±0.10	1.50 -0/+0.10	1.10 Max
IM06	1.80 ±0.20	3.40 ±0.20	8.00 ±0.20	3.50 ±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

Note: The place with “*” means where needs exactly dimensions.

* Embossed Taping



※ Dimensions of embossed taping for AM05~AM12 type

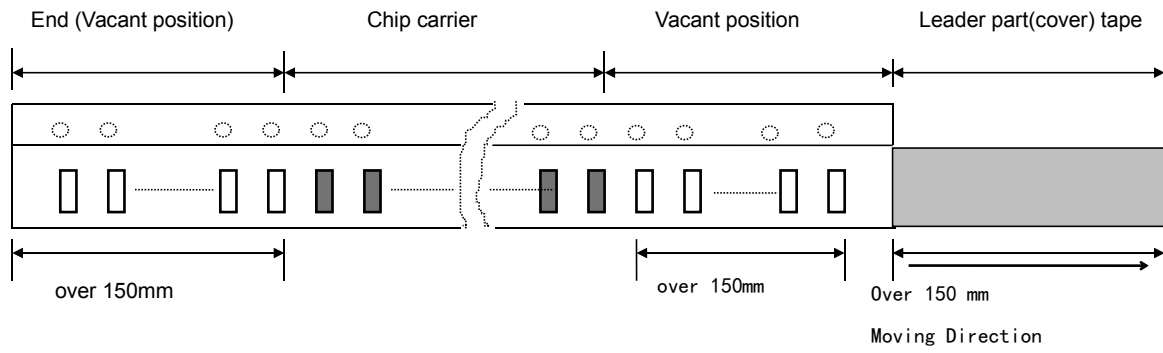


Unit: mm

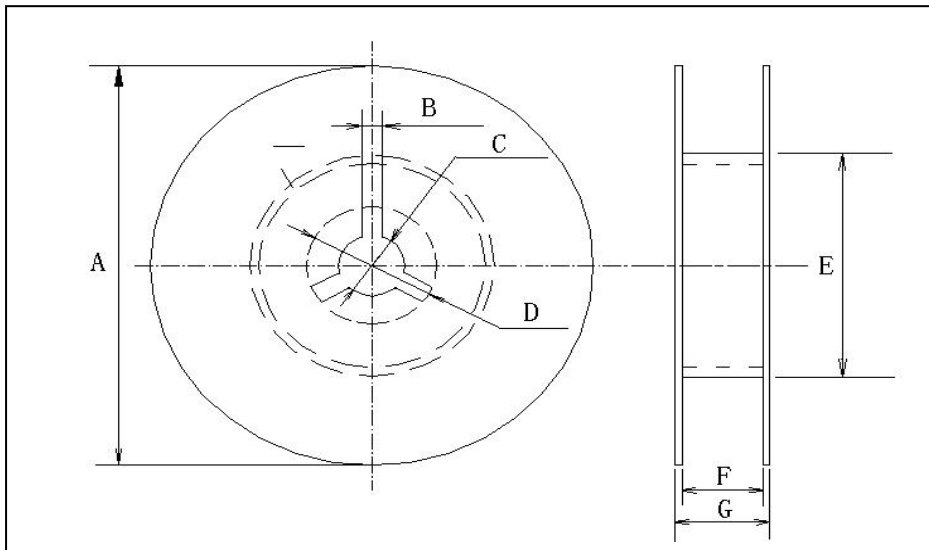
Code Tape size	I	B	C	D*	E	F	G*	H	J	T
IM05	1.55 ± 0.20	2.35 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.50 Max
IM06	1.95 ± 0.20	3.60 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.1	1.50 -0/+0.10	1.85 Max
IM10	2.70 ± 0.10	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
IM08	2.20 ± 0.10	4.95 ± 0.10	12.00 ± 0.10	5.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	1.50 -0/+0.10	3.0 Max
IM12	3.66 ± 0.10	4.95 ± 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	4.0 Max

Note: The place with “**” means where needs exactly dimensions.

Structure of leader part and end part of the carrier paper



* Reel Dimensions (unit: mm)



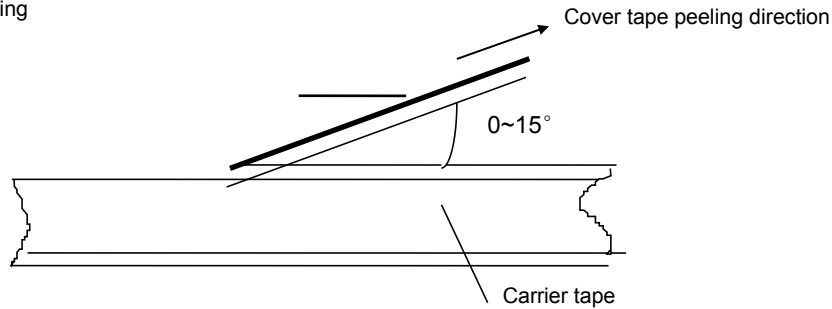
* Code

卷盘型号	I	B	C	D	E	F	G
7REEL	$\Phi 178 \pm 20$	3.0	$\Phi 13 \pm 0.5$	$\Phi 21 \pm 0.8$	$\Phi 50$ 或更大 $\Phi 50$ or more	100 ± 15	12mx

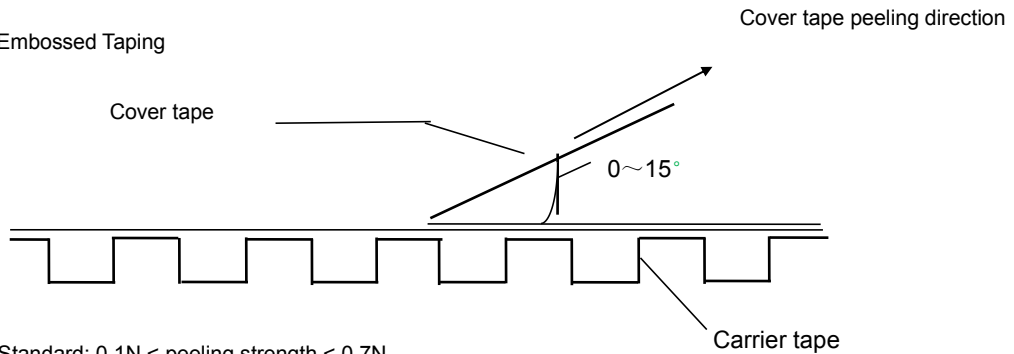
* Taping specification

※ Top tape peeling strength

(I) Paper Taping



(II) Embossed Taping



Standard: 0.1N < peeling strength < 0.7N

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

※Bulk Case Package

unit:mm

Symbol	I	B	T	C	D	E
Dimension	6.80±0.10	8.80±1.00	12.00±0.10	15.00+0.10/-0	2.00+0/-0.10	4.70±0.10
Symbol	F	W	G	H	L	I
Dimension	31.50+0.20/-0	36.00+0/-0.20	19.00±0.35	7.00±0.35	110.00±0.70	5.00±0.35

※Packing Quantity

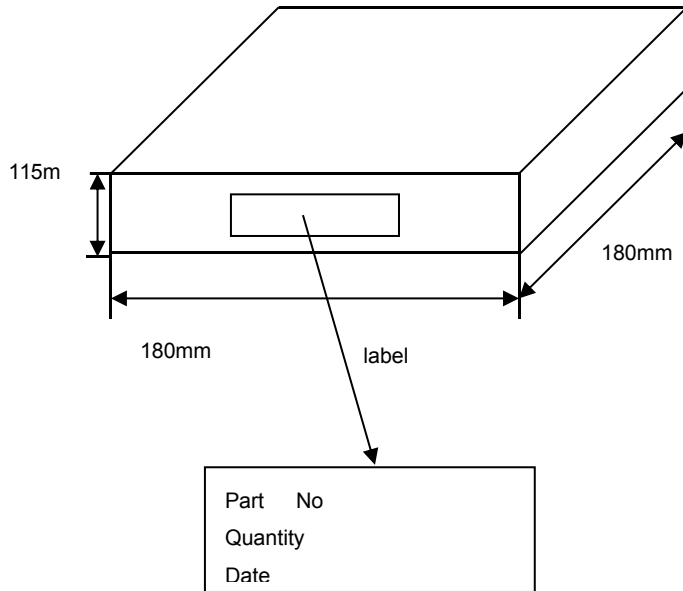
(SIZE)	PACKAGE STYLE & QUANTITY unit: pcs			
	Paper tape reels (PT)	Tape reels (ET)	Plastic boxes in bulk (BC)	Regular bulk (BP)
IM01	15000	-----	20000	5000
IM02	10000	-----	20000	5000
IM03	4000	-----	15000	5000
IM05	4000	3000	10000	5000
IM06	4000	T≤1.35mm 3000 T>1.35mm 2000	5000	5000
IM10	-----	T≤1.80mm 2000 T>1.80mm 1000	-----	2000
IM08	-----	2000	-----	2000
IM12	-----	T≤1.85mm 1000 T>1.85mm 500	-----	2000

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

* Outer packing

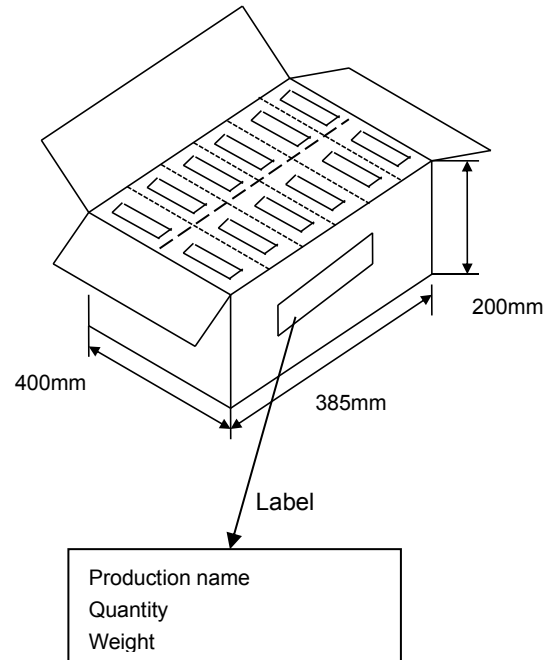
The first package

Quantity: 10 reels



The second package

Quantity: 6 cases



◆Storage Methods

*The guaranteed period for solderability is 12 months (Under deliver package condition).

* Storage conditions:

Temperature 5~40℃

Relative Humidity 20~70%

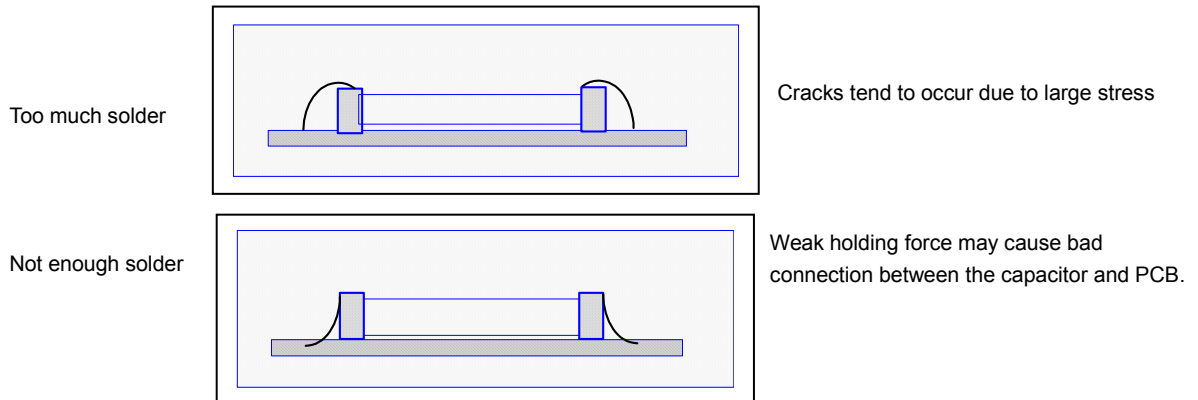
◆Precautions For Use

The Multi-layer Ceramic Capacitors (MLCC) may fail in a short circuit mode in an open circuit mode when subjected to severe conditions of electrical environment and / or mechanical stress beyond the specified "rating" and specified "conditions" in the specification, which will result in burn out, flaming or glowing in the worst case. Following "precautions for "safety" and Application Notes shall be taken in your major consideration. If you have a question about the precautions for handling, please contact our engineering section or factory.

* Soldering Profile

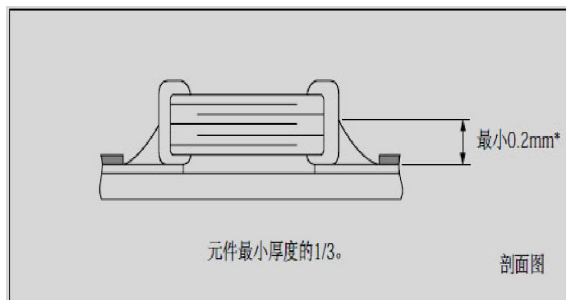
To avoid the crack problem by sudden temperature change, follow the temperature profile in the adjacent graph (refer to the graph in the enclosure page).

* Optimum Solder Amount for Reflow Soldering

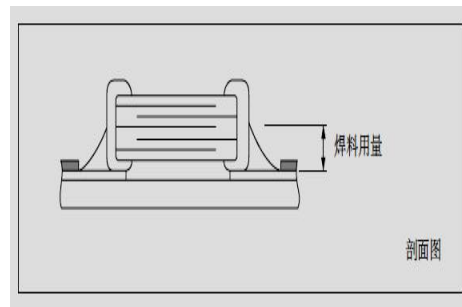


* Recommended Soldering Amounts

4.1 The optimal solder fillet amounts for re-flow soldering



4.2 The optimal solder fillet amounts for reworking by using soldering iron



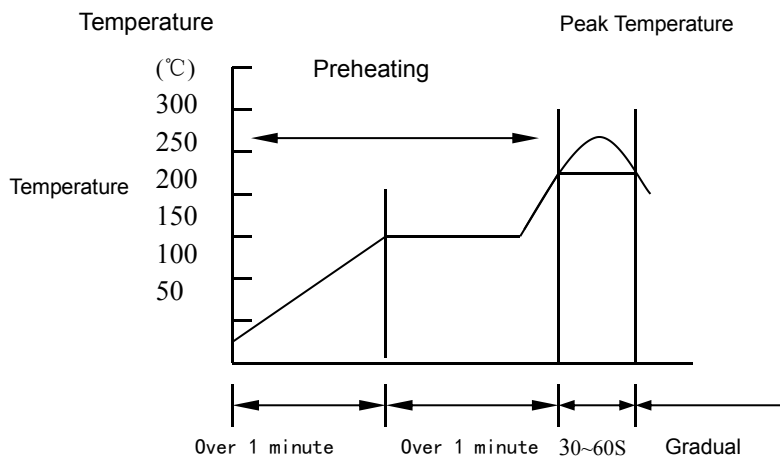
◆Recommended Soldering Method

Size	Temperature Characteristics	Rated Voltage	Capacitance	Soldering Method
IM01	C0G	/	/	R
	X7R/X5R/X7S/X6S/X6T/X7T	/	/	R
IM02	NPO	/		R
	X7R/X5R/X7S/X6S/X6T/X7T	/		R
IM03	NPO	/		R
	X7R/X5R/X7S/X6S/X6T/X7T	/	$C \geq 1 \mu F$	R
			$C < 1 \mu F$	R
IM05	NPO	/	/	R
	X7R/X5R/X7S/X6S/X6T/X7T	/	$C \geq 4.7 \mu F$	R
			$C < 4.7 \mu F$	R
IM06	NPO	/	/	R
	X7R/X5R/X7S/X6S/X6T/X7T	/	$C \geq 10 \mu F$	R
			$C < 10 \mu F$	R
$\geq IM10$	NPO	/	/	R
	X7R/X5R/X7S/X6S/X6T/X7T	/	/	R

Soldering method: Reflow Soldering

◆The temperature profile for soldering

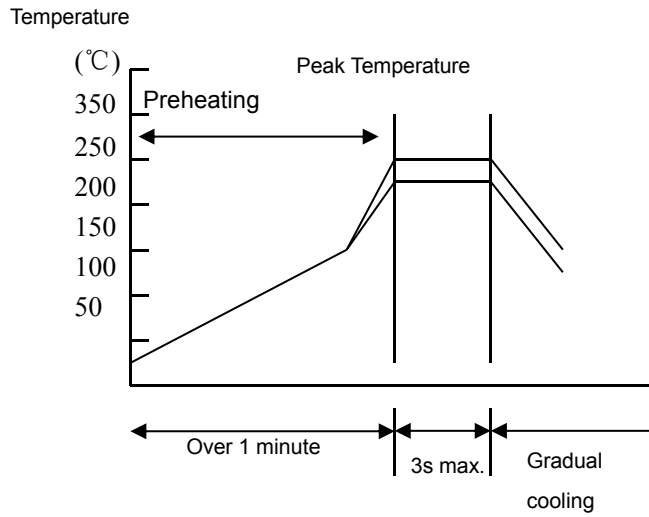
* Re-flow soldering



	Pb-Sn soldering	Lead-free soldering
Peak temperature	230°C~250°C	240°C~260°C

While in preheating, please keep the temperature difference between soldering temperature and surface temperature of chips as: $T \leq 150^\circ C$.

* Hand soldering



Conditions:

Temperature of soldering iron head	Power of soldering iron	Diameter of soldering iron head	Soldering time	Solder paste amount	Restricted conditions
temperature:350°C	20W at the highest	建议 1mm 1mm recommended	最长 3s 3s at the longest	≤ 1/2 chip thickness	Please avoid the direct contact between soldering iron head and ceramic components

* Note: The product specification is for design and selection reference only, and is not used as the basis for delivery.