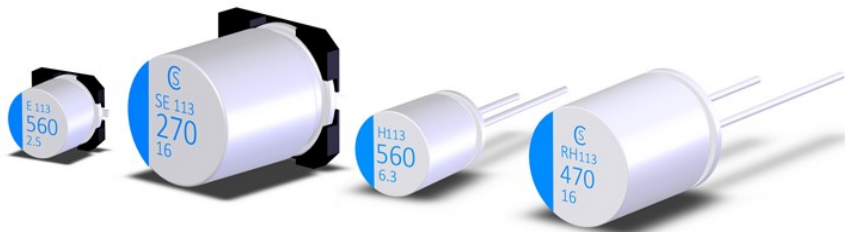


***CONDUCTIVE POLYMER
ALUMINUM SOLID CAPACITOR***





Application Guidelines

1. Polarity

CS-CAP is solid aluminum electrolytic capacitors with positive and negative electrodes. Do not reverse the polarity when using. If it is used with the polarities reversed, its life may shorten because of increasing leakage current or short circuit.

2. Prohibited Circuits

Since problems can be expected due to leakage current increasing during soldering and other processes, CS-CAP cannot be used in the following circuits:

- (1) High impedance circuits
- (2) Coupling circuits
- (3) Time constant circuits
- (4) Connection of two or more capacitors in series for higher withstand voltage
- (5) Circuits to get bad influence by big leakage current

* In addition to the leakage current fluctuation above, the operational conditions such as characteristics at high and low temperature, damp heat and endurance stipulated in the specifications will affect the capacitance. The fluctuation of the capacitance may cause problem if it is used as a time constant capacitor, which is extremely sensitive to the fluctuation of the capacitance. Do not use it as a time constant capacitor. Additionally, please contact Taiwan Chinsan Electronic Industrial Co., Ltd. for usage of two or more CS-CAP in series for voltage proof.

3. Over-Voltage

Over voltage exceeding the rated voltage may not be applied even for an instant as it may cause a short circuit.

4. Charge and Discharge

Do not use standard CS-CAP to applications with rapid charge and discharge cycles. Consult us about capacitors specially designed for rapid charge-discharge cycles.

5. Soldering

The soldering conditions are to be within the range prescribed in the specifications. If the specifications are not followed, there is the possibility of the appearance becoming defective and of increase of abnormal leakage current and capacity reduction when soldering is conducted under conditions that are harsher than those stipulated.

Sufficient PCB installation space (PCB means Printed Circuit Board after this.) Sealing resin of CS-CAP may have a bulge. The design must give consideration to the standard of height and lead position displacement given in the specifications.

6. Use of CS-CAP for Industrial equipment's

To ensure reliability when the CS-CAP is used in industrial equipment's, design must allow for its capacitance, impedance and other characteristics.

7. Use of CS-CAP for Equipment's regarding Human Life

In case of using in equipment's regarding human life (e.g. Space equipment, aeronautic equipment and atomic equipment etc.), be sure to talk over the matter with Taiwan Chinsan Electronic Industrial Co., Ltd. Don't use without recognition document of Taiwan Chinsan Electronic Industrial Co., Ltd.



8. Storage

- (1) Store CS-CAP with the temperature range between 15 to 35°C and the relative humidity of 75% or less without direct sunshine and store CS-CAP in the package states if possible.
- (2) CS-CAP are recommended that you shall open the bag just before use and CS-CAP shall be used up.
- (3) Never store CS-CAP in which it is directly exposed to water, brine, oil or in condensation status.
- (4) Never store CS-CAP in any area filled with poisonous gases (including hydrogen sulfide, sulfurous acid, nitrous acid, chlorine and ammonia).
- (5) Never store CS-CAP in any area to which ultraviolet and/or radial rays are radiated.

9. Cleaning

Concerning about HCFC, higher alcohol system, petroleum system, terrene system, water system with surface active agent and other solvents the washing way (separateness or combinations) by soak, ultrasonic wave, boil, vapor etc. is confirmed under the maker's recommendation. Please contact us if you require further details.

10. Notes on Circuit designs for CS-CAP

10.1 Performance

Use CS-CAP within the rating and performance ranges defined in this specifications.

10.2 Operating temperature and ripple current

If CS-CAP is used at a temperature higher than the upper category temperature, or excess ripple current flows through CS-CAP, there are high possibilities of life cycle reduction or leakage current increasing to cause CS-CAP defective.

10.3 Leakage current

The leakage current of CS-CAP may increase slightly by soldering conditions. The application of DC voltage enables the capacitors to be repaired by itself and this leads the leakage current to be smaller gradually.

10.4 Applied voltage

For the reliability of CS-CAP, it is recommended that the voltage applied to the peak value of the ripple voltage should be less than the rated voltage.

10.5 Failure mode

CS-CAP contains a conductive polymer. The life ends mostly due to random failure mode, mainly short circuit. In case of short circuit, CS-CAP can be overheated by continuous current flow, the case of CS-CAP would be removed by internal pressure increasing.

10.6 Insulation

Plastic coated case of CS-CAP can't guarantee the insulation. Do not use CS-CAP in areas requiring insulation.



11. Soldering condition for CS-CAP

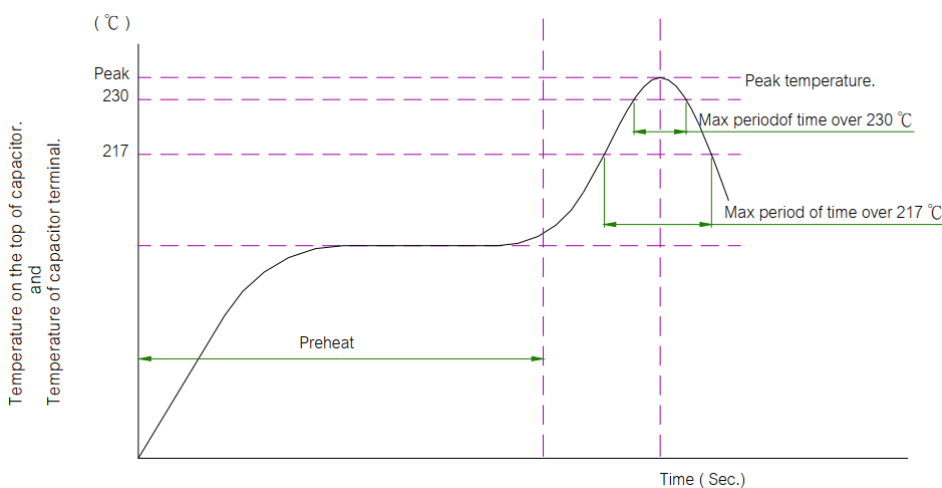
11.1 Wave soldering condition for DIP type

Wave soldering	Temperature	Time
Preheating	125°C Max	Within 120 sec
Soldering condition	260+5°C Max	Within 10 sec

11.2 Reflow soldering condition for SMD type

Preheating	>217°C	>230°C	Peak Temp	Reflow times
150°C~180°C 120sec Max	50sec Max	40sec Max	260°C MAX	1 cycle only
			250°C MAX	2 cycles allowed

If reflow shall be done within 2 cycles, please make sure the parts have cooling down to the room temperature (5 to 35°C) before the second soldering process.



11.3 Hand soldering

Use a soldering iron for rework. Do not exceed an iron tip temperature of 380±10°C and an exposure time of 3±0.5 seconds.

12. Catalogs

Specifications in the catalogs are subject to change without notice. The data shown in the catalogs are not assured as the whole performance values, but typical values.

For more details, refer to JEITA RCR-2367C (March 2019) with the title “Safety Application Guide for fixed aluminum electrolytic capacitors for use in electronic equipment”.

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



◆ MARKING AND DATE CODE

Trade mark(Chinsan)

Negative Polarity

Trade Mark "CS"	Chinsan Solid Capacitor, Show on Dimension $\geq 8 \Phi$																																																									
<p>Code (Date Code)</p> <div style="display: flex; justify-content: space-around; margin-bottom: 5px;"> (1) (2) (3) </div> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px 5px; text-align: center;">1</div> <div style="border: 1px solid black; padding: 2px 5px; text-align: center;">1</div> <div style="border: 1px solid black; padding: 2px 5px; text-align: center;">3</div> </div>	<p>(1)Week</p> <table border="1" style="width: 100%; border-collapse: collapse; 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%; border-collapse: collapse; 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%; border-collapse: collapse; text-align: center;"> <tr> <th>Code</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> </tr> <tr> <td>Year</td> <td>2022</td> <td>2023</td> <td>2024</td> <td>2025</td> <td>2026</td> <td>2027</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	2	3	4	5	6	7	Year	2022	2023	2024	2025	2026	2027			
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Series (Print Code)	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Series</th> <th>UPS</th> <th>UPR</th> <th>UUL</th> <th>UPE</th> <th>URP</th> <th>URH</th> <th>UGP</th> <th>UGV</th> <th>UGS</th> <th>UGT</th> <th>UPC</th> <th>UPD</th> <th>VSG</th> <th>VSP</th> <th>VSU</th> <th>VSE</th> <th>VSH</th> <th>VSD</th> </tr> </thead> <tbody> <tr> <td>$\Phi 5 \sim \Phi 6.3$</td> <td>--</td> <td>R</td> <td>L</td> <td>E</td> <td>--</td> <td>H</td> <td>P</td> <td>V</td> <td>S</td> <td>T</td> <td>C</td> <td>D</td> <td>G</td> <td>P</td> <td>U</td> <td>E</td> <td>H</td> <td>D</td> </tr> <tr> <td>$\Phi 8 \sim \Phi 10$</td> <td>UPS</td> <td>--</td> <td>UL</td> <td>UPE</td> <td>RP</td> <td>RH</td> <td>GP</td> <td>GV</td> <td>GS</td> <td>GT</td> <td>UPC</td> <td>UPD</td> <td>SG</td> <td>SP</td> <td>SU</td> <td>SE</td> <td>SH</td> <td>SD</td> </tr> </tbody> </table>	Series	UPS	UPR	UUL	UPE	URP	URH	UGP	UGV	UGS	UGT	UPC	UPD	VSG	VSP	VSU	VSE	VSH	VSD	$\Phi 5 \sim \Phi 6.3$	--	R	L	E	--	H	P	V	S	T	C	D	G	P	U	E	H	D	$\Phi 8 \sim \Phi 10$	UPS	--	UL	UPE	RP	RH	GP	GV	GS	GT	UPC	UPD	SG	SP	SU	SE	SH	SD
Series	UPS	UPR	UUL	UPE	URP	URH	UGP	UGV	UGS	UGT	UPC	UPD	VSG	VSP	VSU	VSE	VSH	VSD																																								
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CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



PART NUMBER SYSTEM

◆ CS-CAP TYPE

Series	Rated Voltage	Capacitance	Tolerance	Lead Type	Lead Length	Case Dimension	Special Request
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

(1) Series

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

(2) Rated Voltage

Code	0E	0G	0J	6K	7H	1A	1B	AG	1C	1D	1P	1E	1F	1V	1H	1J	2A
WV	2.5	4.0	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	N	C	P	H	J
Description	Long Lead	Cutting	Taping	Taping	Taping
Drawing	-	Fig 1	Fig 10,11,12	Fig 11	Fig 11

(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	6311	0807	0808	0811	0816	0820	1012	1016	1020
Size	5×8	6.3×5	6.3×8	6.3×11	8×7	8×8	8×11	8×16	8×20	10×12	10×16	10×20
SMD Code	0557	6343	6357	6377	6309	0867	0897	08C7	1008	1010	1012	
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	10×8	10×10	10×12	

(8) Special Request

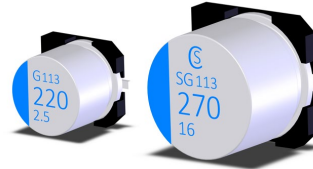
Code	R	F	L	D
Description	High Rated Ripple Current	Endurance	Low Leakage Current	Low Dissipation Factor
Code	U	E	X	---
Description	Convex Rubber	Low ESR	Pitch 2.5mm	---

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSG Series

- Low ESR at a high frequency ranged
- High ripple current capability
- 2,000 hours at 105°C



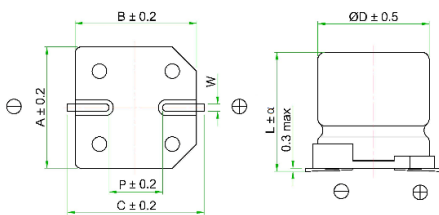
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	2.5 ~ 63Vdc								
Surge Voltage	Rated Voltage ×1.15								
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 for 2,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-25 (2009)								

※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.

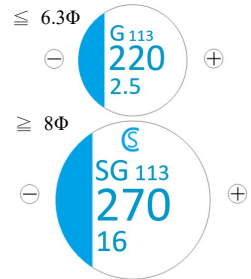
◆ DIMENSIONS (mm)



◆ LEAD

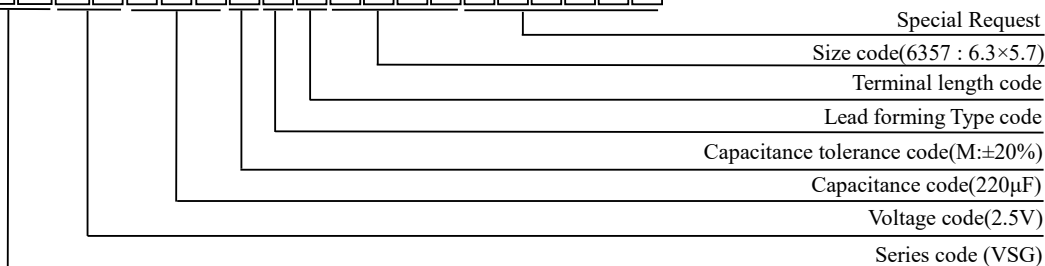
Code	Case size	ΦD	L	α	A	B	C	W	P
0557	5×5.7	5	5.7	0.3	5.3	5.3	5.9	0.5~0.8	1.4
6357	6.3×5.7	6.3	5.7	0.3	6.6	6.6	7.3	0.5~0.8	2.1
6309	6.3×9	6.3	9	1	6.6	6.6	7.3	0.7~1.1	2.1
0867	8×6.7	8	6.7	0.3	8.3	8.3	9	0.7~1.1	3.2
0897	8×9.7	8	9.7	0.5	8.3	8.3	9	0.7~1.1	3.2
1008	10×8	10	8	0.5	10.3	10.3	11	0.7~1.1	4.6
1012	10×12	10	12	0.5	10.3	10.3	11	0.7~1.1	4.6

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 2.5V 220μF)

V S G 0 E 2 2 1 M C B 6 3 5 7



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSG Series

◆ STANDARD RATINGS

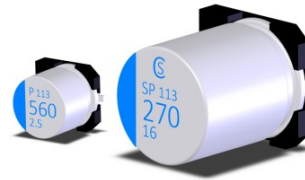
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
2.5 (0E)	220	6.3×5.7	25	2500	0.12	300	VSG0E221MCB6357
	560	6.3×5.7	25	2500	0.12	420	VSG0E561MCB6357
	560	6.3×5.7	16	3500	0.12	300	VSG0E561MCB6357E
	680	8×6.7	20	3370	0.12	510	VSG0E681MCB0867
	1500	10×12	12	5400	0.12	1125	VSG0E152MCB1012
	2700	10×12	12	5070	0.12	2025	VSG0E272MCB1012
4.0 (0G)	100	6.3×5.7	35	2200	0.12	300	VSG0G101MCB6357
	150	5×5.7	30	1490	0.12	300	VSG0G151MCB0557
	330	6.3×5.7	27	2700	0.12	400	VSG0G331MCB6357
	680	10×8	20	4130	0.12	816	VSG0G681MCB1008
	1200	10×12	12	5500	0.12	1440	VSG0G122MCB1012
6.3 (0J)	82	6.3×5.7	35	2200	0.12	300	VSG0J820MCB6357
	100	5×5.7	35	1380	0.12	300	VSG0J101MCB0557
	220	6.3×5.7	27	2320	0.12	416	VSG0J221MCB6357
	330	10×8	22	3600	0.12	624	VSG0J331MCB1008
	390	8×6.7	18	3220	0.12	737	VSG0J391MCB0867
	820	10×12	12	5500	0.12	1550	VSG0J821MCB1012
10 (1A)	47	6.3×5.7	40	2100	0.12	300	VSG1A470MCB6357
	56	6.3×5.7	40	2100	0.12	300	VSG1A560MCB6357
	120	8×6.7	30	2600	0.12	360	VSG1A121MCB0867
	270	10×8	25	3500	0.12	810	VSG1A271MCB1008
	330	10×8	25	3770	0.12	990	VSG1A331MCB1008
	560	10×12	13	5300	0.12	1680	VSG1A561MCB1012
16 (1C)	33	6.3×5.7	37	2050	0.12	300	VSG1C330MCB6357
	39	6.3×5.7	45	2000	0.12	300	VSG1C390MCB6357
	82	8×6.7	40	2300	0.12	394	VSG1C820MCB0867
	100	5×5.7	27	3000	0.12	700	VSG1C101MCB0557
	100	6.3×5.7	24	2490	0.12	300	VSG1C101MCB6357
	100	10×8	30	3200	0.12	480	VSG1C101MCB1008
	180	6.3×5.7	22	3300	0.12	576	VSG1C181MCB6357
	180	10×8	29	3200	0.12	864	VSG1C181MCB1008
	270	6.3×9	22	3300	0.12	864	VSG1C271MCB6309
	270	8×6.7	22	3300	0.12	864	VSG1C271MCB0867
	330	8×9.7	16	3890	0.12	1584	VSG1C331MCB0897
	330	10×12	16	4800	0.12	1584	VSG1C331MCB1012
	560	10×12	16	4720	0.12	1792	VSG1C561MCB1012
1000	10×12	18	4300	0.12	3200	VSG1C102MCB1012	
25 (1E)	27	6.3×5.7	40	2100	0.12	135	VSG1E270MCB6357L
	47	6.3×5.7	30	2800	0.12	235	VSG1E470MCB6357
35 (1V)	47	10×12	28	3800	0.12	410	VSG1V470MCB1012
	100	10×12	29	2600	0.12	700	VSG1V101MCB1012
	220	10×12	28	2600	0.12	1540	VSG1V221MCB1012
50 (1H)	100	10×12	27	3600	0.12	1000	VSG1H101MCB1012
63 (1J)	22	8×9.7	37	1700	0.12	300	VSG1J220MCB0897

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSP Series

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



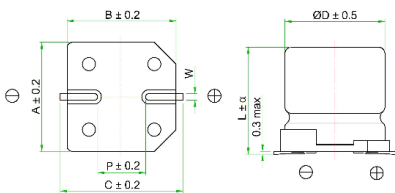
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	2.5 ~ 25Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-25 (2009)								

※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.

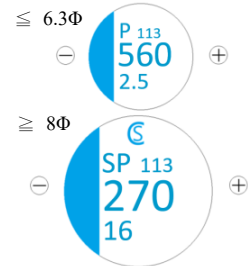
◆ DIMENSIONS (mm)



◆ LEAD

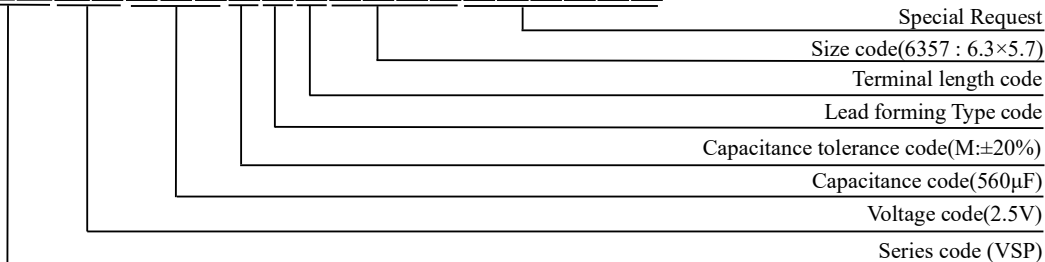
Code	Case size	ΦD	L	α	A	B	C	W	P
0557	5×5.7	5	5.7	0.3	5.3	5.3	5.9	0.5~0.8	1.4
6343	6.3×4.3	6.3	4.3	+0.4 -0.3	6.6	6.6	7.3	0.5~0.8	2.1
6357	6.3×5.7	6.3	5.7	0.3	6.6	6.6	7.3	0.5~0.8	2.1
6309	6.3×9	6.3	9	1	6.6	6.6	7.3	0.7~1.1	2.1
0867	8×6.7	8	6.7	0.3	8.3	8.3	9	0.7~1.1	3.2
0897	8×9.7	8	9.7	0.5	8.3	8.3	9	0.7~1.1	3.2
08B7	8×11.7	8	11.7	0.5	8.3	8.3	9	0.7~1.1	3.2

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 2.5V 560µF)

V S P 0 E 5 6 1 M C B 6 3 5 7



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSP Series

◆ STANDARD RATINGS

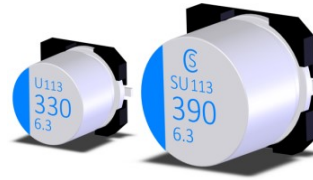
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
2.5 (0E)	180	5×5.7	21	2670	0.12	300	VSP0E181MCB0557
	330	5×5.7	15	3150	0.12	300	VSP0E331MCB0557
	330	6.3×4.3	17	3500	0.12	413	VSP0E331MCB6343
	390	6.3×5.7	15	3160	0.12	344	VSP0E391MCB6357
	560	6.3×5.7	16	3600	0.12	420	VSP0E561MCB6357
	560	6.3×5.7	10	3870	0.12	500	VSP0E561MCB6357E
	680	8×6.7	13	4100	0.12	510	VSP0E681MCB0867
4.0 (0G)	330	6.3×5.7	15	3160	0.12	396	VSP0G331MCB6357
	1500	8×11.7	12	4700	0.12	1800	VSP0G152MCB08B7
6.3 (0J)	100	5×5.7	24	2500	0.12	300	VSP0J101MCB0557
	120	5×5.7	24	2500	0.12	300	VSP0J121MCB0557
	220	5×5.7	12	3500	0.12	700	VSP0E221MCB0557
	220	6.3×4.3	17	3160	0.12	693	VSP0J221MCB6343
	220	6.3×5.7	15	3160	0.12	416	VSP0J221MCB6357
	330	6.3×5.7	17	3600	0.12	624	VSP0J331MCB6357
	470	8×11.7	15	3950	0.12	888	VSP0J471MCB08B7
	560	6.3×9	10	4700	0.12	706	VSP0J561MCB6309
10 (1A)	330	8×11.7	17	3950	0.12	990	VSP1A331MCB08B7
16 (1C)	100	6.3×5.7	24	2490	0.12	320	VSP1C101MCB6357
	180	8×9.7	16	3890	0.12	576	VSP1C181MCB0897
	270	6.3×9	9	5300	0.12	864	VSP1C271MCB6309
	270	8×9.7	16	3890	0.12	864	VSP1C271MCB0897
	47	6.3×5.7	30	2500	0.12	588	VSP1E470MCB6357
25 (1E)	100	8×9.7	24	3300	0.12	500	VSP1E101MCB0897
	120	8×9.7	22	3500	0.12	600	VSP1E121MCB0897

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSU Series

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



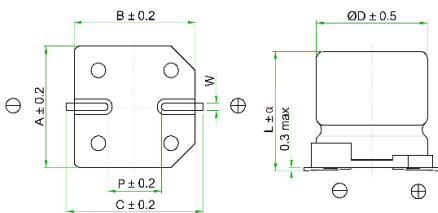
◆ SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-55 ~ +105°C	
Working Voltage Range	2.5 ~ 6.3Vdc	
Surge Voltage	Rated Voltage × 1.15	
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 for 2,000 hours at 105°C.	
	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
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
Others	Conforms to JIS-C-5101-25 (2009)	

※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.

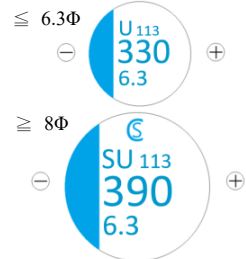
◆ DIMENSIONS (mm)



◆ LEAD

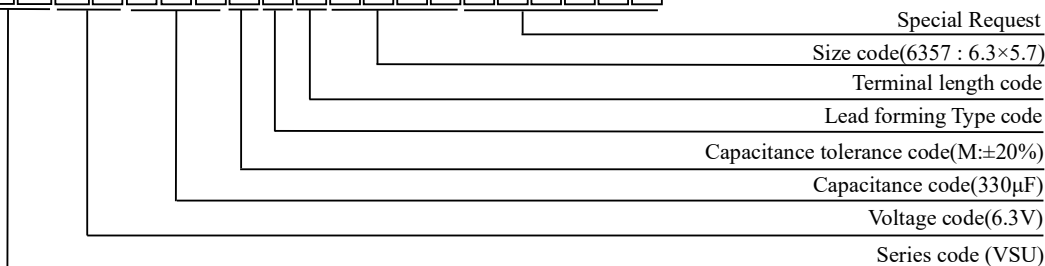
Code	Case size	ΦD	L	α	A	B	C	W	P
0557	5×5.7	5	5.7	0.3	5.3	5.3	5.9	0.5~0.8	1.4
6357	6.3×5.7	6.3	5.7	0.3	6.6	6.6	7.3	0.5~0.8	2.1
0867	8×6.7	8	6.7	0.3	8.3	8.3	9	0.7~1.1	3.2

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 6.3V 560μF)

V S U 0 J 3 3 1 M C B 6 3 5 7



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSU Series

◆ STANDARD RATINGS

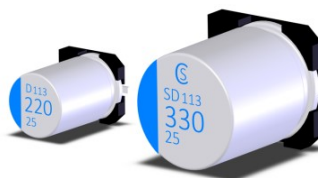
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mA rms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
2.5 (0E)	330	5×5.7	12	3860	0.12	300	VSU0E331MCB0557
	390	5×5.7	10	3650	0.12	300	VSU0E391MCB0557
	390	6.3×5.7	10	3650	0.12	300	VSU0E391MCB6357
6.3 (0J)	330	6.3×5.7	10	3900	0.12	623	VSU0J331MCB6357
	390	8×6.7	9	4500	0.12	737	VSU0J391MCB0867

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSD Series NEW

- Super low ESR at a high frequency ranged
- Hight voltage and high capacitance
- 2,000 hours at 105°C



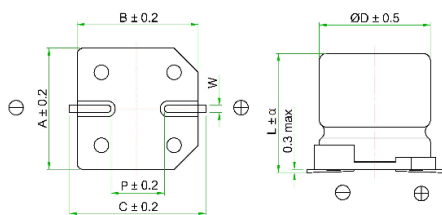
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-40 ~ +105°C								
Working Voltage Range	25 ~ 63Vdc								
Surge Voltage	Rated Voltage ×1.15								
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(-40°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 for 2,000 hours at 105°C. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
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. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-25 (2009)								

※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.

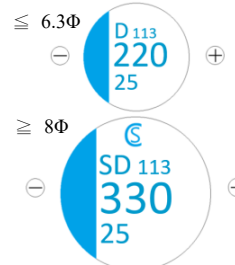
◆ DIMENSIONS (mm)



◆ LEAD

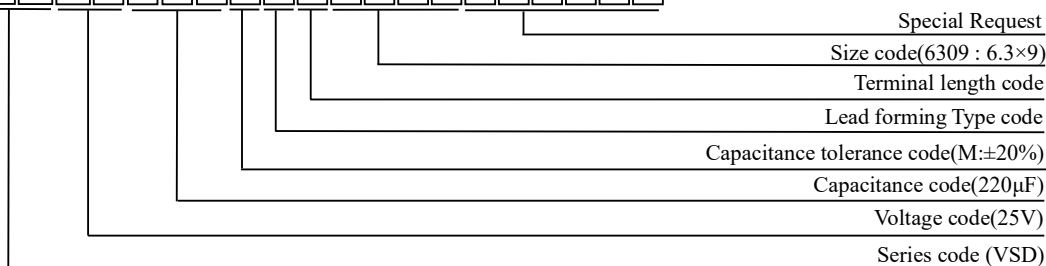
Code	Case size	ΦD	L	α	A	B	C	W	P
6357	6.3×5.7	6.3	5.7	0.3	6.6	6.6	7.3	0.5~0.8	2.1
6309	6.3×9	6.3	9	1	6.6	6.6	7.3	0.7~1.1	2.1
0867	8×6.7	8	6.7	0.3	8.3	8.3	9	0.7~1.1	3.2
0897	8×9.7	8	9.7	0.5	8.3	8.3	9	0.7~1.1	3.2
08B7	8×11.7	8	11.7	0.5	8.3	8.3	9	0.7~1.1	3.2
08C7	8×12.7	8	12.7	0.5	8.3	8.3	9	0.7~1.1	3.2
1008	10×8	10	8	0.5	10.3	10.3	11	0.7~1.1	4.6

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 25V 220µF)

V S D 1 E 2 2 1 M C B 6 3 0 9



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSD Series **NEW**

◆ STANDARD RATINGS

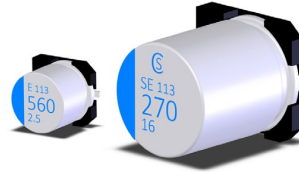
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mA rms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
25 (1E)	100	6.3×5.7	30	3000	0.12	500	VSD1E101MCB6357
	220	6.3×9	25	3200	0.12	550	VSD1E221MCB6309
	330	10×8	30	3100	0.12	825	VSD1E331MCB1008
	330	8×9.7	18	4650	0.12	825	VSD1E331MCB0897
	390	8×11.7	25	4800	0.12	1950	VSD1E391MCB08B7
	470	8×12.7	18	4100	0.12	2350	VSD1E471MCB08C7
	560	8×12.7	20	4650	0.12	2800	VSD1E561MCB08C7
35 (1V)	100	6.3×9	40	2300	0.12	350	VSD1V101MCB6309
	100	8×6.7	35	2100	0.12	700	VSD1V101MCB0867
63 (1J)	22	6.3×9	49	1500	0.12	500	VSD1J220MCB6309

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSE Series

- Super low ESR at a high frequency ranged
- High ripple current capability
- 5,000 hours at 105°C

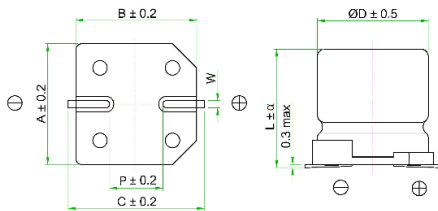


◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	2.5 ~ 35Vdc								
Surge Voltage	Rated Voltage ×1.15								
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 for 5,000 hours at 105°C. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
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. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-25 (2009)								

- ※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.

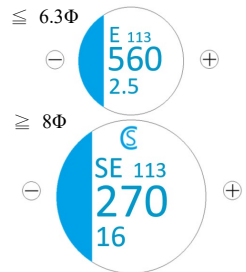
◆ DIMENSIONS (mm)



◆ LEAD

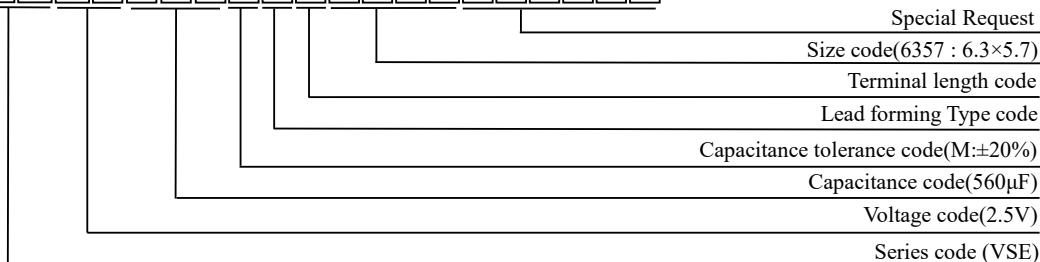
Code	Case size	ΦD	L	α	A	B	C	W	P
6343	6.3×4.3	6.3	4.3	+0.4 -0.3	6.6	6.6	7.3	0.5~0.8	2.1
6357	6.3×5.7	6.3	5.7	0.3	6.6	6.6	7.3	0.5~0.8	2.1
6309	6.3×9	6.3	9	1	6.6	6.6	7.3	0.7~1.1	2.1
0867	8×6.7	8	6.7	0.3	8.3	8.3	9	0.7~1.1	3.2
0897	8×9.7	8	9.7	0.5	8.3	8.3	9	0.7~1.1	3.2
08C7	8×12.7	8	12.7	0.5	8.3	8.3	9	0.7~1.1	3.2
1012	10×12	10	12	0.5	10.3	10.3	11	0.7~1.1	4.6

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 2.5V 560µF)

V S E 0 E 5 6 1 M C B 6 3 5 7



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSE Series

◆ STANDARD RATINGS

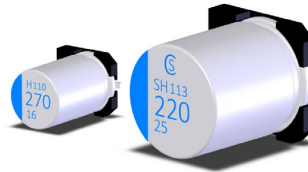
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
2.5 (0E)	560	6.3×5.7	16	3500	0.10	300	VSE0E561MCB6357
	560	6.3×5.7	10	3500	0.10	500	VSE0E561MCB6357E
4.0 (0G)	560	8×6.7	22	3220	0.10	448	VSE0G561MCB0867
6.3 (0J)	220	6.3×4.3	17	3160	0.10	693	VSE0J221MCB6343
	220	6.3×5.7	15	3160	0.10	300	VSE0J221MCB6357
	220	6.3×5.7	10	3900	0.10	500	VSE0J221MCB6357E
	330	6.3×5.7	15	3160	0.10	416	VSE0J331MCB6357
	390	8×6.7	22	3220	0.10	491	VSE0J391MCB0867
	560	6.3×9	8	4700	0.10	706	VSE0J561MCB6309E
10 (1A)	120	6.3×5.7	22	2600	0.10	300	VSE1A121MCB6357
	270	8×6.7	22	3220	0.10	540	VSE1A271MCB0867
16 (1C)	68	6.3×5.7	40	2450	0.10	544	VSE1C680MCB6343
	100	6.3×5.7	24	2490	0.10	320	VSE1C101MCB6357
	270	6.3×9	9	5800	0.10	864	VSE1C271MCB6309ER
	270	8×9.7	16	4070	0.10	864	VSE1C271MCB0897
	330	6.3×9	20	3100	0.10	1056	VSE1C331MCB6309
	560	8×12.7	16	3800	0.10	1792	VSE1C561MCB08C7
	560	10×12	16	3800	0.10	1792	VSE1C561MCB1012
25 (1E)	47	6.3×5.7	30	2500	0.10	588	VSE1E470MCB6357
	100	8×9.7	24	3300	0.10	500	VSE1E101MCB0897
35 (1V)	120	10×12	32	2400	0.10	840	VSE1V121MCB1012

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSH Series NEW

- Low ESR at a high frequency ranged
- High ripple current capability
- 2,000 hours at 125°C



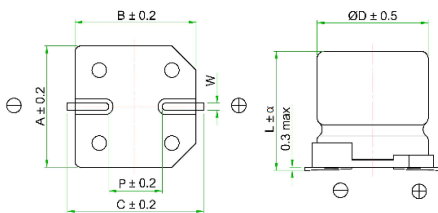
◆ SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-55 ~ +125°C	
Working Voltage Range	2.5 ~ 35Vdc	
Surge Voltage	Rated Voltage ×1.15	
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 for 2,000 hours at 125°C.	
	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
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
Others	Conforms to JIS-C-5101-25 (2009)	

※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.

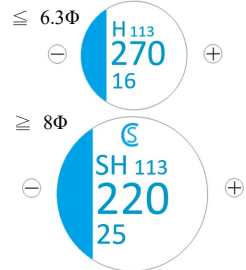
◆ DIMENSIONS (mm)



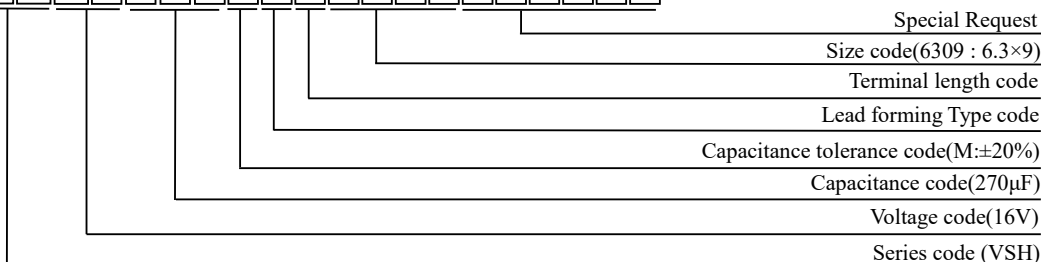
◆ LEAD

Code	Case size	ΦD	L	α	A	B	C	W	P
6357	6.3×5.7	6.3	5.7	0.3	6.6	6.6	7.3	0.5~0.8	2.1
6309	6.3×9	6.3	9	1	6.6	6.6	7.3	0.7~1.1	2.1
0867	8×6.7	8	6.7	0.3	8.3	8.3	9	0.7~1.1	3.2
0897	8×9.7	8	9.7	0.5	8.3	8.3	9	0.7~1.1	3.2
08B7	8×11.7	8	11.7	0.5	8.3	8.3	9	0.7~1.1	3.2
08C7	8×12.7	8	12.7	0.5	8.3	8.3	9	0.7~1.1	3.2
1010	10×10	10	10	0.5	10.3	10.3	11	0.7~1.1	4.6
1012	10×12	10	12	0.5	10.3	10.3	11	0.7~1.1	4.6

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 16V 270µF)



Special Request

Size code(6309 : 6.3×9)

Terminal length code

Lead forming Type code

Capacitance tolerance code(M:±20%)

Capacitance code(270µF)

Voltage code(16V)

Series code (VSH)

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



VSH Series NEW

◆ STANDARD RATINGS

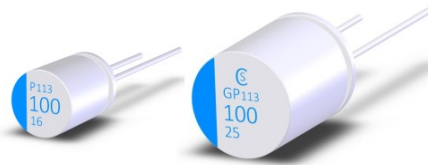
WV (Vdc)	Cap (μ F)	Case Size (mm) Φ D×L	ESR 100~300KHz (m Ω max)	Rated Ripple current (mA _{rms} max)		Tan δ max	Leakage Current (μ A max)	Part Number
				≤105°C	105~125°C			
6.3 (0J)	220	6.3×5.7	15	3160	1000	0.12	500	VSH0J221MCB6357
10 (1A)	270	6.3×9	20	3950	1650	0.12	540	VSH1A271MCB6309
	330	6.3×9	25	3950	1650	0.12	660	VSH1A331MCB6309
16 (1C)	100	6.3×5.7	20	2490	700	0.12	320	VSH1C101MCB6357
	270	6.3×9	22	3300	1040	0.12	864	VSH1C271MCB6309
20 (1D)	180	8×6.7	29	4650	1600	0.12	720	VSH1D181MCB0867
25 (1E)	22	6.3×5.7	35	1400	560	0.12	280	VSH1E220MCB6357
	150	8×9.7	22	2600	1040	0.12	750	VSH1E151MCB0897
	180	8×11.7	18	2800	1080	0.12	900	VSH1E181MCB08B7
	220	8×9.7	22	3500	1100	0.12	600	VSH1E221MCB0897
	220	8×12.7	25	2800	1080	0.12	1100	VSH1E221MCB08C7
	330	8×12.7	25	2800	1080	0.12	1650	VSH1E331MCB08C7
35 (1V)	470	10×12	14	4700	1600	0.12	2350	VSH1E471MCB1012
	22	6.3×5.7	50	1300	400	0.12	154	VSH1V220MCB6357
	47	10×10	30	3800	1470	0.12	410	VSH1V470MCB1010
	56	6.3×9	40	2400	800	0.12	392	VSH1V560MCB6309
	100	8×11.7	30	2800	1080	0.12	700	VSH1V101MCB08B7
	100	8×12.7	30	2800	1080	0.12	700	VSH1V101MCB08C7
120	8×12.7	30	2800	1080	0.12	840	VSH1V121MCB08C7	

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UGP Series

- Low ESR at a high frequency ranged
- High ripple current capability
- 2,000 hours at 105°C



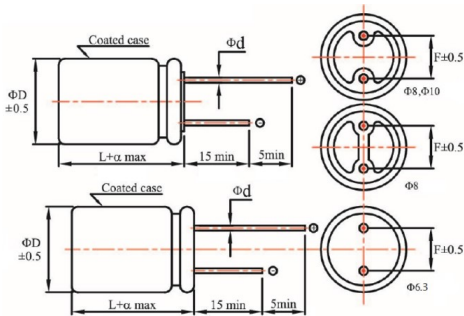
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	10 ~ 25Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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.

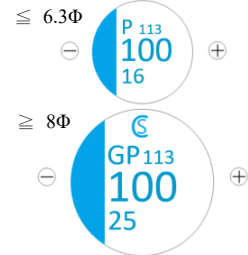
◆ DIMENSIONS (mm)



◆ LEAD

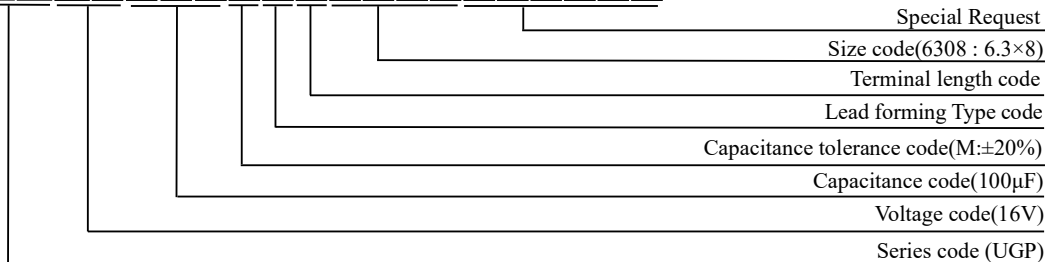
ΦD	6.3	6.3	8	8	10
Φd	0.6	0.6	0.6	0.6	0.6
L	8	11	7~8	11	7~12
α	1	1.5	1	1.5	1.5
F	2.5	2.5	3.5	3.5	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 16V 100μF)

U G P I C I 0 1 M N N 6 3 0 8



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UGP Series

◆ STANDARD RATINGS

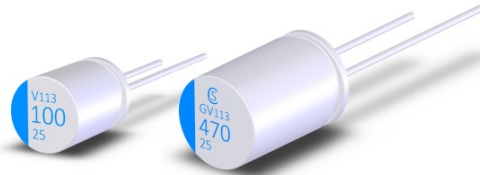
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
10 (1A)	470	8×7	23	3100	0.12	940	UGP1A471MNN0807U
	470	8×8	20	3400	0.12	940	UGP1A471MNN0808U
	470	10×7	19	3800	0.12	940	UGP1A471MNN1007U
	680	8×11	20	3900	0.12	1360	UGP1A681MNN0811U
	1000	10×12	19	6100	0.12	2000	UGP1A102MNN1012U
	1500	10×12	19	4500	0.12	3000	UGP1A152MNN1012U
16 (1C)	100	6.3×8	24	2490	0.12	320	UGP1C101MNN6308
	180	8×8	19	3400	0.12	576	UGP1C181MNN0808U
	270	6.3×11	20	3100	0.12	864	UGP1C271MNN6311
	330	10×12	19	4500	0.12	1056	UGP1C331MNN1012U
	470	10×12	19	4500	0.12	1504	UGP1C471MNN1012U
20 (1D)	470	8×11	14	4900	0.12	1880	UGP1D471MNN0811U
25 (1E)	47	8×7	45	1890	0.12	294	UGP1E470MNN0807U
	47	8×11	30	2500	0.12	568	UGP1E470MNN0811U
	68	8×11	24	3320	0.12	425	UGP1E680MNN0811U
	100	10×12	20	4320	0.12	625	UGP1E101MNN1012U

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UGV Series

- Low ESR at a high frequency ranged
- High ripple current capability
- 2,000 hours at 105°C



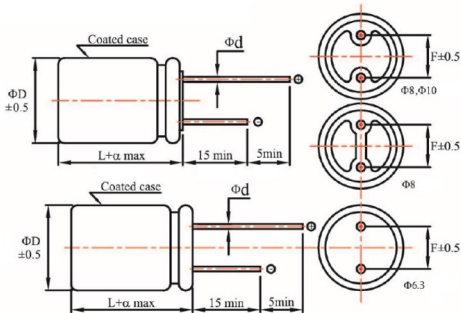
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	20 ~ 100Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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.

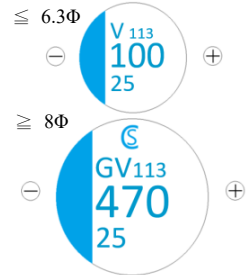
◆ DIMENSIONS (mm)



◆ LEAD

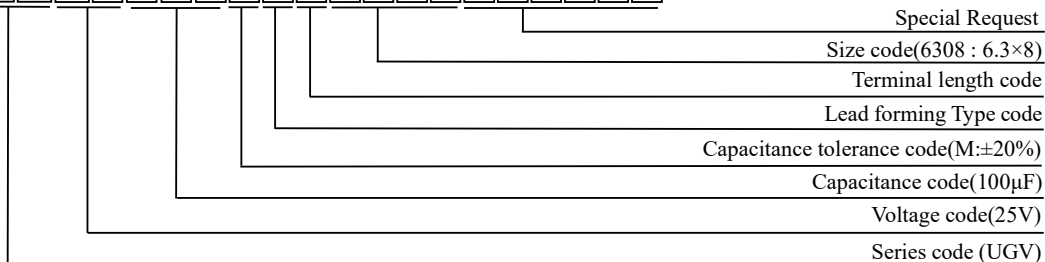
ΦD	6.3	6.3	6.3	8	8	10
Φd	0.45	0.6	0.6	0.6	0.6	0.6
L	5	8	11	8	11~12	7~13
α	1	1	1.5	1	1.5	1.5
F	2.5	2.5	2.5	3.5	3.5	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 25V 100μF)

U G V I E I 0 1 M N N 6 3 0 8



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UGV Series

◆ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
20 (1D)	820	10×12	16	4650	0.12	3280	UGV1D821MNN1012U
	47	6.3×5	30	2600	0.12	300	UGV1E470MNN6305
25 (1E)	56	6.3×5	30	2800	0.12	500	UGV1E560MNN6305
	100	6.3×8	28	2700	0.12	500	UGV1E101MNN6308
	150	6.3×8	18	3200	0.12	750	UGV1E151MNN6308
	180	8×8	18	4100	0.12	900	UGV1E181MNN0808U
	180	8×11	16	4650	0.12	900	UGV1E181MNN0811U
	220	6.3×11	30	2600	0.12	1100	UGV1E221MNN6311
	220	8×8	18	4100	0.12	1100	UGV1E221MNN0808U
	220	8×11	16	4650	0.12	1100	UGV1E221MNN0811U
	220	10×7	25	2800	0.12	1100	UGV1E221MNN1007U
	270	10×12	16	5000	0.12	1350	UGV1E271MNN1012U
	330	8×11	16	4650	0.12	1650	UGV1E331MNN0811U
	330	10×12	14	5000	0.12	1650	UGV1E331MNN1012U
	390	10×12	14	5000	0.12	1950	UGV1E391MNN1012U
	470	8×11	16	4650	0.12	2350	UGV1E471MNN0811U
	470	10×12	14	5000	0.12	2350	UGV1E471MNN1012U
	560	10×12	20	3100	0.12	2800	UGV1E561MNN1012U
680	10×12	18	5000	0.12	3400	UGV1E681MNN1012RU	
680	10×12	16	5000	0.12	1700	UGV1E681MNN1012ELRU	
35 (1V)	18	8×11	34	2100	0.12	300	UGV1V180MNN0811U
	39	8×11	30	2100	0.12	300	UGV1V390MNN0811U
	47	6.3×8	40	2400	0.12	329	UGV1V470MNN6308
	47	8×11	30	2100	0.12	329	UGV1V470MNN0811U
	82	8×11	27	2300	0.12	574	UGV1V820MNN0811U
	100	8×11	27	2300	0.12	700	UGV1V101MNN0811U
	100	10×12	26	2700	0.12	700	UGV1V101MNN1012U
	120	10×12	26	2700	0.12	840	UGV1V121MNN1012U
	150	10×12	26	2700	0.12	1050	UGV1V151MNN1012U
220	10×12	26	2700	0.12	1540	UGV1V221MNN1012U	
50 (1H)	27	8×11	33	2000	0.12	300	UGV1H270MNN0811U
	39	8×11	29	2200	0.12	390	UGV1H390MNN0811U
	47	10×7	45	1900	0.12	470	UGV1H470MNN1007U
	47	10×12	29	2500	0.12	470	UGV1H470MNN1012U
	68	10×12	28	2600	0.12	680	UGV1H680MNN1012U
63 (1J)	22	8×8	45	2100	0.12	300	UGV1J220MNN0808U
	47	10×12	29	2600	0.12	592	UGV1J470MNN1012U
	68	10×12	29	2600	0.12	857	UGV1J680MNN1012U
100 (2A)	18	8×11	40	1850	0.12	360	UGV2A180MNN0811U
	47	10×12	38	2100	0.12	940	UGV2A470MNN1012U

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UGS Series

- Low ESR at a high frequency ranged
- High ripple current capability
- Large capacitance, size 6.3×16~10×20



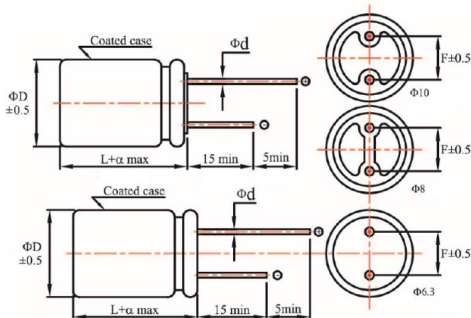
◆ SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-55 ~ +105°C	
Working Voltage Range	10 ~ 35Vdc	
Surge Voltage	Rated Voltage ×1.15	
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 for 2,000 hours at 105°C.	
	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
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
Others	Conforms to JIS-C-5101-26 (2012)	

※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.

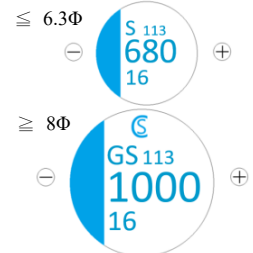
◆ DIMENSIONS (mm)



◆ LEAD

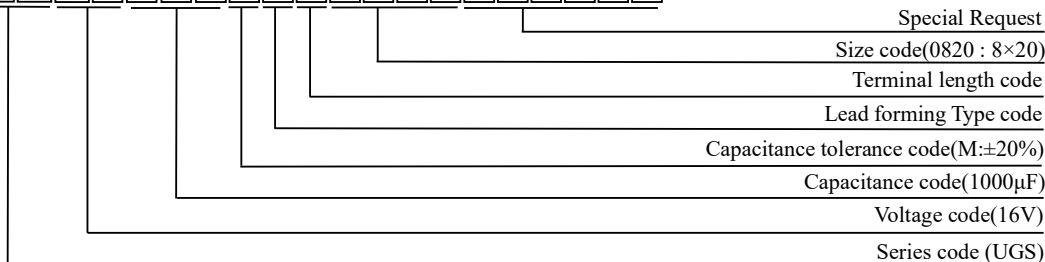
ΦD	6.3	8	10
Φd	0.6	0.6	0.6
L	16	16~20	16~22
α	1.5	1.5	1.5
F	2.5	3.5	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 16V 1000µF)

U G S I C I 0 2 M N N 0 8 2 0 U



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UGS Series

◆ STANDARD RATINGS

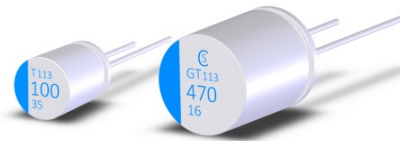
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
10 (1A)	1500	8×20	19	4500	0.12	3000	UGS1A152MNN0820U
16 (1C)	680	6.3×16	16	4000	0.12	1088	UGS1C681MNN6316
	820	8×16	10	5000	0.12	1312	UGS1C821MNN0816U
	1000	8×16	12	4700	0.12	3200	UGS1C102MNN0816U
	1000	8×20	8	6100	0.12	1600	UGS1C102MNN0820U
	1200	8×20	8	6100	0.12	1920	UGS1C122MNN0820U
	1500	8×20	8	6100	0.12	2400	UGS1C152MNN0820U
	1500	10×16	8	6100	0.12	2400	UGS1C152MNN1016U
	1800	10×16	8	6100	0.12	2880	UGS1C182MNN1016U
	1800	10×20	8	6100	0.12	2880	UGS1C182MNN1020U
	2200	10×20	8	6100	0.12	3520	UGS1C222MNN1020U
	2500	10×20	8	6100	0.12	4000	UGS1C252MNN1020U
	2700	10×20	10	5700	0.12	4320	UGS1C272MNN1020U
3000	10×22	10	6100	0.12	4800	UGS1C302MNN1022U	
20 (1D)	820	8×16	16	4650	0.12	3280	UGS1D821MNN0816U
	1000	10×16	16	4650	0.12	4000	UGS1D102MNN1016U
25 (1E)	470	8×16	16	4650	0.12	2350	UGS1E471MNN0816U
	470	8×20	16	4650	0.12	2350	UGS1E471MNN0820U
	680	8×16	16	4650	0.12	3400	UGS1E681MNN0816U
	820	8×20	16	5000	0.12	4100	UGS1E821MNN0820U
	1000	10×16	20	4000	0.12	5000	UGS1E102MNN1016U
22 (1P)	680	8×16	16	4650	0.12	1496	UGS1P681MNN0816U
35 (1V)	330	10×16	28	2600	0.12	2310	UGS1V331MNN1016U

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UGT Series NEW

- Low ESR at a high frequency ranged
- High ripple current capability
- 3,000 hours at 105°C



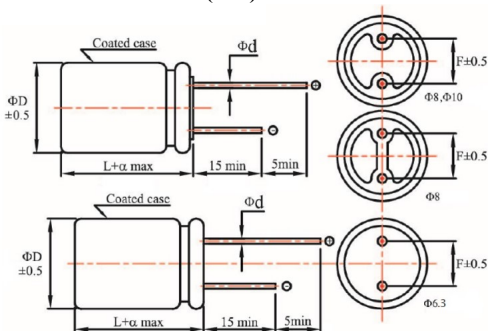
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	6.3 ~ 63Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 3,000 hours at 105°C. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
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. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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.

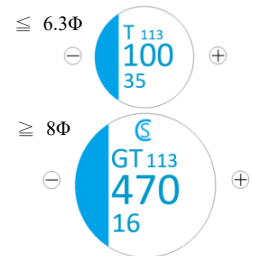
◆ DIMENSIONS (mm)



◆ LEAD

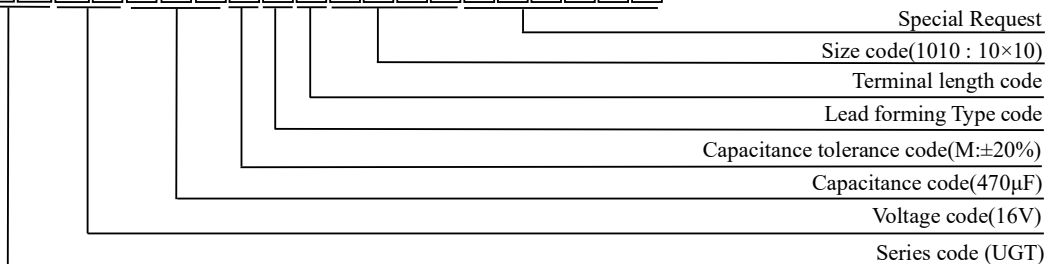
ΦD	6.3	6.3	6.3	8	8	10
Φd	0.45	0.6	0.6	0.6	0.6	0.6
L	5~7	8	12	8	11	10~12
α	1	1	1.5	1	1.5	1.5
F	2.5	2.5	2.5	3.5	3.5	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 16V 470µF)

U G T I C 4 7 I M N N I 0 I 0 U



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UGT Series NEW

◆ STANDARD RATINGS

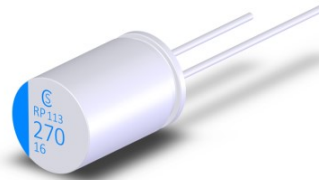
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mA rms/105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
6.3 (0J)	220	6.3×5	15	3160	0.10	300	UGT0J221MNN6305
	560	6.3×7	12	4800	0.10	706	UGT0J561MNN6307
	560	6.3×8	7	3500	0.12	706	UGT0J561MNN6308
	820	6.3×8	8	4700	0.12	1033	UGT0J821MNN6308
	820	8×8	8	4700	0.12	1033	UGT0J821MNN0808U
	1000	8×8	7	5700	0.12	1260	UGT0J102MNN0808U
	1000	8×11	7	6100	0.12	1260	UGT0J102MNN0811U
10 (1A)	1500	8×11	12	5100	0.12	1890	UGT0J152MNN1010U
	470	8×8	25	2500	0.12	940	UGT1A471MNN0808U
16 (1C)	560	10×12	13	5300	0.12	1120	UGT1A561MNN1012U
	820	8×11	10	5400	0.12	1640	UGT1A821MNN0811U
	100	6.3×5	24	2490	0.12	500	UGT1C101MNN6305
	220	6.3×8	15	3800	0.12	704	UGT1C221MNN6308
	220	8×8	26	2100	0.12	704	UGT1C221MNN0808U
	330	8×8	11	4500	0.12	1056	UGT1C331MNN0808U
	390	6.3×12	11	4500	0.12	1248	UGT1C391MNN6312
	470	6.3×12	11	4500	0.10	1504	UGT1C471MNN6312
25 (1E)	470	10×10	10	6100	0.12	1504	UGT1C471MNN1010U
	680	10×12	14	4800	0.12	2176	UGT1C681MNN1012U
	820	10×12	12	5300	0.12	2624	UGT1C821MNN1012U
	1000	10×12	12	5400	0.12	3200	UGT1C102MNN1012U
	150	8×11	26	2400	0.12	750	UGT1E151MNN0811U
	270	10×12	23	3500	0.12	1350	UGT1E271MNN1012U
	470	10×12	22	2520	0.12	2350	UGT1E471MNN1012U
35 (1V)	680	10×12	20	3100	0.12	3400	UGT1E681MNN1012U
	56	8×8	29	1900	0.12	392	UGT1V560MNN0808U
	100	6.3×8	35	2350	0.12	700	UGT1V101MNN6308
50 (1H)	150	10×12	26	2700	0.12	1050	UGT1V151MNN1012U
	39	8×11	29	2200	0.12	360	UGT1H390MNN0811U
63 (1J)	68	10×12	28	2600	0.12	680	UGT1H680MNN1012U
	22	8×11	35	1800	0.12	300	UGT1J220MNN0811U
	27	8×11	33	2100	0.12	540	UGT1J270MNN0811U
	47	10×12	29	2600	0.12	592	UGT1J470MNN1012U
	150	10×12	30	3000	0.12	1890	UGT1J151MNN1012U

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



URP Series

- Low ESR at a high frequency ranged
- High ripple current capability
- 2,000 hours at 105°C



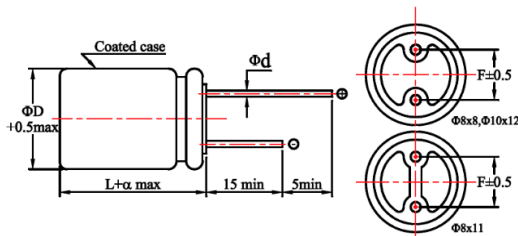
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	2.5 ~ 16Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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

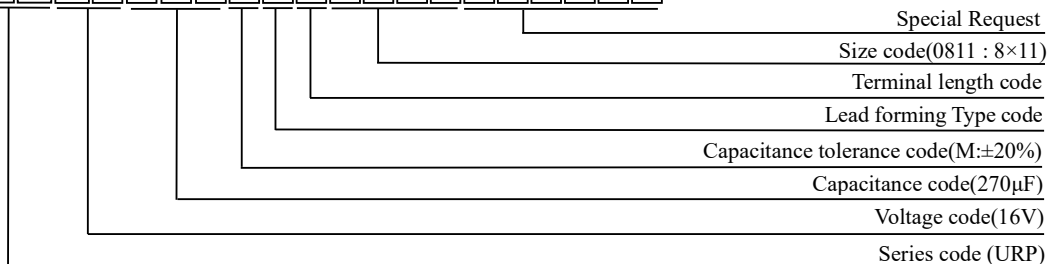
ΦD	8	8	10	10
Φd	0.6	0.6	0.6	0.6
L	8	11	7	12
α	1	1.5	1.5	1.5
F	3.5	3.5	5.0	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 16V 270μF)

U R P 1 C 2 7 1 M N N 0 8 1 1 U



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



URP Series

◆ STANDARD RATINGS

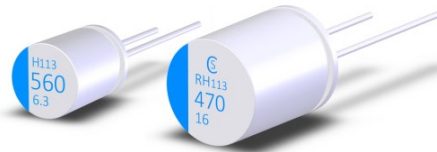
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
2.5 (0E)	680	8×11	12	4520	0.12	340	URP0E681MNN0811U
	820	8×11	12	5440	0.12	410	URP0E821MNN0811U
	1500	10×12	12	5440	0.12	750	URP0E152MNN1012U
	2700	10×12	12	5440	0.12	1350	URP0E272MNN1012U
4.0 (0G)	560	8×11	12	4520	0.12	448	URP0G561MNN0811U
	820	10×12	12	5040	0.12	656	URP0G821MNN1012U
	1200	10×12	12	5040	0.12	960	URP0G122MNN1012U
6.3 (0J)	270	8×8	12	3600	0.12	340	URP0J271MNN0808U
	470	8×8	12	4770	0.12	592	URP0J471MNN0808U
	680	10×12	12	5040	0.12	857	URP0J681MNN1012U
	820	10×12	12	5040	0.12	1033	URP0J821MNN1012U
	1000	10×12	12	5040	0.12	1260	URP0J102MNN1012U
	1200	8×11	12	5040	0.12	1512	URP0J122MNN0811U
	1500	8×11	12	5040	0.12	1890	URP0J152MNN0811U
10 (1A)	1500	10×12	12	5560	0.12	1890	URP0J152MNN1012U
	220	8×8	12	4700	0.12	440	URP1A221MNN0808U
	270	8×11	12	4420	0.12	540	URP1A271MNN0811U
	330	8×8	12	4700	0.12	660	URP1A331MNN0808U
	470	8×8	12	5100	0.12	940	URP1A471MNN0808U
	470	10×12	12	5300	0.12	940	URP1A471MNN1012U
	560	8×11	12	4500	0.12	1260	URP1A561MNN0811U
	560	10×12	12	5300	0.12	1120	URP1A561MNN1012U
	680	8×11	12	4500	0.12	1360	URP1A681MNN0811U
	680	10×12	12	5300	0.12	1360	URP1A681MNN1012U
	820	8×11	12	5000	0.12	1640	URP1A821MNN0811U
	1000	10×12	12	5300	0.12	2000	URP1A102MNN1012U
	1200	10×12	12	5300	0.12	2400	URP1A122MNN1012U
16 (1C)	100	8×11	12	4850	0.12	320	URP1C101MNN0811U
	180	8×8	12	3840	0.12	576	URP1C181MNN0808U
	180	8×11	12	4850	0.12	576	URP1C181MNN0811U
	270	8×8	12	4300	0.12	864	URP1C271MNN0808U
	270	8×11	12	5000	0.12	864	URP1C271MNN0811U
	270	10×7	12	5000	0.12	864	URP1C271MNN1007U
	330	8×8	12	4700	0.12	1056	URP1C331MNN0808U
	330	8×11	12	5000	0.12	1056	URP1C331MNN0811U
	330	10×12	12	5300	0.12	1056	URP1C331MNN1012U
	470	8×8	12	4700	0.12	1504	URP1C471MNN0808U
	470	8×11	12	5300	0.12	1504	URP1C471MNN0811U
	470	10×12	12	5300	0.12	1504	URP1C471MNN1012U
	560	8×11	12	5000	0.12	1792	URP1C561MNN0811U
	560	10×12	12	5300	0.12	1792	URP1C561MNN1012U
	680	8×11	12	5000	0.12	2176	URP1C681MNN0811U
	680	10×12	12	5300	0.12	2176	URP1C681MNN1012U
	820	8×11	12	5000	0.12	1312	URP1C821MNN0811U
	820	10×12	12	5300	0.12	2624	URP1C821MNN1012U
	1000	10×12	12	5400	0.12	3200	URP1C102MNN1012U

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



URH Series

- Low ESR at a high frequency ranged
- High ripple current capability
- 2,000 hours at 125°C



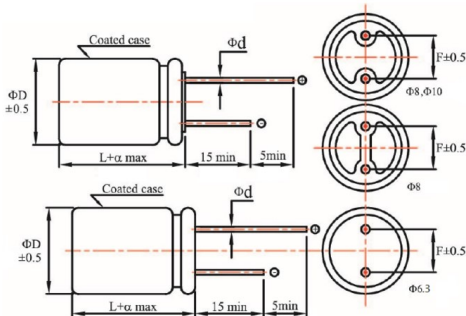
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +125°C								
Working Voltage Range	2.5 ~ 25Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 125°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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.

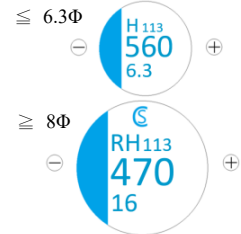
◆ DIMENSIONS (mm)



◆ LEAD

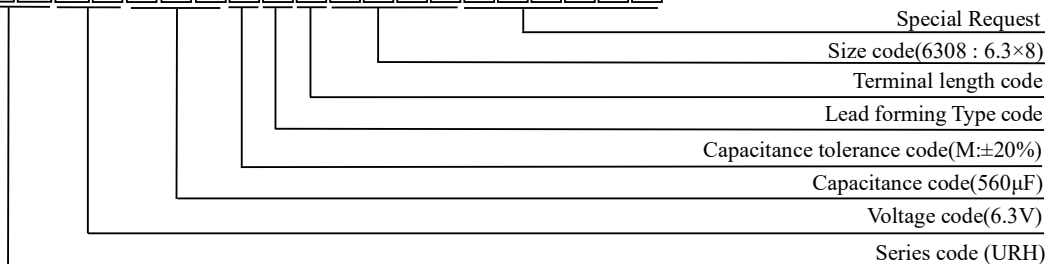
ΦD	6.3	6.3	8	8	10
Φd	0.6	0.6	0.6	0.6	0.6
L	8	11	8	11~20	12~20
α	1	1.5	1	1.5	1.5
F	2.5	2.5	3.5	3.5	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 6.3V 560µF)

U R H 0 J 5 6 1 M N N 6 3 0 8



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



URH Series

◆ STANDARD RATINGS

WV (Vdc)	Cap (μ F)	Case Size (mm) Φ D×L	ESR 100~300KHz (m Ω max)	Rated Ripple current (mArms max)		Tan δ max	Leakage Current (μ A max)	Part Number
				$\leq 105^{\circ}\text{C}$	105~125 $^{\circ}\text{C}$			
2.5 (0E)	680	8×11	13	4520	1430	0.12	340	URH0E681MNN0811U
	820	8×11	13	4520	1430	0.12	410	URH0E821MNN0811U
4.0 (0G)	560	8×11	13	4520	1430	0.12	448	URH0G561MNN0811U
	680	8×11	13	4520	1430	0.12	544	URH0G681MNN0811U
	1200	10×12	12	5440	1720	0.12	960	URH0G122MNN1012U
6.3 (0J)	470	8×11	13	4520	1430	0.12	592	URH0J471MNN0811U
	560	6.3×8	8	4700	1490	0.12	706	URH0J561MNN6308
	560	8×11	13	4520	1430	0.12	706	URH0J561MNN0811U
	820	6.3×8	13	4520	1430	0.12	1033	URH0J821MNN6308
	820	10×12	12	5440	1720	0.12	1033	URH0J821MNN1012U
10 (1A)	120	8×8	35	2560	810	0.12	300	URH1A121MNN0808U
	330	8×11	16	3950	1250	0.12	660	URH1A331MNN0811U
	390	8×11	16	3950	1250	0.12	780	URH1A391MNN0811U
	560	10×12	13	5230	1655	0.12	1120	URH1A561MNN1012U
	1000	10×12	13	5230	1200	0.12	2000	URH1A102MNN1012U
16 (1C)	82	8×8	35	2560	810	0.12	300	URH1C820MNN0808U
	150	8×8	35	2560	810	0.12	480	URH1C151MNN0808U
	180	8×11	18	3640	1150	0.12	576	URH1C181MNN0811U
	220	8×11	18	3640	1150	0.12	704	URH1C221MNN0811U
	270	6.3×11	12	2820	840	0.12	864	URH1C271MNN6311
	270	8×11	18	3640	1150	0.12	864	URH1C271MNN0811U
	270	10×12	16	4720	1490	0.12	864	URH1C271MNN1012U
	330	10×12	16	4720	1490	0.12	1056	URH1C331MNN1012U
	390	10×12	16	4720	1490	0.12	1248	URH1C391MNN1012U
	470	10×12	16	4720	1490	0.12	1504	URH1C471MNN1012U
	820	10×12	12	5400	1630	0.12	2624	URH1C821MNN1012U
	1500	8×20	12	6100	2240	0.12	4800	URH1C152MNN0820U
	2200	10×20	15	6100	2250	0.12	3520	URH1C222MNN1020U
20 (1D)	1500	10×20	16	5000	1700	0.12	6000	URH1D152MNN1020U
25 (1E)	120	8×11	27	2300	890	0.12	600	URH1E121MNN0811U
	180	10×12	25	2800	1080	0.12	900	URH1E181MNN1012U
	470	10×12	14	4720	1490	0.12	2350	URH1E471MNN1012U

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPS Series

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



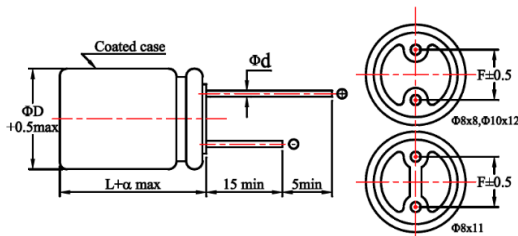
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	2.5 ~ 16Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 105°C. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
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. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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)



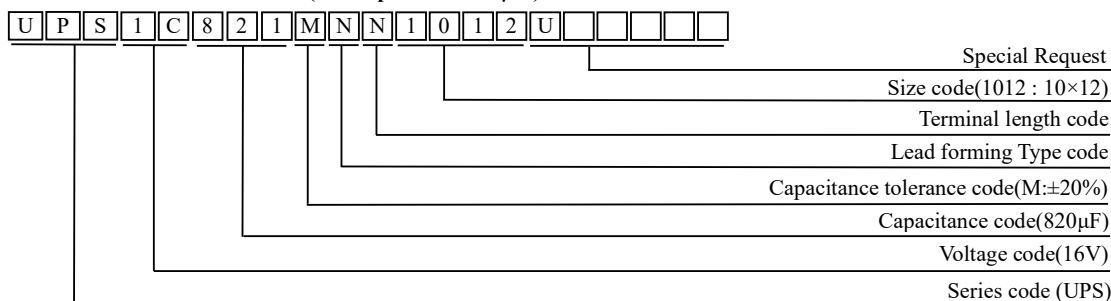
◆ LEAD

ΦD	8	8	10
Φd	0.6	0.6	0.6
L	8	11	12
α	1	1.5	1.5
F	3.5	3.5	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 16V 820μF)



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPS Series

◆ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
2.5 (0E)	560	8×8	7	4700	0.12	350	UPS0E561MNN0808U
	680	8×8	7	5580	0.12	425	UPS0E681MNN0808U
	820	8×8	7	6100	0.12	512	UPS0E821MNN0808U
	820	8×11	7	6100	0.12	410	UPS0E821MNN0811U
	1000	8×8	7	6100	0.12	500	UPS0E102MNN0808U
	1000	8×11	7	6100	0.12	500	UPS0E102MNN0811U
	1200	8×8	7	6100	0.12	600	UPS0E122MNN0808U
	1500	8×11	7	6100	0.12	750	UPS0E152MNN0811U
4 (0G)	1500	10×12	7	6100	0.12	750	UPS0E152MNN1012U
	1800	8×11	7	6100	0.12	900	UPS0E182MNN0811U
	470	8×8	7	5600	0.12	470	UPS0G471MNN0808U
	560	8×8	7	6100	0.12	560	UPS0G561MNN0808U
	680	8×8	7	6100	0.12	544	UPS0G681MNN0808U
	820	10×12	7	6100	0.12	656	UPS0G821MNN1012U
	1200	10×12	7	6100	0.12	960	UPS0G122MNN1012U
	220	8×8	7	3700	0.12	347	UPS0J221MNN0808U
6.3 (0J)	330	8×8	7	3700	0.12	520	UPS0J331MNN0808U
	390	8×8	7	5700	0.12	491	UPS0J391MNN0808U
	470	8×8	7	5700	0.12	740	UPS0J471MNN0808U
	560	8×8	7	5700	0.12	882	UPS0J561MNN0808U
	680	8×8	7	5860	0.12	857	UPS0J681MNN0808U
	820	8×8	9	5700	0.12	1033	UPS0J821MNN0808U
	820	8×11	7	6100	0.12	1033	UPS0J821MNN0811U
	820	10×12	7	6100	0.12	1033	UPS0J821MNN1012U
	1000	10×12	7	6100	0.12	1260	UPS0J102MNN1012U
	1200	8×11	7	5700	0.12	1512	UPS0J122MNN0811U
	1500	10×12	7	6100	0.12	1890	UPS0J152MNN1012U
	2000	10×12	7	7100	0.12	2520	UPS0J202MNN1012U
10 (1A)	270	8×11	7	5600	0.12	540	UPS1A271MNN0811U
	470	10×12	7	6100	0.12	940	UPS1A471MNN1012U
	560	8×11	7	5700	0.12	882	UPS1A561MNN0811U
	560	10×12	7	6100	0.12	1120	UPS1A561MNN1012U
	680	8×11	7	5600	0.12	1360	UPS1A681MNN0811U
	820	8×11	7	5700	0.12	1640	UPS1A821MNN0811U
	820	10×12	7	6100	0.12	1640	UPS1A821MNN1012U
	1000	10×12	7	6100	0.12	2000	UPS1A102MNN1012U
16 (1C)	150	8×11	7	5600	0.12	480	UPS1C151MNN0811U
	180	8×8	7	5600	0.12	576	UPS1C181MNN0808U
	180	8×11	7	5600	0.12	576	UPS1C181MNN0811U
	270	8×11	7	5600	0.12	864	UPS1C271MNN0811U
	330	8×11	7	5600	0.12	1056	UPS1C331MNN0811U
	330	10×12	7	6100	0.12	1056	UPS1C331MNN1012U
	470	8×11	7	5600	0.12	1504	UPS1C471MNN0811U
	470	10×12	7	6100	0.12	1504	UPS1C471MNN1012U
	820	10×12	7	6100	0.12	2000	UPS1C821MNN1012U
	1000	10×12	7	6100	0.12	3200	UPS1C102MNN1012U

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPR Series

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



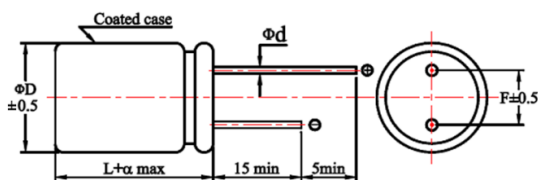
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	2.5 ~ 16Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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

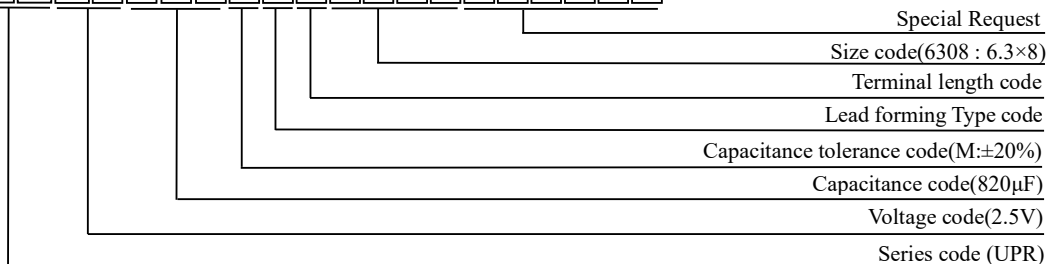
ΦD	5	6.3	6.3
Φd	0.45	0.6	0.6
L	8	8	12
α	1	1	1.5
F	2	2.5	2.5

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 2.5V 820μF)

U P R 0 E 8 2 1 M N N 6 3 0 8



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPR Series

◆ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mA rms/105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number	
2.5 (0E)	220	5×8	8	4340	0.10	500	UPR0E221MNN0508	
	330	5×8	8	4340	0.10	500	UPR0E331MNN0508	
	560	5×8	8	4340	0.10	500	UPR0E561MNN0508	
	560	6.3×8	8	4700	0.10	500	UPR0E561MNN6308	
	680	6.3×8	8	4900	0.10	500	UPR0E681MNN6308	
	820	6.3×8	8	5000	0.10	513	UPR0E821MNN6308	
	820	6.3×8	5	5900	0.10	513	UPR0E821MNN6308E	
4 (0G)	1000	6.3×8	7	5600	0.10	625	UPR0E102MNN6308	
6.3 (0J)	560	6.3×8	8	4700	0.10	560	UPR0G561MNN6308	
	220	5×8	11	3200	0.10	300	UPR0J221MNN0508	
	220	6.3×8	9	3900	0.10	500	UPR0J221MNN6308	
	270	5×8	8	4050	0.10	500	UPR0J271MNN0508	
	330	5×8	8	4050	0.10	500	UPR0J331MNN0508	
	330	6.3×8	8	4700	0.10	500	UPR0J331MNN6308	
	390	6.3×8	8	4700	0.10	530	UPR0J391MNN6308	
	470	6.3×8	8	4700	0.10	592	UPR0J471MNN6308	
	560	5×8	7	4180	0.10	500	UPR0J561MNN0508	
	560	6.3×8	8	4700	0.10	706	UPR0J561MNN6308	
	680	6.3×8	8	4700	0.10	856	UPR0J681MNN6308	
	820	6.3×8	8	4700	0.10	1033	UPR0J821MNN6308	
	10 (1A)	100	5×8	35	2200	0.10	300	UPR1A101MNN0508
		150	6.3×8	24	2820	0.10	480	UPR1A151MNN6308
220		6.3×8	8	4700	0.10	550	UPR1A221MNN6308	
270		6.3×8	8	4700	0.10	540	UPR1A271MNN6308	
330		6.3×8	8	4700	0.10	660	UPR1A331MNN6308	
16 (1C)	100	6.3×8	10	4680	0.10	320	UPR1C101MNN6308	
	220	6.3×8	10	4700	0.12	704	UPR1C221MNN6308	
	270	6.3×8	10	5080	0.10	864	UPR1C271MNN6308	
	330	6.3×8	10	5080	0.10	1056	UPR1C331MNN6308	
	330	6.3×12	10	5000	0.10	1056	UPR1C331MNN6312	
	470	6.3×12	11	5300	0.12	1504	UPR1C471MNN6312	

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UUL Series

- Super low ESR at a high frequency ranged
- Low profile 6.3×6 max, 8×7 max
- 2,000 hours at 105°C



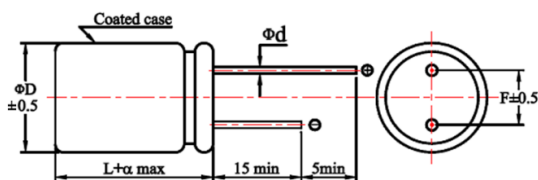
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	2.5 ~ 16Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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.

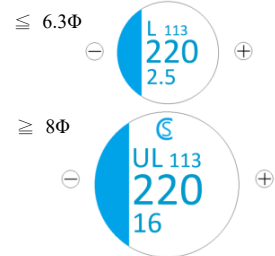
◆ DIMENSIONS (mm)



◆ LEAD

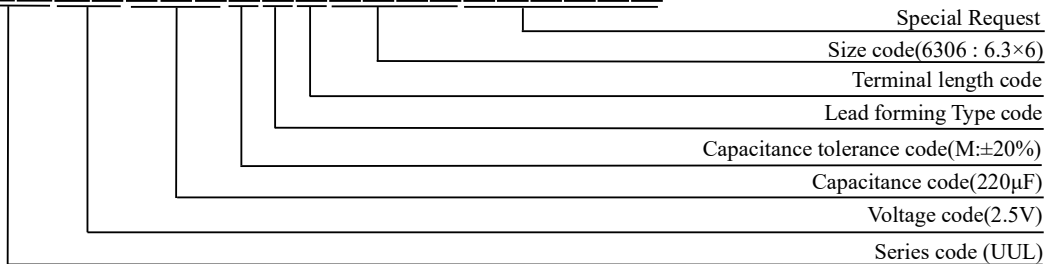
ΦD	6.3	8
Φd	0.45	0.6
L	6	7
α	0	0
F	2.5	3.5

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 2.5V 220μF)

U U L 0 E 2 2 1 M N N 6 3 0 6



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UUL Series

◆ STANDARD RATINGS

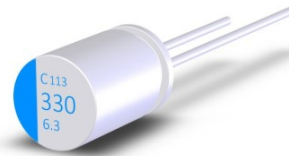
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mA rms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
2.5 (0E)	220	6.3×6	8	3400	0.10	500	UUL0E221MNN6306
	390	6.3×6	8	3900	0.10	500	UUL0E391MNN6306
	560	6.3×6	8	3900	0.10	500	UUL0E561MNN6306
	680	6.3×6	8	4500	0.10	500	UUL0E681MNN6306
6.3 (0J)	220	6.3×6	17	3000	0.10	500	UUL0J221MNN6306
	330	6.3×6	17	3300	0.10	500	UUL0J331MNN6306
16 (1C)	100	6.3×6	24	2490	0.10	500	UUL1C101MNN6306
	150	6.3×6	22	3220	0.10	500	UUL1C151MNN6306
	180	6.3×6	22	3300	0.10	576	UUL1C181MNN6306
	220	8×7	13	4150	0.10	704	UUL1C221MNN0807
	270	8×7	12	4300	0.10	864	UUL1C271MNN0807
	330	8×7	12	4300	0.10	1056	UUL1C331MNN0807
	390	8×7	12	4300	0.10	1248	UUL1C391MNN0807
470	8×7	13	4700	0.10	1504	UUL1C471MNN0807	

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPC Series NEW

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



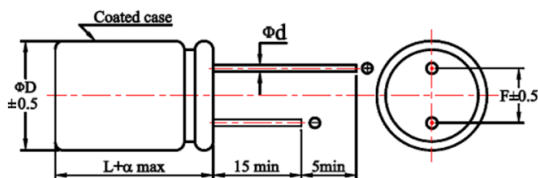
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	6.3 ~ 22Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 2,000 hours at 105°C. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
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. <table border="1" style="margin-left: 20px;"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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

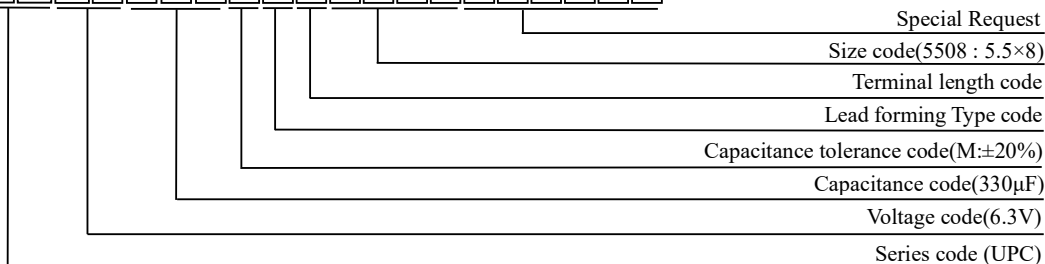
ΦD	5	5.5	6.3	6.3
Φd	0.45	0.45	0.6	0.6
L	8	8~11	8	11~12
α	1	1	1	1.5
F	2.0	2.5	2.5	2.5

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 2.5V 820μF)

U P C 0 J 3 3 1 M N N 5 5 0 8



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPC Series NEW

◆ STANDARD RATINGS

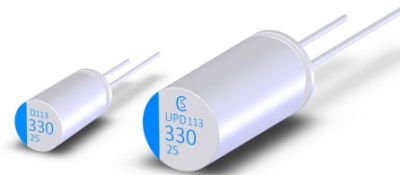
WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
6.3 (0J)	220	5.5×8	12	3600	0.12	300	UPC0J221MNN5508
	330	5.5×8	12	4050	0.12	500	UPC0J331MNN5508
	390	5.5×8	11	3700	0.12	491	UPC0J391MNN5508
	470	5.5×8	12	4200	0.12	592	UPC0J471MNN5508
	560	6.3×8	8	4700	0.12	706	UPC0J561MNN6308
	680	6.3×8	10	4300	0.12	857	UPC0J681MNN6308
	820	6.3×8	8	4700	0.12	1033	UPC0J821MNN6308
	1000	6.3×11	8	5300	0.12	1260	UPC0J102MNN6311
6.8 (6K)	1200	6.3×12	8	5700	0.12	1512	UPC0J122MNN6312
	390	5×8	11	3100	0.12	530	UPC6K391MNN0508
	470	5×8	11	3700	0.12	639	UPC6K471MNN0508
	470	6.3×8	8	4700	0.12	639	UPC6K471MNN6308
	560	6.3×8	8	4700	0.12	761	UPC6K561MNN6308
	680	6.3×8	8	4700	0.12	925	UPC6K681MNN6308
	820	6.3×8	8	4700	0.12	1115	UPC6K821MNN6308
	1000	6.3×12	8	5000	0.12	1360	UPC6K102MNN6312
7.5 (7H)	390	5.5×8	11	3100	0.12	175	UPC7H391MNN5508
	470	5.5×8	10	3700	0.12	705	UPC7H471MNN5508
	500	5.5×9	10	3100	0.12	750	UPC7H501MNN5509
	560	6.3×8	8	4700	0.12	840	UPC7H561MNN6308
12 (1B)	330	6.3×8	8	4700	0.12	792	UPC1B331MNN6308
	470	6.3×11	8	4700	0.12	1128	UPC1B471MNN6311
	560	6.3×11	12	4700	0.12	1344	UPC1B561MNN6311
	820	6.3×12	14	3300	0.12	1968	UPC1B821MNN6312
16 (1C)	180	5.5×10	20	3100	0.12	576	UPC1C181MNN5510
	220	5.5×10	20	3100	0.12	704	UPC1C221MNN5510
	270	5.5×10	20	3100	0.12	864	UPC1C271MNN5510
	330	5.5×11	20	2900	0.12	1056	UPC1C331MNN5511
	330	6.3×11	15	3800	0.12	1056	UPC1C331MNN6311
20 (1D)	150	5.5×8	28	2700	0.12	600	UPC1D151MNN5508
	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
22 (1P)	330	6.3×12	18	3800	0.12	1452	UPC1P331MNN6312

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPD Series NEW

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



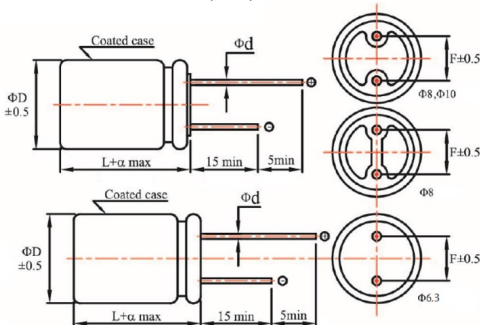
◆ SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-40 ~ +105°C	
Working Voltage Range	25 ~ 63Vdc	
Surge Voltage	Rated Voltage × 1.15	
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(-40°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 for 2,000 hours at 105°C.	
	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
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
Others	Conforms to JIS-C-5101-26 (2012)	

※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.

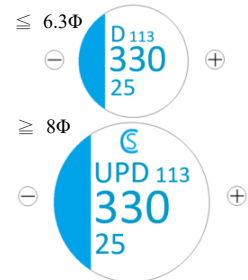
◆ DIMENSIONS (mm)



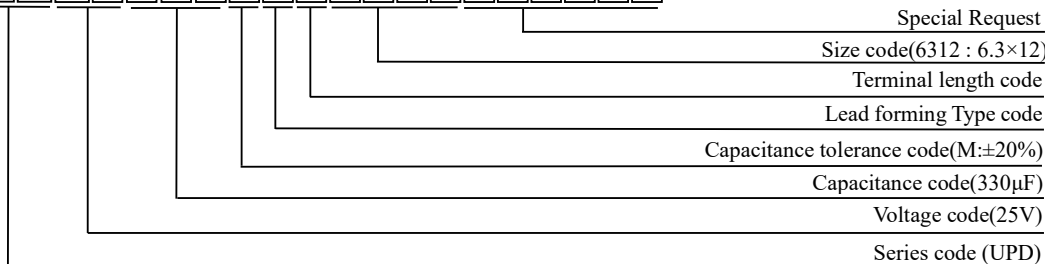
◆ LEAD

ΦD	6.3	6.3	8	8	10
Φd	0.6	0.6	0.6	0.6	0.6
L	8	12~16	8	11~16	12
α	1	1.5	1	1.5	1.5
F	2.5	2.5	3.5	3.5	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 25V 330μF)



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPD Series **NEW**

◆ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
25 (1E)	330	6.3×12	30	2600	0.12	1650	UPD1E331MNN6312
	470	6.3×16	20	3800	0.12	2350	UPD1E471MNN6316
	330	8×8	16	4650	0.12	1650	UPD1E331MNN0808U
	560	6.3×16	20	4200	0.12	2800	UPD1E561MNN6316
	560	8×11	16	4650	0.12	2800	UPD1E561MNN0811U
	820	8×16	12	4650	0.12	4100	UPD1E821MNN0816U
35 (1V)	270	8×11	44	2520	0.12	1890	UPD1V271MNN0811U
	390	8×16	24	3100	0.12	2730	UPD1V391MNN0816U
63 (1J)	82	10×12	25	2700	0.12	857	UPD1J820MNN1012U
	100	10×12	25	2900	0.12	1260	UPD1J101MNN1012U

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPE Series

- Super low ESR at a high frequency ranged
- High ripple current capability
- 5,000 hours at 105°C



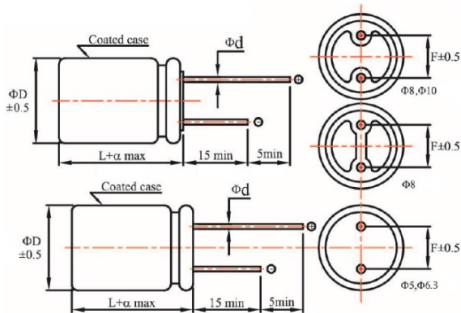
◆ SPECIFICATIONS

Item	Performance Characteristics								
Category Temperature Range	-55 ~ +105°C								
Working Voltage Range	2.5 ~ 50Vdc								
Surge Voltage	Rated Voltage × 1.15								
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 for 5,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
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. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>ESR</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 150% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	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
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								
Others	Conforms to JIS-C-5101-26 (2012)								

※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.

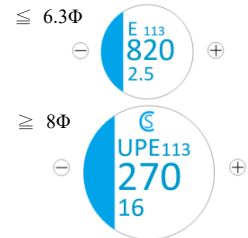
◆ DIMENSIONS (mm)



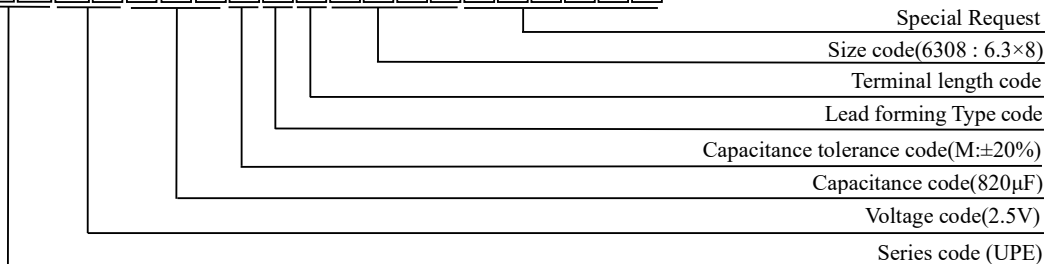
◆ LEAD

ΦD	5	6.3	6.3	8	8	10
Φd	0.45	0.45	0.6	0.6	0.6	0.6
L	8	5~6	8	6~8	11~12	12
α	1	1	1	1	1.5	1.5
F	2.0	2.5	2.5	3.5	3.5	5.0

◆ MARKING



◆ PART NUMBER SYSTEM (Example : 2.5V 820μF)



CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS



UPE Series

◆ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	ESR 100~300KHz (mΩmax)	Rated Ripple current (mArms/ 105°C, 100KHz)	Tanδ max	Leakage Current (μA max)	Part Number
2.5 (0E)	390	6.3×5	10	3900	0.10	500	UPE0E391MNN6305
	560	5×8	7	4200	0.10	500	UPE0E561MNN0508
	560	6.3×8	7	5000	0.10	500	UPE0E561MNN6308
	560	8×8	8	4700	0.10	500	UPE0E561MNN0808U
	820	6.3×8	7	5000	0.10	500	UPE0E821MNN6308
	820	8×8	7	6100	0.10	500	UPE0E821MNN0808U
	1000	8×8	7	6100	0.10	900	UPE0E102MNN0808U
3.0 (0F)	820	6.3×8	7	5600	0.10	500	UPE0F821MNN6308
4.0 (0G)	560	6.3×8	7	5000	0.10	500	UPE0G561MNN6308
	560	8×8	7	6100	0.10	500	UPE0G561MNN0808U
6.3 (0J)	100	6.3×5	45	1700	0.10	300	UPE0J101MNN6305
	100	6.3×8	35	2100	0.10	500	UPE0J101MNN6308
	330	5×8	8	4050	0.10	500	UPE0J331MNN0508
	470	6.3×8	8	4700	0.10	592	UPE0J471MNN6308
	560	6.3×8	8	4700	0.10	706	UPE0J561MNN6308
	560	8×8	7	6100	0.10	706	UPE0J561MNN0808U
	820	6.3×8	8	4700	0.10	1033	UPE0J821MNN6308
	820	8×8	8	6100	0.10	1033	UPE0J821MNN0808U
	1500	8×11	9	5650	0.10	1890	UPE0J152MNN0811U
16 (1C)	100	6.3×5	24	2490	0.10	500	UPE1C101MNN6305
	100	6.3×8	24	2490	0.10	500	UPE1C101MNN6308
	180	6.3×5	22	3300	0.10	576	UPE1C181MNN6305
	180	8×8	10	5000	0.10	576	UPE1C181MNN0808U
	180	8×11	16	4360	0.10	576	UPE1C181MNN0811U
	220	8×6	13	4150	0.10	500	UPE1C221MNN0806
	270	6.3×8	15	3800	0.10	864	UPE1C271MNN6308
	270	6.3×8	10	5080	0.10	864	UPE1C271MNN6308E
	270	8×6	22	3300	0.10	864	UPE1C271MNN0806
	270	8×8	10	5000	0.10	864	UPE1C271MNN0808U
	270	8×11	11	5000	0.10	864	UPE1C271MNN0811U
	330	8×8	11	4700	0.10	1056	UPE1C331MNN0808U
	470	8×8	16	4000	0.10	1504	UPE1C471MNN0808U
	470	8×11	11	5400	0.10	1504	UPE1C471MNN0811U
	470	10×12	10	6100	0.10	1504	UPE1C471MNN1012U
	560	8×11	14	4970	0.10	1792	UPE1C561MNN0811U
	820	10×12	12	5400	0.10	2624	UPE1C821MNN1012U
1000	10×12	12	5400	0.10	3200	UPE1C102MNN1012U	
20 (1D)	180	6.3×8	18	3460	0.10	720	UPE1D181MNN6308
	390	8×11	14	4970	0.10	1560	UPE1D391MNN0811U
	470	8×11	14	4970	0.10	1880	UPE1D471KNN0811U
	560	10×12	12	5400	0.10	2240	UPE1D561MNN1012U
	680	10×12	12	5400	0.10	2720	UPE1D681MNN1012U
25 (1E)	56	6.3×5	30	2800	0.10	300	UPE1E560MNN6305
	82	6.3×8	30	2800	0.10	500	UPE1E820MNN6308
	82	8×8	28	3000	0.10	410	UPE1E820MNN0808U
	180	8×8	18	4100	0.10	900	UPE1E181MNN0808U
	180	8×11	16	4650	0.10	900	UPE1E181MNN0811U
	220	8×11	16	4650	0.10	1100	UPE1E221MNN0811U
	330	10×12	14	5000	0.10	1650	UPE1E331MNN1012U
	390	10×12	14	5000	0.10	1950	UPE1E391MNN1012U
	820	10×12	20	3400	0.10	4100	UPE1E821MNN1012U
35 (1V)	22	6.3×5	35	2600	0.10	300	UPE1V220MNN6305
	33	8×8	30	2800	0.10	300	UPE1V330MNN0808U
	47	6.3×8	45	2000	0.10	329	UPE1V470MNN6308
	82	8×11	20	4000	0.10	574	UPE1V820MNN0811U
	120	10×12	18	4400	0.10	840	UPE1V121MNN1012U
50 (1H)	39	8×11	25	2400	0.10	390	UPE1H390MNN0811U