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Ordering Code

JJCM 101 J 30 COH F 6 5 P AW L

Type : JJCM
JJCH
JJCG
JJCF

Capacitance : The third digit is multiplier
1 : x104 : x10000
2 : x1000 : x1
3 : x10009 : x0.1
for example :
101 = 10x10¹ = 100pF
102 = 10x10² = 1000pF

Capacitance Tolerance :
C = ±0.25pF D = ±0.5pF J = ±5%
K = ±10% M = ±20% S = +50%/-20%
Z = +80%/-20% P = +100~0%

Size Code :

Code	Diameter (mm)	Code	Diameter (mm)
16	4.0	43	11.0
20	5.0	46	11.8
22	5.5	49	12.5
24	6.0	53	13.5
26	6.5	56	14.2
30	7.5	59	15.0
34	8.5	63	16.0
36	9.3	69	17.5
39	10.0	75	19.0

Temperature Characteristic : COH, SL, Y5P, Y5U, Y5V, Z5U
Refer to P.16 and P.17

Rated Voltage : J = 250VDC L = 500VDC N = 1kVDC
P = 2kVDC R = 3kVDC U = 4kVDC
V = 6kVDC Z = 8kVDC C = 10kVDC
A = 12kVDC M = 15kVDC Q = X1-400VAC / Y2-250VAC
G = X1-400VAC / Y1-250VAC

Pb-Free

Lead Length & Packaging :
50 = 5±1.0mm for Straight lead
5±0.5mm for Kink lead
U4 = 24mm min. for Bulk and Kink lead
U5 = 25mm min. for Bulk and Straight lead
AW = H0 16mm for Ammo and Kink lead
AY = H0 20mm for Ammo and Straight lead
RW = H0 16 mm for T/R and Kink lead
RY = H0 20mm for T/R and Straight lead

Lead Style : L, J, K, W, P
Refer to P.19

Lead Spacing : 2 : 2.5mm
5 : 5.0mm
7 : 7.5mm
1 : 10mm

Lead Diameter : for JJCM, JJCH, JJCG series
5 : 0.5±0.05mm
6 : 0.6±0.06mm
7 : 0.65±0.05mm
8 : 0.8±0.08mm

for JJCF Series
6 : 0.55±0.05mm
7 : 0.65±0.05mm
8 : 0.8±0.05mm

Type JJCM Medium Voltage Disc Ceramic Capacitors

In the class I (C0 and SL temperature characteristic), JJCM capacitors allow the temperature compensating disc capacitors to be used in critical circuit application such as tuned circuits. Class II (Y5P, Y5U, Z5U, Y5V temperature characteristic) capacitors are fit for the circuit such as bypass, filter, coupling etc, where a large amount of capacitance is required and the circuit is less sensitive to capacitance change with temperature variations.

■ Specification

No	Item	Specification
1	Operating Temperature	-25~85°C (Z5U : 10~85°C)
2	Capacitance (C _r) and Dissipation factor / Quality Factor testing at	25°C, 1Vrms, Class I : 1MHz (C _r ≥1000pF, 1KHz) Class II : 1KHz (C _r ≤100pF, 1MHz)
3	Dissipation Factor (tg δ) / Quality Factor (Q)	Class I : C _r <30pF, Q≥400+20C _r ; C _r ≥30pF, Q≥1000 Class II : tg δ ≤2.5%
4	Rated Voltage (V _R)	250、500VDC
5	Voltage Proof	2.5V _R
6	Insulation Resistance (R _i)	At rated voltage, R _i ≥10000MΩ
7	Temperature Characteristic	C0、SL、Y5P、Y5U、Z5U、Y5V

■ Capacitance & Dimension table

Rated Voltage (VDC)	Size Code	Dimension (mm)		Temperature Characteristic						Lead Size (mm)		Taping Style
		Dmax.	Tmax.	C0	SL	Y5P (B)	Y5U (E)	Z5U (E)	Y5V (F)	Space F	Diameter d	
250/500	20	5.0	4	1.0~33	1.0~110	100~1000		1000~2200	2200~3300	2.5±0.5	0.5±0.05 0.6±0.06	F
	22	5.5		36~43	110~130	1200		3300	4700	5.0±1.0		
	26	6.5		47~68	150~200	1500, 1800		4700	6800			
	30	7.5		75~100	220~300	2200~2700		6800	10000			
	34	8.5		110~130	330~390	3300, 3900		10000				
	39	10.0		150~200	430~560	4700, 5600						
	43	11.0		220, 240	620, 680	6800						
	53	12.5			8200, 10000				7.5±1.0		V	
Capacitance Tolerance (%)				±0.25pF ±0.5pF ±5% ±10%	±0.25pF ±0.5pF ±5% ±10%	±10% ±20%	±20%	±80/-20% ±100/0%	Ref : P19-21			

Type JJCH High Voltage Disc Ceramic Capacitors

The high voltage disc ceramic capacitors have feature of withstanding higher voltage. These capacitors are used in bypass and coupling circuits. There in the high voltage disc ceramic capacitors with low dissipation factor particularly suit to use in the circuits such as line scanning in TV set..

■ Specification

No	Item	Specification
1	Operating Temperature	-25~85°C (Z5U : 10~85°C)
2	Capacitance (C _R) and Dissipation factor / Quality Factor testing at	25°C, 1Vrms, Class I : 1MHz Class II : 1KHz
3	Dissipation Factor (tg δ) / Quality Factor (Q)	Y5P:(General dissipation type) 、Y5U 、Z5U 、Y5V : tg δ ≤ 2.0% Y5P(Low dissipation type) : tg δ ≤ 0.5% YR : tg δ ≤ 0.3% SL : C _R <30pF, Q≥400+20C _R ; C _R ≥30pF, Q≥1000
4	Rated Voltage (V _R)	1kVDC, 2kVDC, 3kVDC
5	Voltage Proof	2V _R
6	Insulation Resistance (R _i)	R _j ≥10000MΩ (500VDC)
7	Temperature Characteristic	Y5P 、Y5U 、Z5U 、Y5V 、YR 、SL

■ Capacitance Dimension table

Rated Voltage (KV)	Size Code	Dimension (mm)		Temperature Characteristic							Lead Spacing F (mm)	Lead Style	Taping Style	
		Diameter Dmax.	Thick Tmax.	Y5P(B) (General Dissipation Type)	Y5U (E)	Z5U (E)	Y5V (F)	SL	Y5P(B) (Low Dissipation Type)	YR				
				Nominal Capacitance (pF)										
1	22	5.5	4.0	56~560		1000, 1500	1000, 1500	10~82				5.0±1.0	L,J	F
	26	6.5		680, 820			2200	91~110	470~680	220~390				
	30	7.5		1000, 1200		2200	3300	120~160	820~1200	470~680				
	34	8.5		1500, 1800		3300	4700	180~240	1500	820, 1000				
	36	9.3		2200		4700	6800	270~330	1800, 2200	1200				
	39	10.0		2700		6800	10000	360~390	2700	1500				
	43	11.0		3300				430~470	3300	1800				
	46	11.8		3900		10000	15000	510~620	3900	2200				
	49	12.5		4700					4700	2700				
	53	13.5		5600					5600	3300				
	56	14.2		6800					6800	3900				
	59	15.0					22000							
	63	16.0		8200					8200	4700				
	69	17.5												
	75	19.0		10000					10000	5600				
2	22	5.5	5.0					4~36			5.0±1.0 7.5±1.0	L	F,V	
	26	6.5		68~470	470~1000		1000~2200	39~51	100~470	100~270				
	30	7.5		560, 680	1500		3300	56~82	560, 680	330, 390				
	34	8.5		1000	2200			91~110	820, 1000	470, 560				
	36	9.3		1200	3300		4700	120~160	1200	680, 820				
	39	10.0		1500			6800	180,200	1500	1000				
	43	11.0		1800	4700			220,240	1800	1200				
	46	11.8		2200			10000	270,300	2200	1500				
	49	12.5		2700	6800			330,360	2700					
	53	13.5		3300				390		1800				
	56	14.2		3900	10000		15000		3300	2200				
	59	15.0							3900					
	63	16.0		4700					4700	2700				
	69	17.5								3300				
	75	19.0		5600			22000		5600					
3	26	6.5	6.0	56~330	470~680		1000, 1500	5~39	100~330		5.0±1.0 7.5±1.0	L	F,V	
	30	7.5		390, 470	1000			43~56	390, 470					
	34	8.5		560, 680	1500		2200	62~82	560, 680					
	36	9.3		820	2200		3300	91~110	820					
	39	10.0		1000			4700		1000					
	43	11.0		1200	3300				1200					
	46	11.8		1500			6800		1500					
	49	12.5		1800					1800					
	53	13.5		2200	4700									
	56	14.2		2700			10000		2200					
	59	15.0			6800				2700					
	63	16.0		3300										
	69	17.5		3900			15000		3300					
	75	19.0		4700	10000									
	Capacitance Tolerance (%)				±10 ±20	±20	±20	+80/-20	±5 ±10	±10		±10		Ref : P19-21

Note : for YR temperature characteristic, in the range of temperature from 30°C to +85°C, the change rate at its capacitance is ±15%, and however in the range of temperature from 25°C to 125°C, the change rate of its capacitance is +15% to 30%.



Type JJCG Surper High Voltage Disc Ceramic Capacitors

Type JJCG high voltage disc ceramic capacitors have high rated voltage, often used in filter circuit for high voltage supply and in high voltage circuit for TV set and monitor.

■ Specification

No	Item	Specification
1	Operating Temperature	-25~+85°C
2	Capacitance (C _r) and Dissipation factor / Quality Factor testing at	25°C, 1Vrms, Class I : 1MHz Class II : 1KHz
3	Dissipation (tg δ) / Quality Factor (Q)	Y5P:(General dissipation type) 、Y5U 、Y5V : tg δ ≤ 2.0% Y5P(Low dissipation type) : tg δ ≤ 0.5% SL : C _r < 30pF, Q ≥ 400+20C _r ; C _r ≥ 30pF, Q ≥ 1000
4	Rated Voltage (V _r)	4~15kV
5	Voltage Proof*	1.5V _r
6	Insulation Resistance (R _i)	R _i ≥ 10000MΩ (500VDC)
7	Temperature Characteristic	SL、Y5P、Y5U、Y5V

*Note : No breakdown or flashover when apply 1.5 times of rated voltage at 25°C. Voltage proof shall be conducted in insulation oil for the capacitors with rated voltage of 6~15kV.

■ Capacitance & Dimension Chart

Rated Voltage (KV)	Size Code	Dimension (mm)		Temperature Characteristic				Lead Diameter d (mm)	Lead Spacing F (mm)		
		Diameter Dmax.	Thick Tmax.	SL	Y5P(B)	Y5U(E)	Y5V(F)				
				Nominal Capacitance (pF)							
4	26	6.5	6.5	10~33	100~270			0.65±0.05	7.5±2.0		
	30	7.5		39, 47	330~470						
	34	8.5		56, 68	560	1000, 1200					
	36	9.3		82, 100	680, 820	1500					
	39	10.0									
	43	11.0		120	1000, 1200	2200					
	46	11.8		150	1500	2700					
	53	13.5		180, 220	1800	3300					
	56	14.2		270	2200	4700					
	63	16.0		330		5600					
	69	17.5				6800					
	75	19.0				8200					
	6	30		7.5	7.0	10~22	100~330			0.65±0.05	10.0±2.0
		34		8.5		33	390, 470	680, 820	1000		
		36		9.3		47	560	1000	1500		
39		10.0									
43		11.0	68	680, 820		1500	2200, 3300				
46		11.8	100	1000							
53		13.5	120	1200		2200, 2700	4700				
56		14.2	150	1500							
63		16.0	180	1800		3300	6800				
69		17.5		2200							
75		19.0				4700	8200				
8		34	8.5	8.0			100~330			0.65±0.05	10.0±2.0
		36	9.3				390, 470	330~680			
		39	10.0								
		43	11.0				560	1000, 1500			
	46	11.8			680						
	49	12.5									
	53	13.5			820, 1000						
	56	14.2			1200	2200					
	59	15.0									
	63	16.0			1500	2700					
	69	17.5				3300					
	10	36	9.3		8.5		100~390	470~680	1000	0.65±0.05	10.0±2.0
		39	10.0								
		43	11.0				470, 560	820, 1000	1500		
		46	11.8				680		2200		
49		12.5									
53		13.5		820		1500	2700				
56		14.2		1000			3300				
59		15.0									
63		16.0		1200		2200, 2700					
69		17.5		1500			4700				
75		19.0				3300					
12		36	9.3	9.0			100~330	470, 560		0.65±0.05	10.0±2.0
		39	10.0								
		43	11.0				390, 470	680, 820			
		46	11.8				560	1000			
	49	12.5									
	53	13.5			680, 820	1500					
	56	14.2									
	59	15.0									
	63	16.0			1000	2200					
	69	17.5									
	75	19.0				2700					
	15	36	9.3		10.0		100~220			0.80±0.08	10.0±2.0
		39	10.0								
		43	11.0				270, 330				
		46	11.8				390, 470				
49		12.5									
53		13.5		560							
56		14.2		680							
59		15.0									
63		16.0		820							
69		17.5		1000							
75		19.0		1200							
Capacitance Tolerance (%)				±5 ±10		±10 ±20	±20	±20 +80/-20	Ref : P19-21		

Type JJCF AC Disc Ceramic Capacitors

The AC disk ceramic capacitors have dielectric of high dielectric constant ceramic and encapsulation of flame retardant epoxy. These capacitors are used in circuits of noise suppression circuit of power supply for general electronic equipment, and may be used as antenna coupling, Crossing and pass circuit.

■ Specification

No	Item	Specification				
1	Operating Temperature	-25~+85°C (Z5U: 10~85°C)				
2	Capacitance (C _R) and Dissipation factor testing at	25°C, 1 V _{rms} , 1KHz				
3	Dissipation Factor (tg δ)	tg δ ≤ 2.5%				
4	Subclass	X1, Y1, Y2	Series Code	F	D	E
5	Rated Voltage (V _R)	250 · 400VAC	Subclass	Y2	X1/Y2	X1/Y1
6	Voltage Proof	1500VAC · 2500VAC · 4000VAC	Rated Voltage (VAC)	250	X1:400 Y2:250	X1:400 Y1:250
			Voltage Proof (VAC)	1500	2500	4000
7	Insulation Resistance (R _j)	R _j ≥ 10000MΩ (500VDC)				
8	Temperature Characteristic	Y5P · Y5U · Z5U · Y5V				

■ Recognized Standard and Certificate

Recognized Bodies	Recognized Standard	Recognized Bodies	Recognized Standard
UL	UL1414	SEV	IEC 384-14 2nd edition EN 132400
CSA	CAN/CSA-C22.2	SEMKO	
VDE	EN 132400 : 1994 IEC 384-14 2nd ED, V0E0565	FIMKO	
		DEMKO	IEC 384-14 2nd edition EN 132400
CQC	GB/T 14472-1998	NEMKO	

X1 Y2 Ordering Code	Capacitance temperature characteristics	Capacitance (pF)	Capacitance tolerance	Sies Code	Dimensions (mm) φ Dmax	F	φ d	
JJCF101K26Y5PQ67□△△	Y5P(B)	100	K(±10%)	26	6.5	7.5±1.0	0.55±0.05	
JJCF151K26Y5PQ67□△△		150	K(±10%)	26	6.5	7.5±1.0	0.55±0.05	
JJCF221K26Y5PQ67□△△		220	K(±10%)	26	6.5	7.5±1.0	0.55±0.05	
JJCF271K26Y5PQ67□△△		270	K(±10%)	26	6.5	7.5±1.0	0.55±0.05	
JJCF331K26Y5PQ67□△△		330	K(±10%)	26	6.5	7.5±1.0	0.55±0.05	
JJCF391K30Y5PQ67□△△		390	K(±10%)	30	7.5	7.5±1.0	0.55±0.05	
JJCF471K30Y5PQ67□△△		470	K(±10%)	30	7.5	7.5±1.0	0.55±0.05	
JJCF561K34Y5PQ67□△△		560	K(±10%)	34	8.5	7.5±1.0	0.55±0.05	
JJCF681K34Y5PQ67□△△		680	K(±10%)	34	8.5	7.5±1.0	0.55±0.05	
JJCF821K36Y5PQ67□△△		820	K(±10%)	36	9.3	7.5±1.0	0.55±0.05	
JJCF102K39Y5PQ67□△△		1,000	K(±10%)	39	10.0	7.5±1.0	0.55±0.05	
JJCF122M43Y5PQ67□△△		1,200	M(±20%)	43	11.0	7.5±1.0	0.55±0.05	
JJCF152M46Y5PQ67□△△		1,500	M(±20%)	46	11.8	7.5±1.0	0.55±0.05	
JJCF182M49Y5PQ67□△△		1,800	M(±20%)	49	12.5	7.5±1.0	0.55±0.05	
JJCF222M53Y5PQ67□△△		2,200	M(±20%)	53	13.5	7.5±1.0	0.55±0.05	
JJCF272M56Y5PQ67□△△		2,700	M(±20%)	56	14.2	7.5±1.0	0.55±0.05	
JJCF332M63Y5PQ67□△△		3,300	M(±20%)	63	16.0	7.5±1.0	0.55±0.05	
JJCF102M30Y5UQ67□△△		Y5U(E)	1,000	M(±20%)	30	7.5	7.5±1.0	0.55±0.05
JJCF152M34Y5UQ67□△△			1,500	M(±20%)	34	8.5	7.5±1.0	0.55±0.05
JJCF222M36Y5UQ67□△△			2,200	M(±20%)	36	9.3	7.5±1.0	0.55±0.05
JJCF332M43Y5UQ67□△△	3,300		M(±20%)	43	11.0	7.5±1.0	0.55±0.05	
JJCF472M53Y5UQ67□△△	4,700		M(±20%)	53	13.5	7.5±1.0	0.55±0.05	
JJCF682M59Y5UQ67□△△	6,800		M(±20%)	59	15.0	7.5±1.0	0.55±0.05	
JJCF103M75Y5UQ61□△△	10,000		M(±20%)	75	19.0	10.0±1.0	0.55±0.05	
JJCF103M26Y5VQ67□△△	Y5V(F)		1,000	M(±20%)	26	6.5	7.5±1.0	0.55±0.05
JJCF152M30Y5VQ67□△△		1,500	M(±20%)	30	7.5	7.5±1.0	0.55±0.05	
JJCF222M34Y5VQ67□△△		2,200	M(±20%)	34	8.5	7.5±1.0	0.55±0.05	
JJCF332M36Y5VQ67□△△		3,300	M(±20%)	36	9.3	7.5±1.0	0.55±0.05	
JJCF472M43Y5VQ67□△△		4,700	M(±20%)	43	11.0	7.5±1.0	0.55±0.05	
JJCF682M49Y5VQ67□△△		6,800	M(±20%)	49	12.5	7.5±1.0	0.55±0.05	
JJCF103M56Y5VQ61□△△		10,000	M(±20%)	56	14.2	10.0±1.0	0.55±0.05	

X1 Y1 Ordering Code	Capacitance temperature characteristics	Capacitance (pF)	Capacitance tolerance	Sies Code	Dimensions (mm) ϕ Dmax	F	ϕ d
JJCF101K26Y5PG61□△△	Y5P(B)	100	K(±10%)	26	6.5	10.0±1.0	0.55±0.05
JJCF151K26Y5PG61□△△		150	K(±10%)	26	6.5	10.0±1.0	0.55±0.05
JJCF221K26Y5PG61□△△		220	K(±10%)	26	6.5	10.0±1.0	0.55±0.05
JJCF271K30Y5PG61□△△		270	K(±10%)	30	7.5	10.0±1.0	0.55±0.05
JJCF331K30Y5PG61□△△		330	K(±10%)	30	7.5	10.0±1.0	0.55±0.05
JJCF391K34Y5PG61□△△		390	K(±10%)	34	8.5	10.0±1.0	0.55±0.05
JJCF471K34Y5PG61□△△		470	K(±10%)	34	8.5	10.0±1.0	0.55±0.05
JJCF561K36Y5PG61□△△		560	K(±10%)	36	9.3	10.0±1.0	0.55±0.05
JJCF681K36Y5PG61□△△		680	K(±10%)	36	9.3	10.0±1.0	0.55±0.05
JJCF821K39Y5PG61□△△		820	K(±10%)	39	10.0	10.0±1.0	0.55±0.05
JJCF102M43Y5PG61□△△		1,000	M(±20%)	43	11.0	10.0±1.0	0.55±0.05
JJCF152M49Y5PG61□△△		1,500	M(±20%)	49	12.5	10.0±1.0	0.55±0.05
JJCF222M59Y5PG61□△△		2,200	M(±20%)	59	15.0	10.0±1.0	0.55±0.05
JJCF272M69Y5PG61□△△		2,700	M(±20%)	69	17.5	10.0±1.0	0.55±0.05
JJCF332M75Y5PG61□△△		3,300	M(±20%)	75	19.0	10.0±1.0	0.55±0.05
JJCF102M34Y5UG61□△△	Y5U(E)	1,000	M(±20%)	34	8.5	10.0±1.0	0.55±0.05
JJCF152M36Y5UG61□△△		1,500	M(±20%)	36	9.3	10.0±1.0	0.55±0.05
JJCF222M43Y5UG61□△△		2,200	M(±20%)	43	11.0	10.0±1.0	0.55±0.05
JJCF332M49Y5UG61□△△		3,300	M(±20%)	49	12.5	10.0±1.0	0.55±0.05
JJCF472M56Y5UG61□△△		4,700	M(±20%)	56	14.2	10.0±1.0	0.55±0.05
JJCF682M69Y5UG61□△△	6,800	M(±20%)	69	17.5	10.0±1.0	0.55±0.05	
JJCF102M26Y5VG61□△△	Y5V(F)	1,000	M(±20%)	26	6.5	10.0±1.0	0.55±0.05
JJCF151M30Y5VG61□△△		1,500	M(±20%)	30	7.5	10.0±1.0	0.55±0.05
JJCF222M34Y5VG61□△△		2,200	M(±20%)	34	8.5	10.0±1.0	0.55±0.05
JJCF332M39Y5VG61□△△		3,300	M(±20%)	39	10.0	10.0±1.0	0.55±0.05
JJCF472M46Y5VG61□△△		4,700	M(±20%)	46	11.8	10.0±1.0	0.55±0.05
JJCF682M56Y5VG61□△△		6,800	M(±20%)	56	14.2	10.0±1.0	0.55±0.05
JJCF103M69Y5VG61□△△		10,000	M(±20%)	69	17.5	10.0±1.0	0.55±0.05

Type JJSH High Voltage Chip Molded Ceramic Capacitors (SMD)

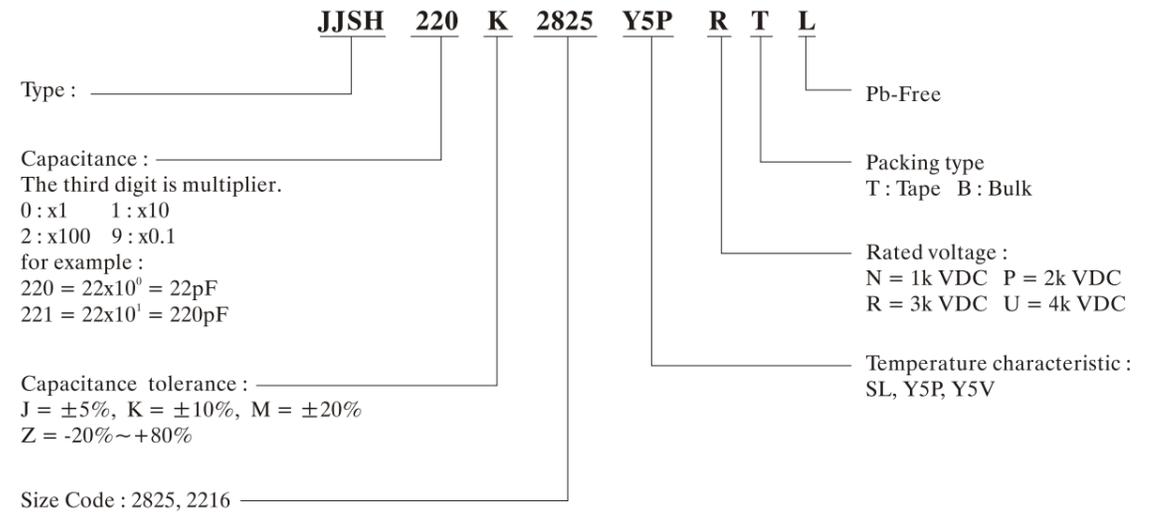
Feature

- High reliability through disc capacitor element molded construction
- Resin molded SMD type for reflow soldering
- Wide rated to voltage range 1 to 4kV

Application

- Back lighting inverter
- Snubber circuit of switching power supply

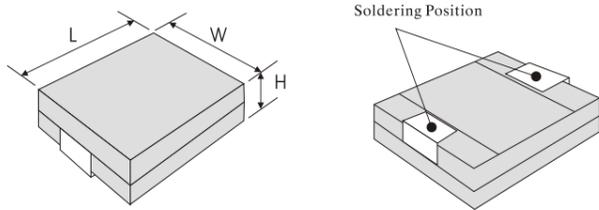
■ PART NUMBER



■ Specification

Item	Specification	
	SL	Y5P · Y5V
Characteristics	SL	Y5P · Y5V
Operating Temperature	-25~+85°C	
Capacitance(C _R) and Dissipation factor testing at	25°C, 1Vrms, 1MHz	25°C, 1Vrms, 1KHz
Rated voltage(V _R)	3k VDC, 4k VDC	1kVDC, 2kVDC, 3kVDC
Voltage proof	1.2V _R	
Quality factor / Dissipation factor	C _R ≤ 30pF, Q ≥ 400 + 20C _R ; C _R > 30pF, Q ≥ 1000	tg δ ≤ 2.5%
Insulation resistance	R _i ≥ 10000MΩ (500VDC)	

■ **Structure and dimension**



Dim. Size Code	Length		Width		Highth	
	mm	inch	mm	inch	mm	inch
2216	5.7	0.22	4.2	0.16	3.0	0.12
2825	7.1	0.28	6.3	0.25		

■ **Rated voltage and capacitance series**

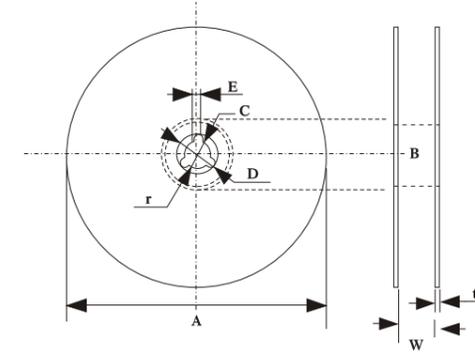
Rated Voltage (k VDC)	Capacitance (p F)		Capacitance Tolerance	Temperature Characteristic		
	2825	2216				
4	5	5	±5% (J) ±10% (K)	SL		
	10					
	12	10				
	15					
	18	12				
	22					
	27	15				
	33					
39	18					
47						
3	5	5				
	10					
	12	10				
	15					
	18	12				
	22					
	27	15				
	33					
	39	18				
	47					
	56	22				
	68					
100	47~150					
220						
2	470	39	±10% (K)	Y5P (B)		
	100					
	150	47				
	220					
	330	56				
	470					
	680	100				
	1000					
	1000	270			±20% (M) -20%~+80% (Z)	Y5V (F)
	470					
680	220					
1000						
1500	330					
2200						
1	390	27~330	±10% (K)	Y5P (B)		
	470					
	680					
	1000	68~1000				
	2200					
	3300					
4700						

■ **Standard Packing**

Bulk Packing : 1000 pcs. bag
Embossed Taping : 1000 pcs./reel to 3000 pcs./reel

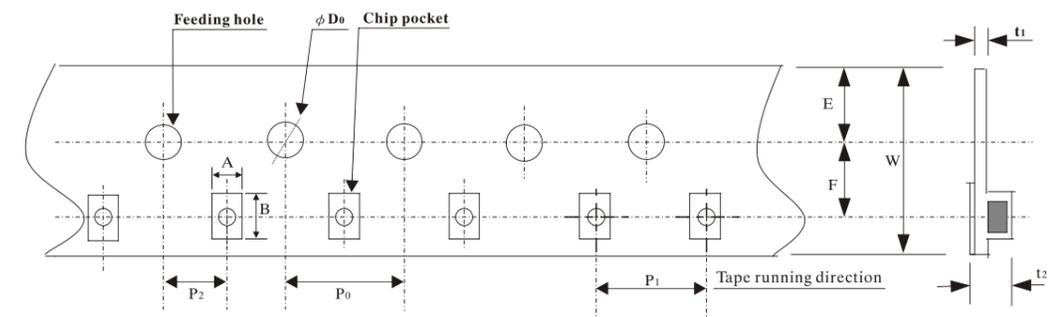
■ **Reel**

Fig. I



■ **Embossed Taping**

Fig. II



■ **Dimensions of reel in mm (Fig. I)**

Code	A	B	C	D	E	W	t	r
2216	330±5	60	13.0±0.5	21±1	2.0±0.5	13.5±1.5	2.0±0.5	R1.0
2825	330±5	60	13.0±0.5	21±1	2.0±0.5	17±1.5	2.0±0.5	R1.0

■ **Dimensions of tape in mm (Fig. II)**

Code	A	B	W	F	E	P ₁	P ₂	P ₀	φD ₀ ^{+0.1}	t ₁	t ₂
2216	4.6±0.2	6.0±0.2	12.0±0.3	5.5±0.1	1.75±0.1	8.0±0.1	2.0±0.05	4.0±0.1	1.5	0.3±0.1	4.2±0.3
2825	6.6±0.2	8.2±0.2	16.0±0.3	7.5±0.1	1.75±0.1	8.0±0.1	2.0±0.1	4.0±0.1	1.5	0.3±0.1	4.2±0.3

Type JJSF AC Chip Molded Ceramic Capacitors(SMD)

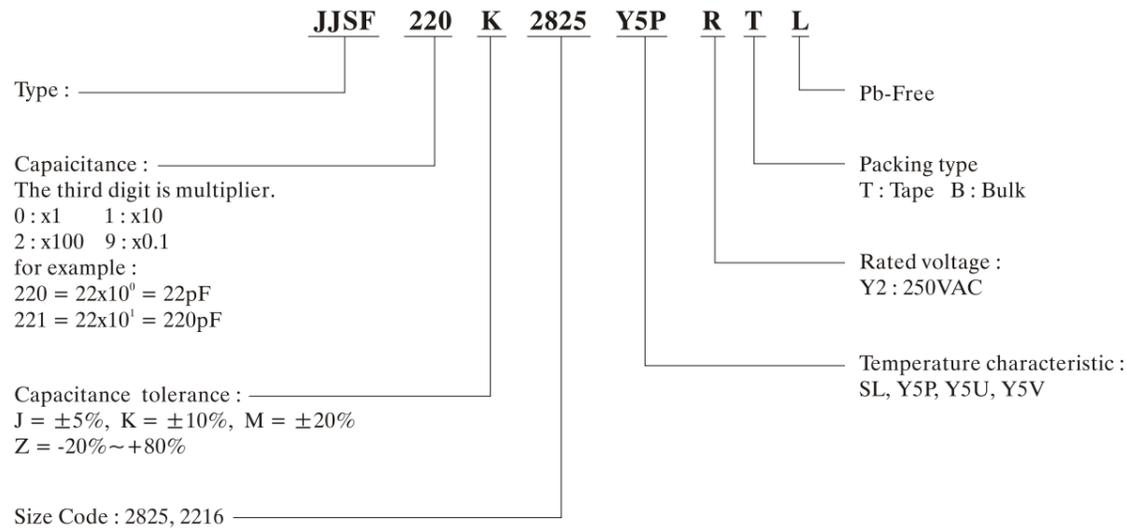
Feature

- High reliability through disc capacitor element molded construction.
- Resin molded SMD type for reflow soldering.
- Tow types to choic for different use.

Application

- IT equipment as Analog Modem, XDSL Modem.
- AC primary circuit of AC adapter, Charger, DC-DC converter etc.

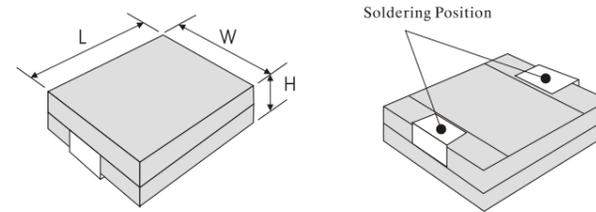
■ PART NUMBER



■ Specification

Item	Specification	
Characteristics	SL	Y5P · Y5V · Y5U
Operating Temperature	-25~+85°C	
Capacitance(C _R) and Quality Factor or Dissipation factor testing at	25°C, 1Vrms, 1MHz	25°C, 1Vrms, 1KHz
Rated voltage	250VAC	
Voltage proof	1500VAC	
Quality factor / Dissipation factor	C _R ≤ 30pF, Q ≥ 400 + 20C _R ; C _R > 30pF, Q ≥ 1000	tg δ ≤ 2.5%
Insulation Resistance (R _i)	R _i ≥ 10000MΩ (500VDC)	

■ Structure and dimension



Dim. Size Code	Length		Width		Highth	
	mm	inch	mm	inch	mm	inch
2216	5.7	0.22	4.2	0.16	3.0	0.12
2825	7.1	0.28	6.3	0.25		

■ Rated voltage and capacitance series

Rated Voltage (VAC)	Capacitance (p F)		Capacitance Tolerance (%)	Temperature Characteristic
	2825	2216		
250	10~68	5~33	±5% (J)	SL
	100~1000	47~680	±10% (K)	Y5P (B)
	1000~2200	330~1000	±20% (M) -20%~+80% (Z)	Y5U (E)
	3300~4700	1000~2200		Y5V (F)

■ **Standard Packing**

Bulk Packing : 1000 pcs. bag

Embossed Taping : 1000 pcs./reel to 3000 pcs./reel

■ **Dimensions of reel in mm (Fig. I)**

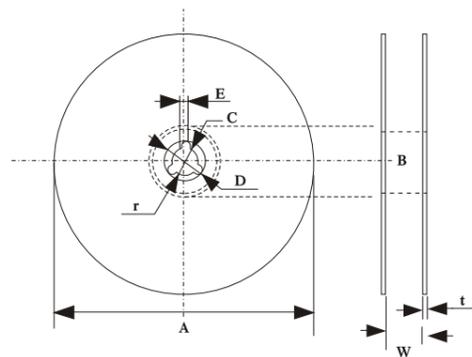
Code	A	B	C	D	E	W	t	r
2216	330±5	60	13.0±0.5	21±1	2.0±0.5	13.5±1.5	2.0±0.5	R1.0
2825	330±5	60	13.0±0.5	21±1	2.0±0.5	17±1.5	2.0±0.5	R1.0

■ **Dimensions of tape in mm (Fig. II)**

Code	A	B	W	F	E	P ₁	P ₂	P ₀	φ D ₀ ^{+0.1}	t ₁	t ₂
2216	4.6±0.2	6.0±0.2	12.0±0.3	5.5±0.1	1.75±0.1	8.0±0.1	2.0±0.05	4.0±0.1	1.5	0.3±0.1	4.2±0.3
2825	6.6±0.2	8.2±0.2	16.0±0.3	7.5±0.1	1.75±0.1	8.0±0.1	2.0±0.1	4.0±0.1	1.5	0.3±0.1	4.2±0.3

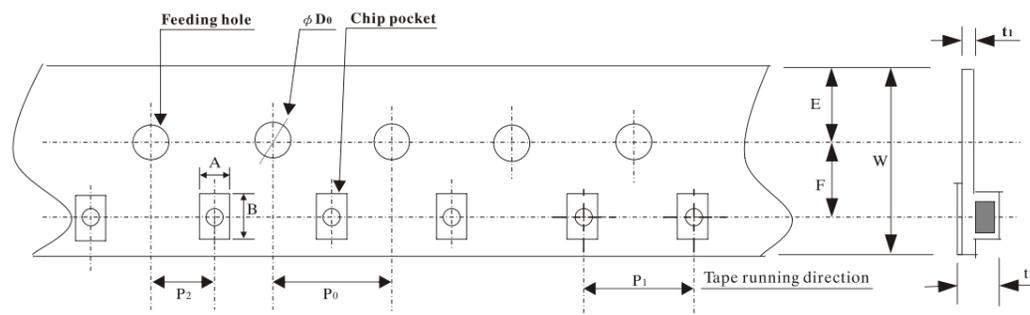
■ **Reel**

Fig. I



■ **Embossed Taping**

Fig. II



The Properties of Ceramic Capacitors

■ **Class I temperature compensation ceramic capacitors**

Class I Temperature Characteristic Chart

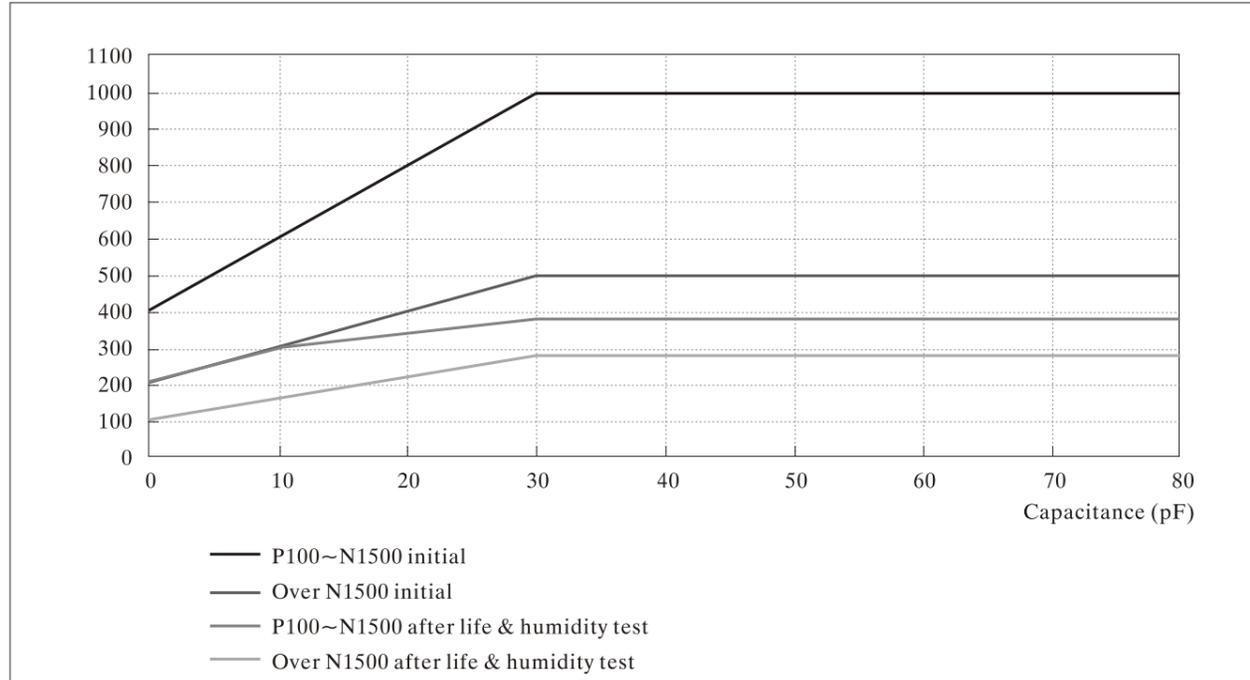
Code	Material Coefficient		Capacitance			
	Series	Coefficient (10 ⁻⁶ /°C)	0.5~2pF	2.1~3.9pF	4.0~9.9pF	>10pF
			Temperature Coefficient Tolerance (25°C~85°C)			
C0	NP0	0	K (±250)	J (±120)	H (±60)	G (±30)
S1	N033	-33	K (±250)	J (±120)	H (±60)	G (±30)
U1	N075	-75	K (±250)	J (±120)	H (±60)	G (±30)
P2	N150	-150	K (±250)	J (±120)	H (±60)	G (±30)
R2	N220	-220	K (±250)	J (±120)	H (±60)	G (±30)
S2	N330	-330	K (±250)	J (±120)	H (±60)	H (±60)
T2	N470	-470	K (±250)	J (±120)	J (±120)	H (±60)
U2	N750	-750	K (±250)	J (±120)	J (±120)	J (±120)
P3	N1500	-1500	K (±250)	K (±250)	K (±250)	K (±250)
R3	N2200	-2200	L (±500)	L (±500)	L (±500)	L (±500)
S3	N3300	-3300	L (±500)	L (±500)	L (±500)	L (±500)
T3	N4700	-4700	M (±1000)	M (±1000)	M (±1000)	M (±1000)

SL : Any class I material from P100 to N1000 may be used (no tolerance specified).

■ **Class II & III ceramic capacitors**

Codes consists of 3 digits, where the first 2digits indicate the lowest temperature and the highest temperature sparately, and the last digit indicates the maximum capacitance change over temperature range from 25°C.

CLASS I Q LIMITS

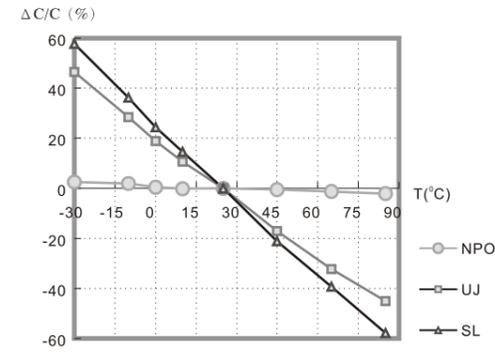


Class II & III Temperature Characteristic table

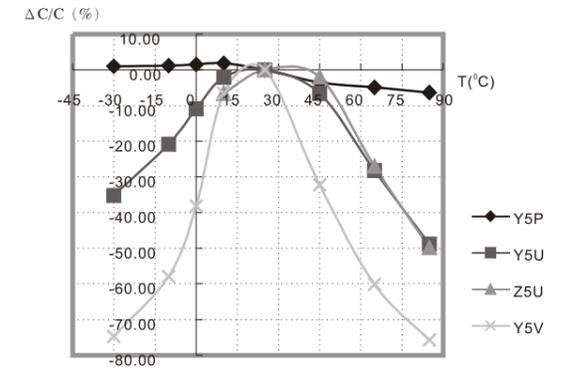
First digit is the lowest temperature	Second digit is the highest temperature	Last digit is MAX. Capacitance change over temperature range from 25°C	
X -55°C	4 +65°C	A	±1.0%
Y -30°C	5 +85°C	B	±1.5%
Z +10°C	6 +105°C	C	±2.2%
	7 +125°C	D	±3.3%
	8 +150°C	E	±4.7%
		F	±7.5%
		P	±10%
		R	±15%
		S	±22%
		T	+22% -33%
		U	+22% -56%
		V	+22% -82%

Temperature Characteristic Graph

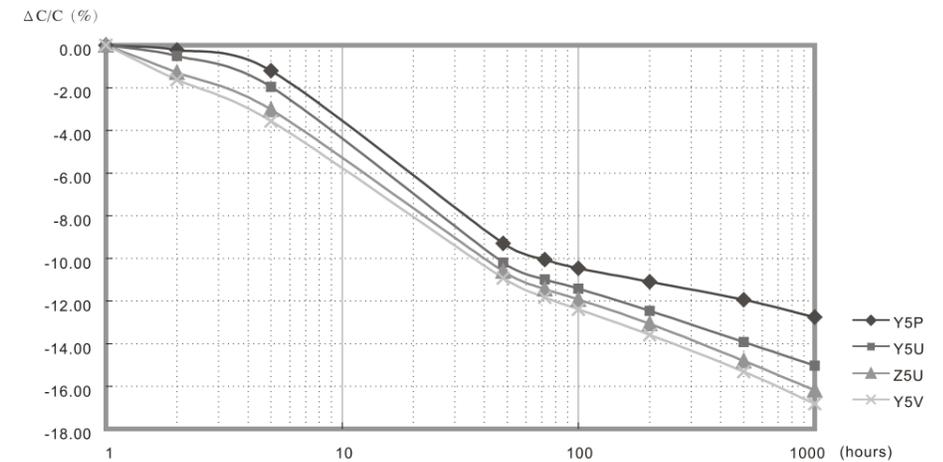
Class I Ceramic Capacitor Temperature Coefficient



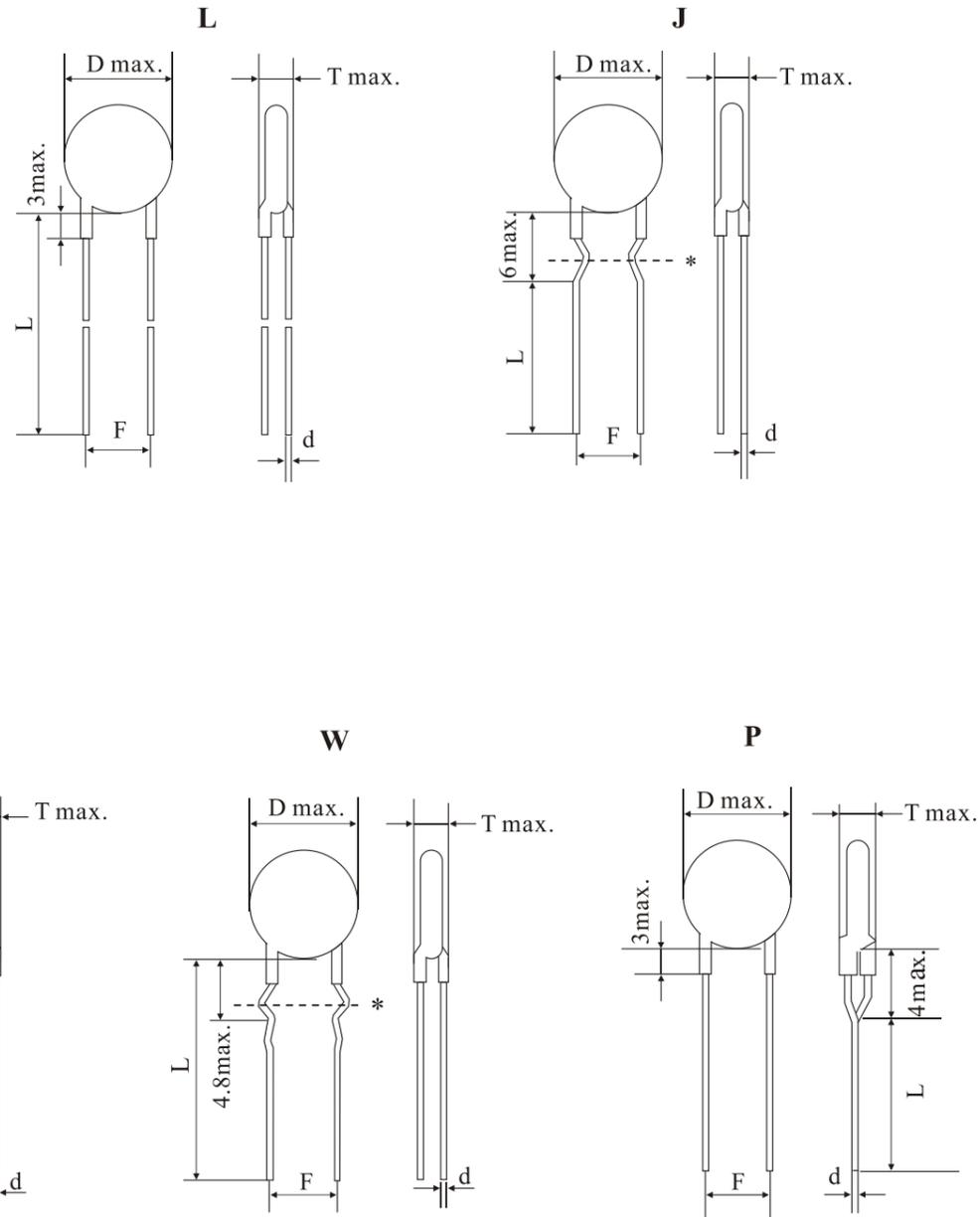
Class II & III Ceramic Capacitor Temperature Characteristics



Capacitance Natural Attenuation (%)

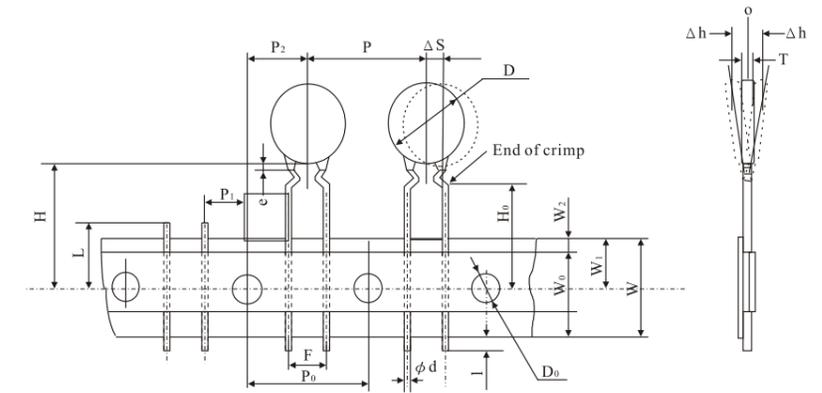


■ LEAD STYLE

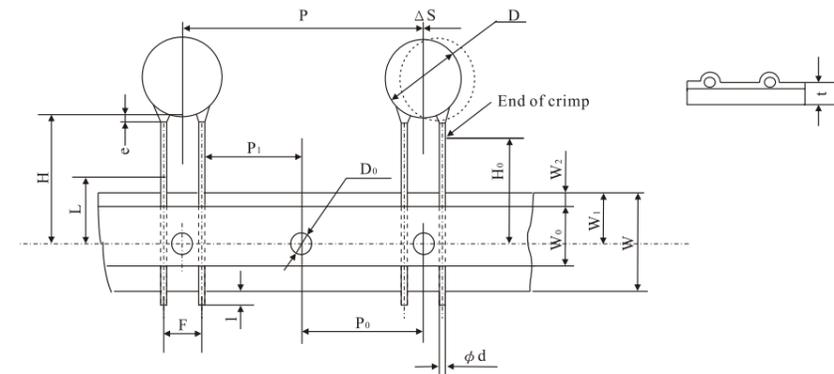


Note : *Coating drop does not exceed this line.

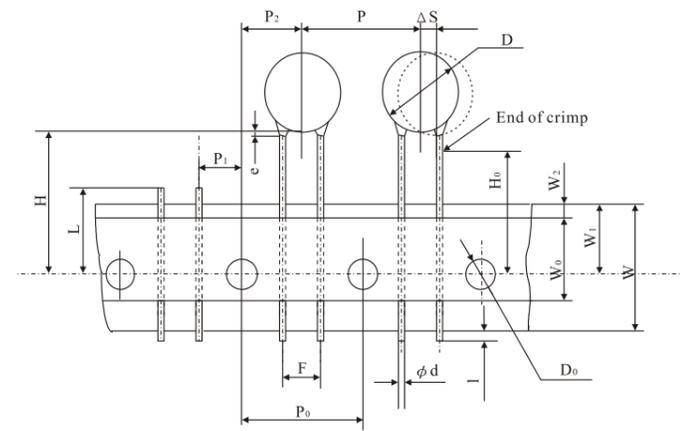
■ Taping style
■ Style F



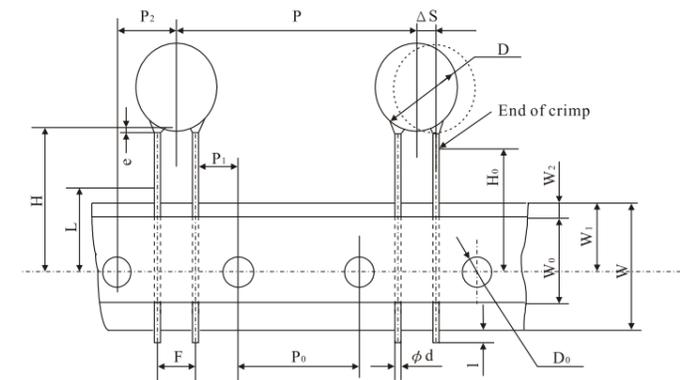
■ Style U



■ Style V



■ Style Y

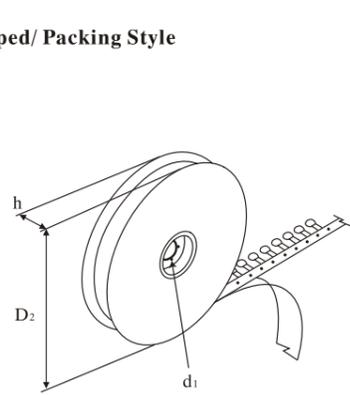


■ Taping Specification

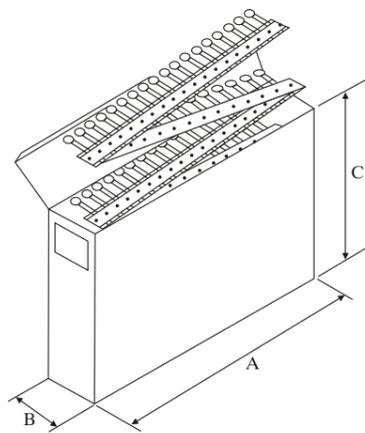
Description	Symbol	Dimension (mm)			
		F	U	V	Y
Taped style					
Feed hole pitch	P ₀	12.7±0.3		15.0±0.3	
Taping pitch	P	12.7±1.0	25.4±2.0	15.0±2.0	30.0±2.0
Lead spacing	F	5.0 ^{+0.8} _{-0.2}	10.0±1.0	7.5±1.0	
Feed hole off alignment	P ₁	3.85±0.7	7.7±1.5	3.75±1.0	
	P ₂	6.35±1.3		7.5±1.5	
Lead crimp height	H ₀	16.0±0.5* or 18 ^{+2.0**} _{-0.0}			
Bottom height	H	20 ^{+1.5} _{-1.0}			
Carrier tape width	W	18.0±0.5			
Adhesive tape width	W ₀	8.0 min	11.5 min.		
Feed hole height off alignment	W ₁	9.0±0.5			
Adhesive tape thickness	W ₂	3.0 max.			
Overall tape thickness	t	0.7±0.2			
Body diameter	D	See the specification			
Feed hole diameter	D ₀	4.0±0.3			
Wire lead diameter	d	0.6 / 0.65 / 0.8			
Lead end protrusion	I	2.0 max.			
Rejected component cut high	L	11.0 max.			
Body thickness	T	See the specification			
Deviation along tape	ΔS	0±0.1	0±2.0		
Body inclination	Δh	1.0 max.	2.0 max.		
Coating drop	e	For lead style J and K drop down to the center of crimp is allowable			
		For lead style L and P 3mm max.			

1. For inside and outside crimp lead style only.
2. For front and back crimp lead style only.

Taped/ Packing Style



Taped/ Reel



Taped/ Ammo

A	B	C
335mm	45mm	240mm
335mm	58mm	240mm

h	D ₂	d ₁
40mm	340mm	30mm
51mm	340mm	30mm

Ordering Code

JJMPX **104** **K** **275V** **P15**

Type : _____
 JJMPX
 JJMEF

Leaded Spacing :
 for example :
 P10 : 10mm
 P15 : 15mm

Capacitance : _____
 The third digit is multiplier
 2 : x100 4 : x10000
 3 : x1000 5 : x100000
 for example :
 102 = 10x10² = 1000pF
 103 = 10x10³ = 10000pF

Rated Voltage :
 275VAC
 100VDC
 250VDC
 400VDC
 630VDC
 1000VDC

Capacitance Tolerance : _____
 J = ±5%
 K = ±10%
 M = ±20%



Metallized Polypropylene Capacitors

Type : MPX

Typical applications

Interference suppression and across-the-line applications. Suitable for use in situations where failure of the capacitor would not lead to danger of electric shock.

This type especially is designed for radio interference suppression and across-the-line capacitors in :

- A : Business machines appliances, such as : Typewriters, adding machines, computer displays and monitors.
- B : Household appliances, such as : Mixers, fans, coffee grinders, audio and TV circuits.
- C : Thyristor and triac appliances, such as : Dimmers.

General technical data

- Dielectric : Polypropylene film.
- Plates : Metal layer deposited by evaporation under vacuum.
- Winding : Non-inductive type.
- Leads : Tinned wire.
- Protection : Plastic case, polyurethane resin filled. Box material is solvent resistant and flame retardant according to UL94V-0.
- Marking : Manufacturer's logo, series, capacitance, tolerance, rated voltage, capacitor class, dielectric code, climatic category, manufacturing date code, approvals, manufacturing plant.
- Climatic category : GMF DIN 40040; 40/100/21/C
- Operating temperature range : -40 to +100°C
- Related documents : IEC 384-14 2nd edition '93; EN 132400 UL 1414, CSA C22.2 NO.1

Electrical characteristics

- Climate category : In accordance with DIN40040 GMF
 - A.) G=Minimum limit temperature -40°C
 - B.) M=Maximum limit temperature +100°C
 - C.) F=Humidity category...Average relative humidity $\leq 75\%$, 95%, for 30 day per year, continuously; 85% for the remaining days, occasionally.

Rated voltage

50~60Hz
275VAC for VDE, ENEC 250 VAC for UL, CSA.

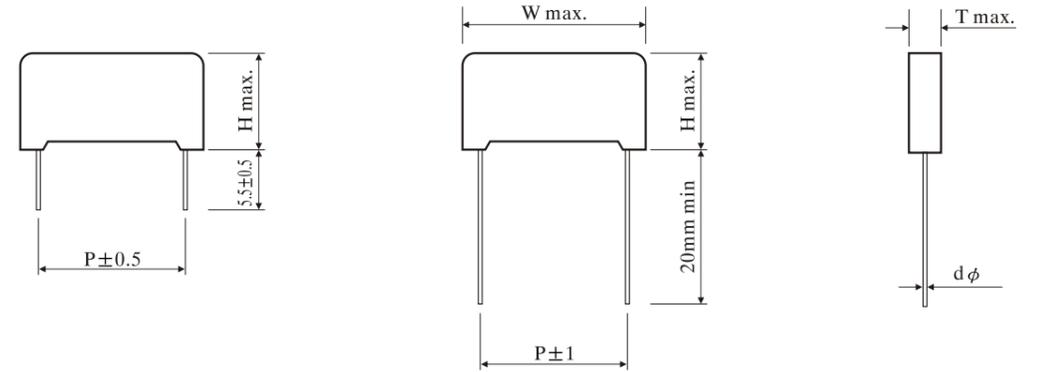
Capacitance range : 0.0047~1.0 μF

Capacitance tolerance : J($\pm 5\%$), K($\pm 10\%$), M($\pm 20\%$)

Withstand voltage : A. Between terminals.....1200V AC.60Hz or 2100V DC 1s.
B. Between terminals and case.....2000V AC.60Hz 60s

Dissipation factor : A. $\leq 0.1\%$ at 1KHz and 20°C
B. $\leq 0.3\%$ at 10KHz and 20°C

Insulation resistance : A. Between terminals... $\geq 3 \times 10^4 M\Omega$ for $C \leq 0.33 \mu F$
 $\geq 1 \times 10^4 M\Omega$ for $C > 0.33 \mu F$
B. Between terminals and case... $\geq 3 \times 10^4 M\Omega$
Measured at 100 \pm 15V DC.60s. And 20°C



Capacitance	Rated-Voltage	Dimension(mm)				
		W	H	T	P	d φ
μF	VAC					
0.0047	250/275	13.0	11.0	5.0	10.0	0.6
0.0056	250/275	13.0	11.0	5.0	10.0	0.6
0.0068	250/275	13.0	11.0	5.0	10.0	0.6
0.0082	250/275	13.0	11.0	5.0	10.0	0.6
0.01	250/275	13.0	11.0	5.0	10.0	0.6
0.01	250/275	18.0	11.0	5.0	15.0	0.8
0.012	250/275	18.0	11.0	5.0	15.0	0.8
0.015	250/275	18.0	11.0	5.0	15.0	0.8
0.018	250/275	18.0	11.0	5.0	15.0	0.8
0.022	250/275	18.0	11.0	5.0	15.0	0.8
0.027	250/275	18.0	11.0	5.0	15.0	0.8
0.033	250/275	18.0	11.0	5.0	15.0	0.8
0.039	250/275	18.0	11.0	5.0	15.0	0.8
0.047	250/275	18.0	11.0	5.0	15.0	0.8
0.056	250/275	18.0	11.0	5.0	15.0	0.8
0.068	250/275	18.0	11.0	5.0	15.0	0.8
0.082	250/275	18.0	12.0	6.0	15.0	0.8
0.1	250/275	18.0	12.0	6.0	15.0	0.8
0.12	250/275	18.0	13.5	7.5	15.0	0.8
0.15	250/275	18.0	14.5	8.5	15.0	0.8
0.22	250/275	18.0	16.0	10.0	15.0	0.8
0.27	250/275	26.5	16.5	7.0	22.5	0.8
0.27	250/275	26.5	17.0	8.5	22.5	0.8
0.33	250/275	26.5	17.0	8.5	22.5	0.8
0.39	250/275	26.5	19.0	10.0	22.5	0.8
0.47	250/275	26.5	19.0	10.0	22.5	0.8
0.47	250/275	32.0	20.0	11.0	27.5	0.8
0.56	250/275	32.0	20.0	11.0	27.5	0.8
0.68	250/275	32.0	20.0	11.0	27.5	0.8
0.82	250/275	32.0	22.0	13.0	27.5	0.8
1.0	250/275	32.0	22.0	13.0	27.5	0.8



Metallized Polyester Capacitors

Type : MEF

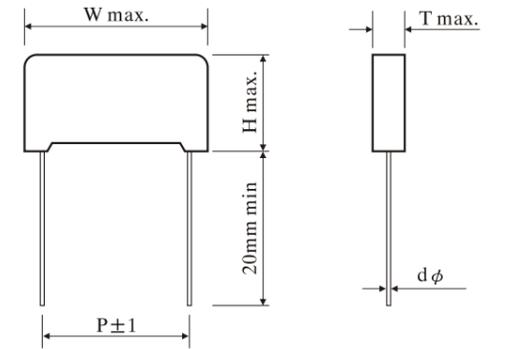
For DC Voltage metallized polyester film capacitor with epoxy resin dipped coating, radial leads.

Description

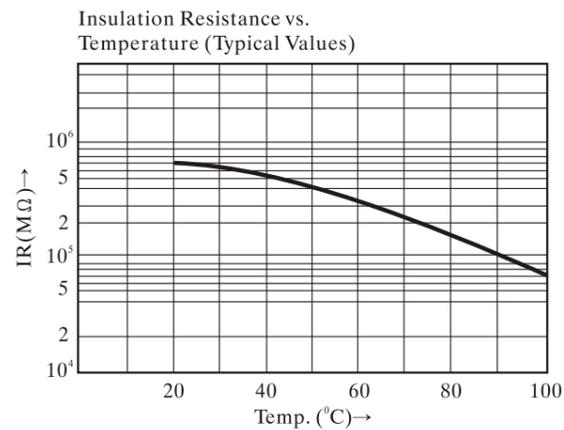
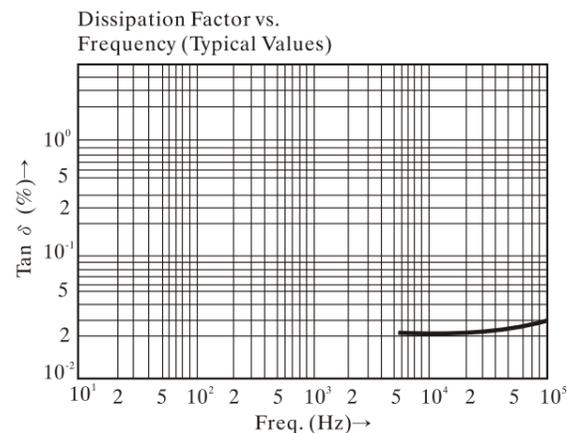
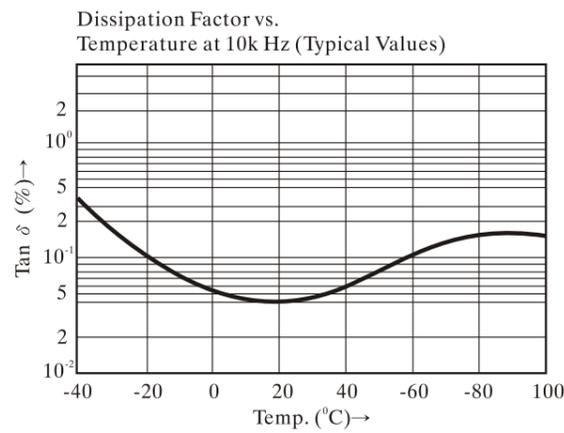
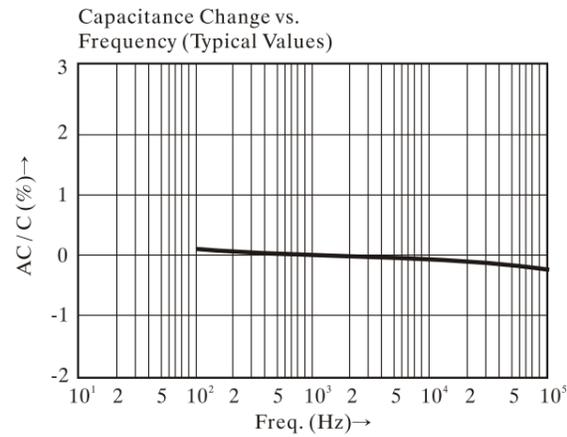
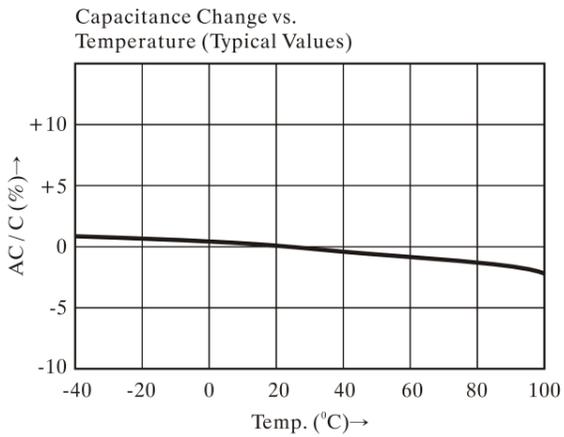
This type is self-healing flat style capacitor, which is winding with Metallized Polyester Film as dielectric, epoxy resin dipped coating and with radial CP wire.

Electrical characteristics :

1. Operating Temperature : -40°C to +85°C
2. Capacitance Range : 0.01 μF -4.7 μF
3. Capacitance Tolerance : J(±5%) K(±10%) M(±20%)
4. Dissipation Factor : 1% Max, at 1KHz and 20°C
5. Insulation Resistance : 9000MΩ for C ≤ 0.33 μF
3000MΩ . μF for C > 0.33 μF
6. Rated Voltage : 100VDC, 250VDC, 400VDC, 630VDC
1000VDC (0.0047~0.015 μF)
7. Dielectric Strength : 175% for 3-5 sec.



- 2mm max. for L > 20mm
- 1.5mm max. For L ≤ 20mm



Code	VDC MFD	2A (100 VDC)					2E (250 VDC)					2G (400 VDC)					2J (630 VDC)				
		W	H	T	P	dφ	W	H	T	P	dφ	W	H	T	P	dφ	W	H	T	P	dφ
103	0.01	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6
153	0.015	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	10.0	6.0	10.0	0.6
223	0.022	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	11.0	6.5	10.0	0.6
333	0.033	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	18.0	11.0	6.0	15.0	0.6
473	0.047	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	18.0	12.0	7.0	15.0	0.6
563	0.056	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	18.0	13.0	8.0	15.0	0.8
683	0.068	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	12.0	11.0	6.5	10.0	0.6	18.0	13.0	8.0	15.0	0.8
104	0.1	12.0	10.0	5.5	10.0	0.6	12.0	10.0	5.5	10.0	0.6	18.0	11.0	7.0	15.0	0.8	18.0	15.0	9.5	15.0	0.8
154	0.15	12.0	10.5	7.0	10.0	0.6	12.0	10.5	7.0	10.0	0.6	18.0	13.0	8.0	15.0	0.8	23.0	16.0	9.0	20.0	0.8
224	0.22	12.0	11.0	7.5	10.0	0.6	18.0	11.0	7.0	15.0	0.8	18.0	14.0	9.5	15.0	0.8	23.0	18.0	11.0	20.0	0.8
334	0.33	12.0	11.0	8.0	10.0	0.6	18.0	12.0	7.0	15.0	0.8	23.0	16.0	8.5	20.0	0.8	31.0	17.5	10.5	27.0	0.8
474	0.47	18.0	11.0	6.5	15.0	0.8	18.0	13.0	8.0	15.0	0.8	23.0	18.0	10.0	20.0	0.8	31.0	21.5	14.0	27.0	0.8
564	0.56	18.0	11.5	7.5	15.0	0.8	18.0	14.5	9.0	15.0	0.8	23.0	19.0	12.0	20.0	0.8					
684	0.68	18.0	12.0	8.0	15.0	0.8	18.0	15.0	10.0	15.0	0.8	23.0	19.0	13.0	20.0	0.8					
105	1.0	18.0	15.0	9.0	15.0	0.8	23.0	17.0	9.5	20.0	0.8	31.0	20.0	12.0	27.0	0.8					
155	1.5	23.0	17.0	9.0	20.0	0.8	23.0	18.0	11.0	20.0	0.8										
225	2.2	23.0	18.0	10.0	20.0	0.8	31.0	20.0	12.0	27.0	0.8										
335	3.3	23.0	22.0	13.0	20.0	0.8	31.0	22.0	14.0	27.0	0.8										
475	4.7	31.0	23.0	13.0	27.0	0.8	31.0	24.5	15.0	27.0	0.8										

