



## UPC Series

- Super low ESR at a high frequency range
- High ripple current capability
- 2,000 hours at 105°C



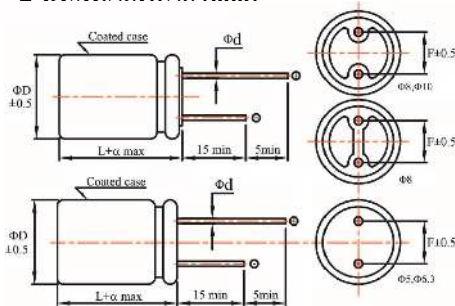
### ◆ SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-55 ~ +105°C	
Working Voltage Range	6.3 ~ 22Vdc	
Surge Voltage	Rated Voltage x1.15	
Capacitance Tolerance	M: ±20% (at 25°C and 120Hz)	
ESR	See the standard ratings table (at 25°C, 100~300KHz)	
Dissipation Factor (Tanδ)	See the standard ratings table (at 25°C, 120Hz)	
Leakage Current ※1	See the standard ratings table (Impress the rated voltage for 2 minutes)	
Low Temperature Characteristics Impedance Ratio	Z(-25°C)/Z(+25°C) ≤1.15 at 100KHz Z(-55°C)/Z(+25°C) ≤1.25 at 100KHz	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C (Part code "F3" for 3000 "F5" for 5000 hours)	
	Capacitance change	≤ ±20% of the initial value
	ESR	≤ 150% of the specified value
	Dissipation factor(tanδ)	≤ 150% of the specified value
Damp Heat (Steady State)	The following requirements shall be satisfied when the capacitor are restored to 25°C after exposing them for 1,000 hours at 60°C 90 to 95% RH	
	Capacitance change	≤ ±20% of the initial value
	ESR	≤ 150% of the specified value
	Dissipation factor(tanδ)	≤ 150% of the specified value
Leakage current	≤ specified value	

※1 In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105°C

※2 ESR should be measured at both of the terminal ends closest to the capacitor body

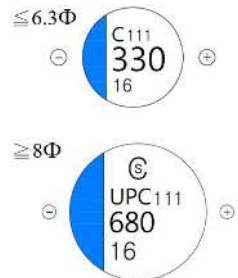
### ◆ DIMENSIONS (mm)



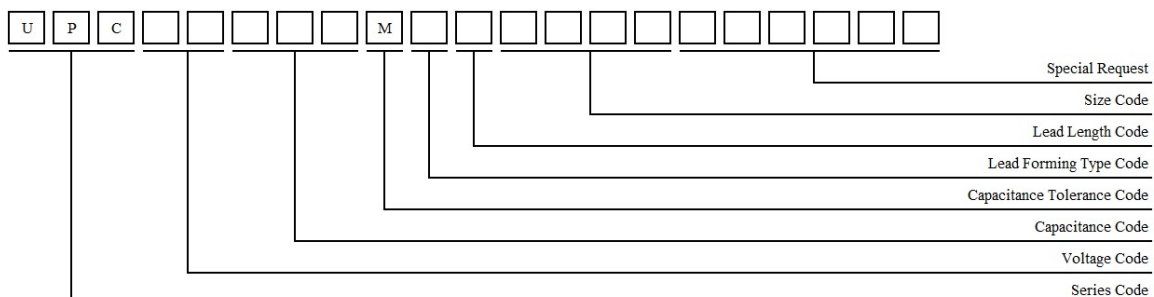
### ◆ Lead

ΦD	5	5.5	6.3	8	10
Φd	0.45	0.45	0.45	0.6	0.6
L	8	8	9	10	8
α	1	1	1	1	1
F	2	2.5	2.5	2.5	2.5

### ◆ Marking



### ◆ PART NUMBER SYSTEM





# UPC Series

◆ **Standard Ratings**

Rated Voltage (Vdc)	Rated Capacitance (μF)	Case Size ΦD×L (mm)	ESR 100~300KHz (mΩmax)	Rated Ripple Current 105°C,100KHz (mArms max)	Tanδ max	Leakage Current (μA max)	Part Number
6.3(0J)	220	5.5×8	12	3,600	0.12	300	UPC0J221MNN5508
	330	5.5×8	12	4,050	0.12	500	UPC0J331MNN5508
	390	5.5×8	11	3,700	0.12	491	UPC0J391MNN5508
	470	5.5×8	12	4,200	0.12	592	UPC0J471MNN5508
	560	6.3×8	8	4,700	0.12	706	UPC0J561MNN6308
	680	6.3×8	10	4,300	0.12	857	UPC0J681MNN6308
	820	6.3×8	8	4,700	0.12	1033	UPC0J821MNN6308
	1500	8×11	9	5650	0.12	1890	UPC0J152MNN0811F5U
6.8(6K)	390	5×8	11	3,100	0.12	530	UPC6K391MNN0508
	470	5×8	11	3,700	0.12	639	UPC6K471MNN0508
	560	6.3×8	8	4,700	0.12	761	UPC6K561MNN6308
	680	6.3×8	8	4,700	0.12	925	UPC6K681MNN6308
	820	6.3×8	8	4,700	0.12	1115	UPC6K821MNN6308
	1000	6.3×12	8	5,000	0.12	1360	UPC6K102MNN6312
7.5(7H)	390	5.5×8	11	3,100	0.12	175	UPC7H391MNN5508
	470	5.5×8	10	3,700	0.12	705	UPC7H471MNN5508
	470	6.3×8	10	4700	0.1	705	UPC7H471MNN6308F5
	500	5.5×9	10	3100	0.12	750	UPC7H501MNN5509
	560	6.3×8	8	4,700	0.12	840	UPC7H561MNN6308
10(1A)	1000	8×11	10	6100	0.12	2000	UPC1A102MNN0811U
12(1B)	330	5.5×9	12	2700	0.12	300	UPC1B331VNN5509V
	330	6.3×8	8	4,700	0.12	792	UPC1B331MNN6308
	470	6.3×11	8	4,700	0.12	1128	UPC1B471MP26311
	560	6.3×11	12	4,700	0.12	1344	UPC1B561MNN6311
	820	6.3×12	14	3300	0.12	1968	UPC1B821MNN6312V
16(1C)	180	5.5×10	20	3,100	0.12	576	UPC1C181MNN5510
	220	5.5×10	20	3,100	0.12	704	UPC1C221MNN5510
	270	5.5×10	20	3100	0.12	864	UPC1C271MNN5510
	330	6.3×11	15	3800	0.12	1056	UPC1C331MNN6311
	330	6.3×11	15	3800	0.12	1056	UPC1C331MNN6311F3
	680	8×11	14	4900	0.12	2176	UPC1C681MNN0811U
	680	8×11	14	4900	0.12	2176	UPC1C681MNN0811F3U
	820	10×9	11	5600	0.12	2624	UPC1C821MNN1009U
20(1D)	270	6.3×12	16	3800	0.12	1080	UPC1D271MNN6312
	330	6.3×11	16	3800	0.12	1320	UPC1D331MNN6311
	330	6.3×12	16	3800	0.12	1320	UPC1D331MNN6312 (U)
22(1P)	330	6.3×12	18	3800	0.12	1452	UPC1P331MNN6312

## PART NUMBER SYSTEM

### ◆ RADIAL LEAD TYPE

Series	Rated Voltage	Capacitance	Tolerance	Lead Forming Type	Lead Length	Case Dimension	Special Request
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
□ □ □	□ □	□ □ □	□	□	□	□ □ □ □	□ □ □ □ □ □

#### (1) Series

Series	DIP	UPS	UPR	UUL	UPE	URP	URH	UGP	UGV	UGS	UPC
	SMD	VSG	VSP	VSU	VSE						

#### (2) Rated Voltage

Code	0E	0J	6K	7H	1A	1B	AG	1C	1D	1P	1E	1F	1V	1H	1J	2A
WV	2.5	6.3	6.8	7.5	10	12	14	16	20	22	25	30	35	50	63	100

#### (3) Capacitance

Code	6R8	100	180	560	101	181	561	102	182
μF	6.8	10	18	56	100	180	560	1000	1800

#### (4) Capacitance Tolerance

Code	J	Q	R	K	V	M	H
%	± 5	+30 / -10	+20 / -0	± 10	+20 / -10	± 20	+20 / -5

#### (5) Lead Type

Code	C	P
Description	Cutting	Taping
Drawing	Fig 1	Fig 2

#### (6) Lead Length (Cut / Formed lead)

Code	3	4	U	7	D	X	R	B	E	G	2	M	T	N
Length	3.5	4.5	5.5	7	4	2.3	2.5	2.8	3.1	3.3	2.5	3.5	3.8	+20mm min
Tolerance	±0.5			±0.2				±0.3			-15mm min			

#### Taping Code

Code	Z	2	3	7	5	S
Lead Pitch: +0.8/-0.2	2.0	2.5	3.5	3.5	5.0	5.0

#### (7) Case Dimension

DIP Code	0508	6305	6308	6316	0807	0808	0811	0816	0820	1012	1016	1020
Size	5×8	6.3×5	6.3×8	6.3×16	8×7	8×8	8×11	8×16	8×20	10×12	10×16	10×20
SMD Code	5057	6343	6357	6377	6309	0867	0897	08C7	1077	10C4		
Size	5×5.7	6.3×4.3	6.3×5.7	6.3×7.7	6.3×9	8×6.7	8×9.7	8×12.7	10×7.7	10×12.4		

#### (8) Special Request

Code	R	F5	L	T
Description	High Rated ripple current	Endurance 5000 hrous	Low Leakage Current	Terminal strength
Code	U	E	X	S
Description	Convex Rubber	Low ESR	Pitch 2.5mm	Limit high

# CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



## ◆ MARKING AND DATE CODE

Trade mark(Chinsan)

Series: UPE110

Code: 270

Rated Capacitance: 270

Rated Voltage: 16

Negative Polarity

Trade Mark "CS"	Chinsan Solid Capacitor, Show on Dimension $\geq 8 \Phi$																																																						
Code (Date Code)	<p>(1)DAY</p> <table border="1" style="width: 100%; text-align: center;"> <tr><th>Code</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr> <tr><td>Week</td><td>The first week</td><td>The second week</td><td>The third week</td><td>The fourth week</td><td>The fifth week</td></tr> </table> <p>(2)Month</p> <table border="1" style="width: 100%; text-align: center;"> <tr><th>Code</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th></tr> <tr><td>Month</td><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td><td>May</td><td>Jun</td></tr> <tr><th>Code</th><th>7</th><th>8</th><th>9</th><th>X</th><th>Y</th><th>Z</th></tr> <tr><td>Month</td><td>July</td><td>Aug</td><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr> </table> <p>(3)Year</p> <table border="1" style="width: 100%; text-align: center;"> <tr><th>Code</th><th>9</th><th>0</th><th>1</th><th>2</th><th>3</th><th>4</th></tr> <tr><td>Year</td><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td><td>2024</td></tr> </table>	Code	1	2	3	4	5	Week	The first week	The second week	The third week	The fourth week	The fifth week	Code	1	2	3	4	5	6	Month	Jan	Feb	Mar	Apr	May	Jun	Code	7	8	9	X	Y	Z	Month	July	Aug	Sep	Oct	Nov	Dec	Code	9	0	1	2	3	4	Year	2019	2020	2021	2022	2023	2024
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$\Phi 8 \sim \Phi 10$	UPS	--	UL	UPE	RP	RH	GP	GV	GS	UPC	SG	SP	SU	SE																																									

## ◆ LEAD FORMING TYPE

Type	Part Number	Dimensions (Unit: mm)																	
		$\Phi D$	F	$t$	L (Part number for lead length and pitch for taping)														
					3	4	U	7	D	X	R	B	E	G	2	M	T		
					3.5	4.5	5.5	7	4	2.3	2.5	2.8	3.1	3.3	2.5	3.5	3.8		
±0.5						±0.2						±0.3							
Cut	C	5	2	----															
		6.3	2.5	----															
		8	3.5	----															
		10	5	----															

# CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



## ◆ TAPING

Figure 1	Symbol	Tolerance	Φ 5		Φ 6.3		Φ 8	
			PS	P5	PS	P5	PS	P5
	Φd	±0.05	0.45		0.45/0.6		0.6	
	P	±0.1	12.7		12.7		12.7	
	P0	±0.2	12.7		12.7		12.7	
	P1	±0.5	3.85		3.85		3.85	
	P2	±1.0	6.35		6.35		6.35	
	F	0.8 -0.2	5		5		5	
	H	±0.5	17.5	18.5	17.5	18.5	17.5	18.5
	H0	±0.5	16		16		16	
	W	±0.5	18		18		18	
	W0	Minimum	12.5		12.5		12.5	
	D0	±0.2	4		4		4	
	t	±0.2	0.7		0.7		0.7	

Figure 2	Symbol	Tolerance	Φ 6.3	Φ 8			Φ 10		
			P2	P3	H3	P7	P5	H5	J5
	Φd	±0.05	0.45/0.6	0.6			0.6		
	P	±0.1	12.7	12.7			12.7		
	P0	±0.2	12.7	12.7			12.7		
	P1	±0.5	5.1	4.6			3.85		
	P2	±1.0	6.35	6.35			6.35		
	F	+0.8 -0.2	2.5	3.5			5		
	H	±0.5	118.5	18.5	20	17.5	18.5	20	21
	H0	±0.5	-	-			-		
	W	±0.5	18	18			18		
	W0	Minimum	12.5	12.5			12.5		
	D0	±0.2	4	4			4		
	t	±0.2	0.7	0.7			0.7		

Figure 3	Symbol	Tolerance	Φ 5
			PZ
	Φd	±0.05	0.45
	P	±0.1	12.7
	P0	±0.2	12.7
	P1	±0.5	5.35
	P2	±1.0	6.35
	F	+0.8 -0.2	2.0
	H	±0.5	18.5
	H0	±0.5	-
	W	±0.5	18
	W0	Minimum	12.5
	D0	±0.2	4
	t	±0.2	0.7

### Packing quantity

Size		Inner Box	Carton Box
ØD	L	Q'ty (Pes.)	Q'ty (Pes.)
5	8~12	2500	12500
	5.5	8~12	2200
6.3	5~12	2000	10000
	16	2000	10000
8	6~12	1000	5000
	16~22	1200	6000
10	7~12	800	4000
	16~22	800	4000