

## ED Series

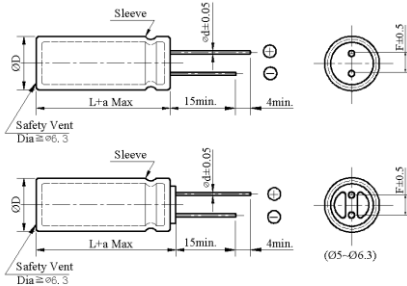
- Suitable for use in high ripple current capability
- Miniaturized, Low E.S.R and low impedance



### SPECIFICATIONS

Item	Performance Characteristics																		
Category Temperature Range	-40 ~ +105°C																		
Working Voltage Range	6.3 ~ 100Vdc																		
Capacitance Range	10 ~ 10,000 µF																		
Capacitance Tolerance	±20% (at 25°C and 120Hz)																		
Dissipation Factor (tanδ) (at 25°C, 120Hz)	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>tanδ(Max)</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> </tr> </table>	Rated Voltage (V)	6.3	10	16	25	35	50	63	100	tanδ(Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
	Rated Voltage (V)	6.3	10	16	25	35	50	63	100										
tanδ(Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08											
The above values should be increased by 0.02 for every additional 1000µF																			
Leakage Current	I=0.01CV or 3µA whichever is greater I : Leakage current (µA) C : Rated capacitance (µF) V : Rated voltage (V) Impress the rated voltage for 2 minutes																		
Low Temperature Characteristics Impedance Ratio(MAX)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>Z(-40°C)/Z(+20°C)</td> <td>8</td> <td>6</td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table> <p style="text-align: right;">(at 120Hz)</p>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	Z(-40°C)/Z(+20°C)	8	6	6	5	4	3	3	3
Rated voltage (V)	6.3	10	16	25	35	50	63	100											
Z(-40°C)/Z(+20°C)	8	6	6	5	4	3	3	3											
Endurance	<p>The following specifications shall be satisfied when the capacitors are restored to 25 °C after subjected to DC voltage with the rated ripple current is applied for 2,000~5,000 hours at 105 °C</p> <table border="1"> <tr> <td>Capacitance change</td> <td>≡ ±25% of the initial value</td> <td>Size</td> <td>Life time (hours)</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≡ 200% of the specified value</td> <td>D×L ~ 8×12</td> <td>2,000</td> </tr> <tr> <td>Leakage current</td> <td>≡ specified value</td> <td>8×16 ~ 10Φ</td> <td>3,000</td> </tr> <tr> <td></td> <td></td> <td>12.5Φ ~ 18Φ</td> <td>5,000</td> </tr> </table>	Capacitance change	≡ ±25% of the initial value	Size	Life time (hours)	Dissipation factor(tanδ)	≡ 200% of the specified value	D×L ~ 8×12	2,000	Leakage current	≡ specified value	8×16 ~ 10Φ	3,000			12.5Φ ~ 18Φ	5,000		
Capacitance change	≡ ±25% of the initial value	Size	Life time (hours)																
Dissipation factor(tanδ)	≡ 200% of the specified value	D×L ~ 8×12	2,000																
Leakage current	≡ specified value	8×16 ~ 10Φ	3,000																
		12.5Φ ~ 18Φ	5,000																
Shelf Life	<p>The following requirements shall be satisfied when the capacitor are restored to 25 °C after exposing them for 500 hours at 105 °C without voltage applied.</p> <table border="1"> <tr> <td>Capacitance change</td> <td>≡ ±25% of the initial value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≡ 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≡ 200% of the specified value</td> </tr> </table>	Capacitance change	≡ ±25% of the initial value	Dissipation factor(tanδ)	≡ 200% of the specified value	Leakage current	≡ 200% of the specified value												
Capacitance change	≡ ±25% of the initial value																		
Dissipation factor(tanδ)	≡ 200% of the specified value																		
Leakage current	≡ 200% of the specified value																		
Others	Conforms to JIS-C-5101-4 (1998), characteristic W																		

### DIMENSIONS (mm)



ΦD	5	6.3	8	10	12.5	16	18
ΦD	ΦD + 0.5 Max						
Φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
a	L + 1.5 Max				≤ 35 L+1.5Max ≥ 40 L+2.0 Max	L + 1.5 Max	

### PART NUMBER SYSTEM ( Example : 25V 4700 µF )

ED I E 4 7 2 M N N 1 6 4 0

Special Request

Size code(1640 : 16×40)

Lead length code

Lead forming Type code

Capacitance tolerance code(M: ± 20%)

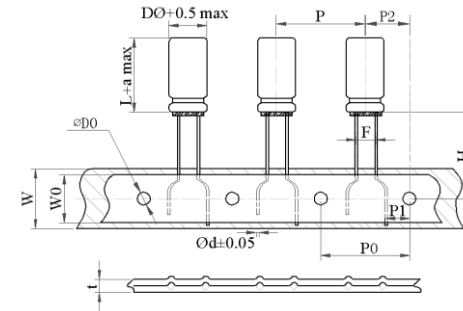
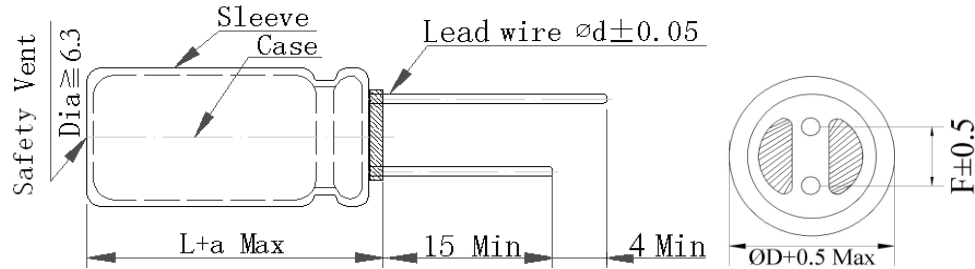
Capacitance code (4700µF)

Voltage code (25V)

Series code (ED)

## Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	ED	NO.:	PUBLISH DATE	2022-03-25
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Unit(mm):

P=12.7±1.0	P0=12.7±0.2
W=18.0±0.5	W0=12.5MIN
P1=3.85±0.5	ΦD0=4.0±0.2
P2=6.35±1.0	F=2.0+0.8/-0.2
H=18.5±0.5	t=0.7±0.2

**Original**

**FIG-1**

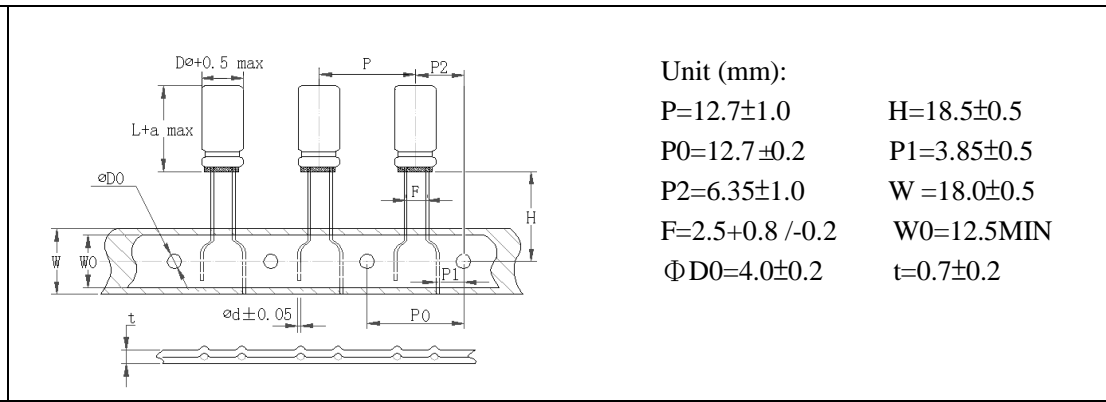
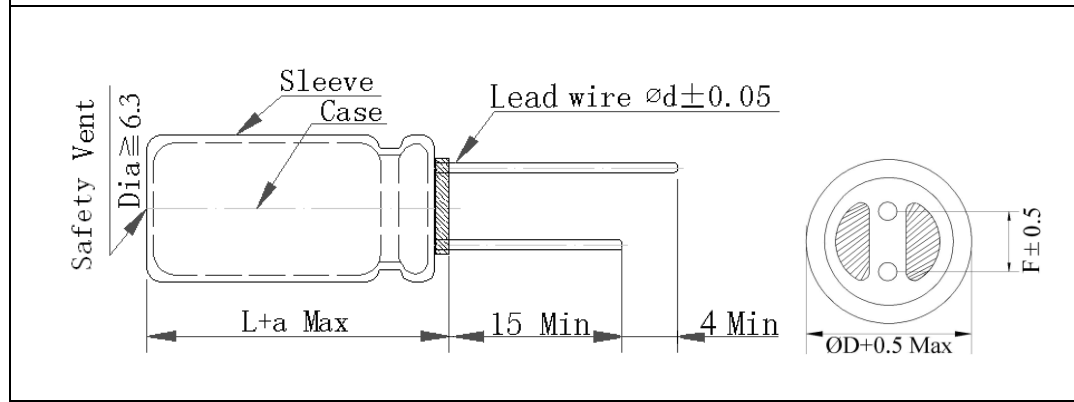
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														DΦ	L	a	d	F	
1	ED1V220MPZ0511EU	/	22 μF	±20%	35 V	/	-40~+105	/	/	160	/	750	2000	5	11	/	/	2.0	FIG-1
2	ED1H100MNN0511EU	/	10 μF	±20%	50 V	/	-40~+105	/	/	105	/	1450	2000	5	11	/	/	2.0	Original

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
1. Sleeve Color: Brown. 2. Suffix U indicates convex rubber cover.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	ED	NO.:	PUBLISH DATE	2022-03-25
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**Original** **FIG-1**

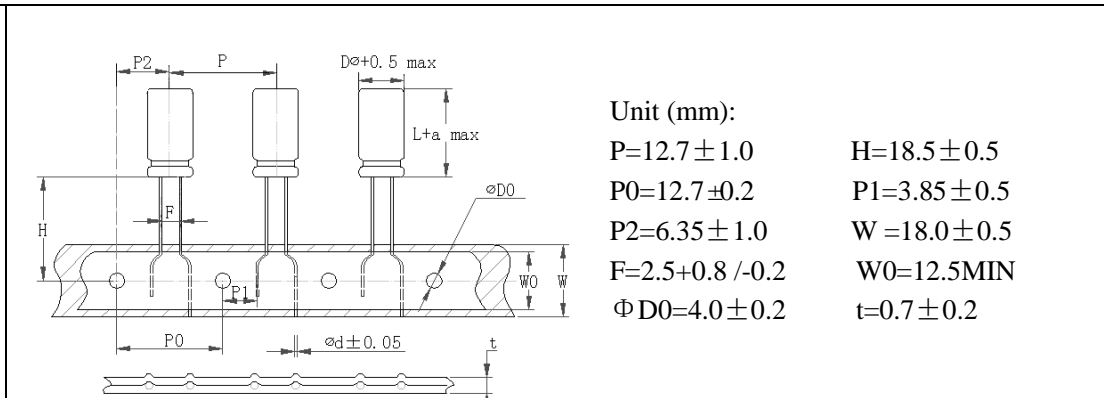
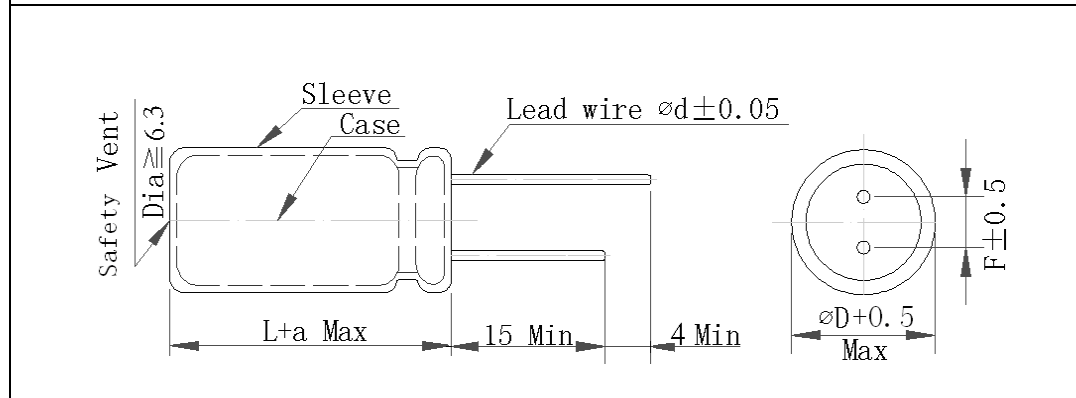
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														DΦ	L	a	d	F	
1	ED1A471MP26311EU	/	470 μF	±20%	10 V	/	-40~+105	/	/	674	/	200	2000	6.3	11	/	/	2.5	FIG-1
2	ED1C221MP26311U	/	220 μF	±20%	16 V	/	-40~+105	/	/	410	450	200	2000	6.3	11	/	/	2.5	FIG-1
3	ED1E101MP26311U	/	100 μF	±20%	25 V	/	-40~+105	/	/	370	1860	220	2000	6.3	11	/	/	2.5	FIG-1
4	ED1E221MP26311U	/	220 μF	±20%	25 V	/	-40~+105	/	/	500	/	120	2000	6.3	11	/	/	2.5	FIG-1
5	ED1V101MP26311U	/	100 μF	±20%	35 V	/	-40~+105	/	/	385	1590	220	2000	6.3	11	/	/	2.5	FIG-1
6	ED1V101MP26311UH	/	100 μF	±20%	35 V	/	-40~+105	/	/	385	1590	220	2000	6.3	11	/	/	2.5	FIG-1
7	ED1H470MNN6311U	/	47 μF	±20%	50 V	/	-40~+105	/	/	220	/	650	2000	6.3	11	/	/	2.5	Original
8	ED1H560MNN6311ERU	/	56 μF	±20%	50 V	/	-40~+105	/	/	385	/	300	2000	6.3	11	/	/	2.5	Original

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

<b>REMARKS:</b>	<b>APPROVED BY</b>	<b>CHECKED BY</b>	<b>PREPARED BY</b>
1. Sleeve Color: Brown. 2. Suffix U indicates convex rubber cover.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	ED	NO.:	PUBLISH DATE	2022-03-25
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Original

FIG-1

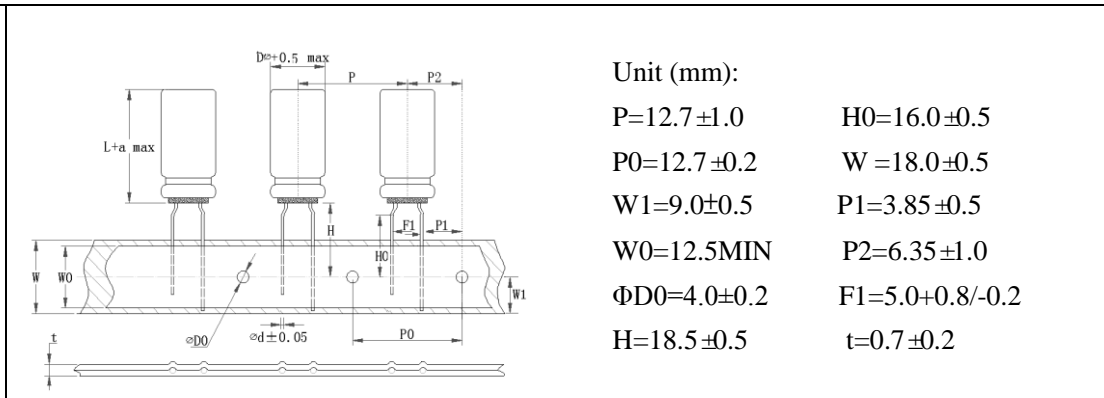
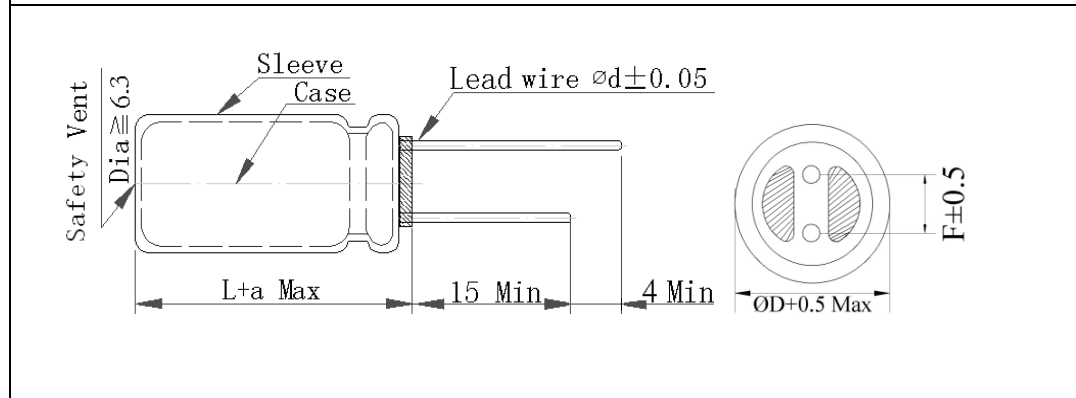
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														D Φ	L	a	d	F	
1	ED1H101MP26315E	/	100 μF	±20%	50 V	/	-40~+105	/	/	560	/	400	2000	6.3	15	/	/	2.5	FIG-1

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
Sleeve Color: Brown.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

<b>Customer</b>	<b>Digi-Key</b>	<b>SERIES</b>	<b>ED</b>	<b>NO.:</b>	<b>PUBLISH DATE</b>	<b>2022-03-25</b>
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**Original** **FIG-1**

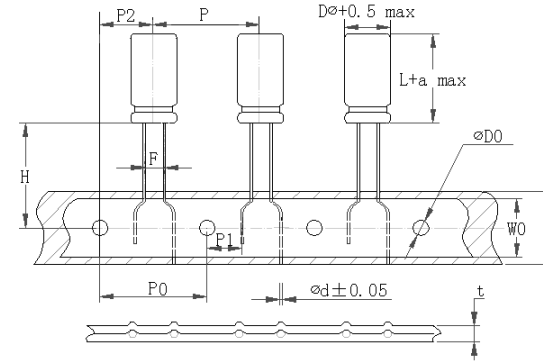
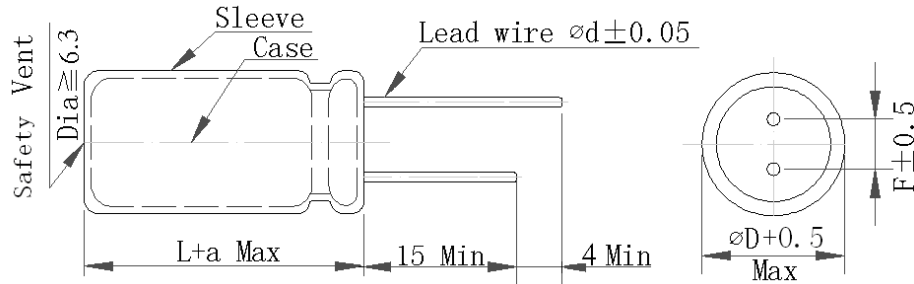
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														D Φ	L	a	d	F1	
1	ED1A221MP56311EU	/	220 μF	±20%	10 V	/	-40~+105	/	/	340	/	220	2000	6.3	11	/	/	5.0	FIG-1

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
1. Sleeve Color: Brown. 2. Suffix U indicates convex rubber cover.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	ED	NO.:	PUBLISH DATE	2022-03-25
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Unit (mm):

P=12.7±1.0	H=18.5±0.5
P0=12.7±0.2	P1=3.85±0.5
P2=6.35±1.0	W=18.0±0.5
F=3.5+0.8/-0.2	W0=12.5MIN
ΦD0=4.0±0.2	t=0.7±0.2

**Original**

**FIG-1**

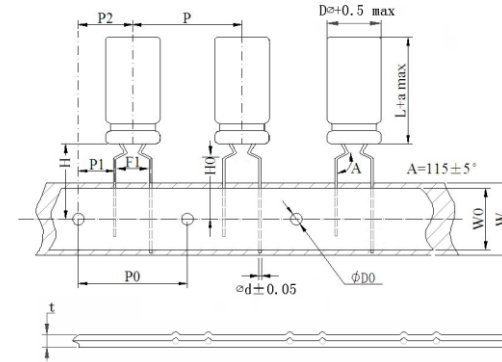
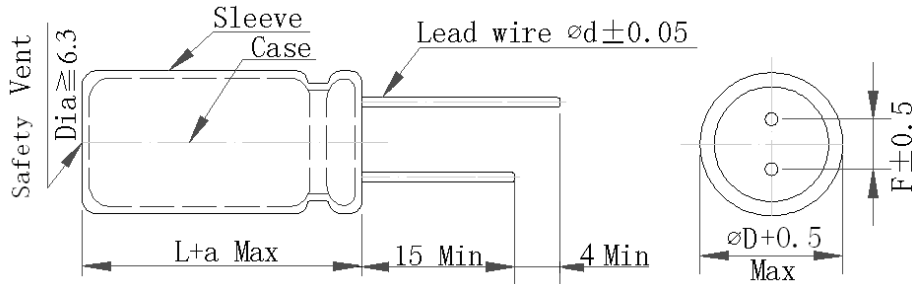
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														DΦ	L	a	d	F	
1	ED1C102MNN0820	/	1000 μF	±20%	16 V	/	-40~+105	/	/	1300	/	50	3000	8	20	/	/	3.5	Original
2	ED1C681MNN0820	/	680 μF	±20%	16 V	/	-40~+105	/	/	1050	/	69	2000	8	20	/	/	3.5	Original
3	ED1E221MNN0812	/	220 μF	±20%	25 V	/	-40~+105	/	/	640	/	150	2000	8	12	/	/	3.5	FIG-1
4	ED1C471MP308B5E	/	470 μF	±20%	16 V	/	-40~+105	/	/	1140	/	36	3000	8	11.5	/	/	3.5	FIG-1
5	ED1A102MP30816	/	1000 μF	±20%	10 V	/	-40~+105	/	/	920	/	85	3000	8	16	/	/	3.5	FIG-1
6	ED1E331MP30816	/	330 μF	±20%	25 V	/	-40~+105	/	/	840	/	86	3000	8	16	/	/	3.5	FIG-1

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
Sleeve Color: Brown.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

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Unit(mm):

P=12.7±1.0	H0=16.0±0.5
P0=12.7±0.2	W =18.0±0.5
P1=3.85±0.5	W0=12.5MIN
P2=6.35±1.0	ΦD0=4.0±0.2
F1=5.0+0.8/-0.2	H =18.5±0.5
t=0.7±0.2	

**Original**

**FIG-1**

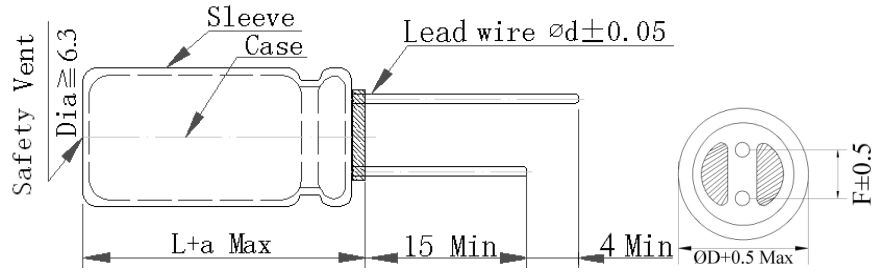
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														D Φ	L	a	d	F1	
1	ED1V221MP50812E	/	220 μF	±20%	35 V	/	-40~+105	/	/	750	/	87	2000	8	12	/	/	5	FIG-1
2	ED1E471MP50816E	/	470 μF	±20%	25 V	/	-40~+105	/	/	1000	/	69	3000	8	16	/	/	5	FIG-1

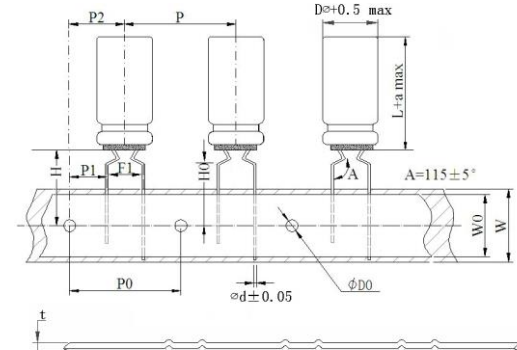
※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
Sleeve Color: Brown.			

## Aluminum Electrolytic Capacitor

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Unit(mm):

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P2=6.35±1.0	ΦD0=4.0±0.2
F1=5.0+0.8/-0.2	H=18.5±0.5
t=0.7±0.2	

**Original** **FIG-1**

No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														DΦ	L	a	d	F	
1	ED2A330MP508B5F4RU	/	33 μF	±20%	100 V	/	-40~+105	/	/	724	/	520	4000	8	11.5	/	/	5	FIG-1

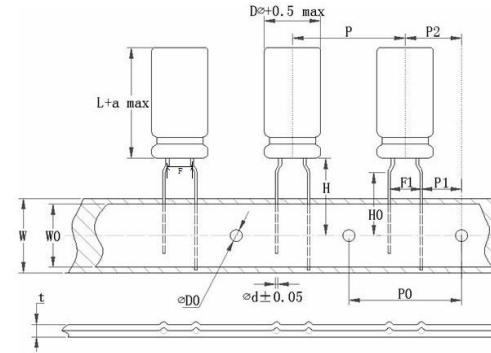
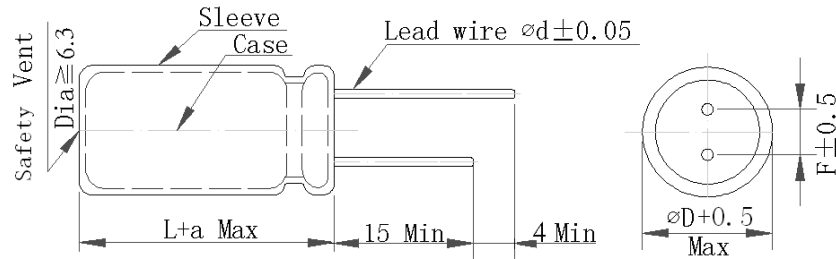
※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
1.Sleeve Color: Brown. 2.Suffix U indicates convex rubber cover. 3.Suffix F4 indicates the life of the capacitor is 4000 hrs.	张洪斌	曾爱娥	梁慧妍



## Aluminum Electrolytic Capacitor

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Unit(mm):

P=12.7±1.0	H0=16.0±0.5
P0=12.7±0.2	W =18.0±0.5
P1=3.85±0.5	W0=12.5MIN
P2=6.35±1.0	ΦD0=4.0±0.2
F1=5.0+0.8/-0.2	t=0.7±0.2
H=17.5±0.75	F=3.5±0.5

**Original**

**FIG-1**

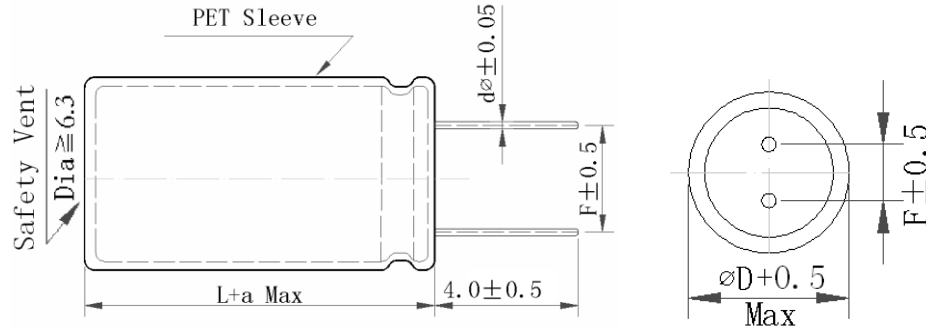
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														D Φ	L	a	d	F1	
1	ED1E471MPS0816	/	470 μF	±20%	25 V	/	-40~+105	/	/	1600	/	56	3000	8	16	/	/	5	FIG-1

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

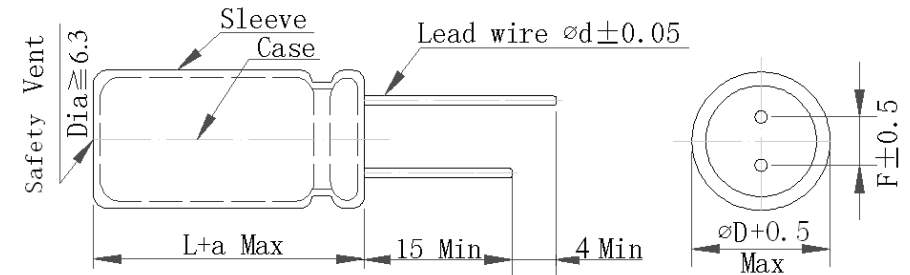
REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
Sleeve Color: Brown.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

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**FIG-1**



**FIG-2**

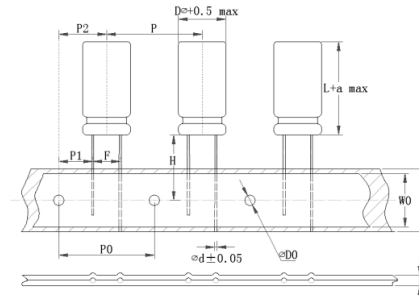
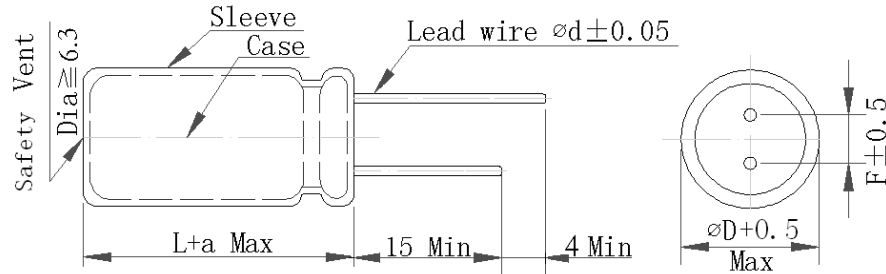
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	Impedance @ 20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
													DΦ	L	a	d	F	
1	ED1A102MCD1012	/	1000 μF	±20%	10 V	/	-40~+105	/	/	1100	40	3000	10	12	/	/	5.0	FIG-1
2	ED1A222MNN1025	/	2200 μF	±20%	10 V	/	-40~+105	/	/	1725	30	3000	10	25	/	/	5.0	FIG-2
3	ED1C222MNN1025	/	2200 μF	±20%	16 V	/	-40~+105	/	/	2200	52	3000	10	25	/	/	5.0	FIG-2
4	ED1V471MNN1020	/	470 μF	±20%	35 V	/	-40~+105	/	/	1400	40	3000	10	20	/	/	5.0	FIG-2

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
Sleeve Color: Brown.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	ED	NO.:	PUBLISH DATE	2022-03-25
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Unit (mm)

P=12.7±1.0	H=18.5±0.5
P0=12.7±0.2	W=18.0±0.5
P1=3.85±0.5	W0=12.5MIN
P2=6.35±1.0	ΦD0=4.0+0.2
F=5.0+0.8/-0.2	t=0.7±0.2

Original

FIG-1

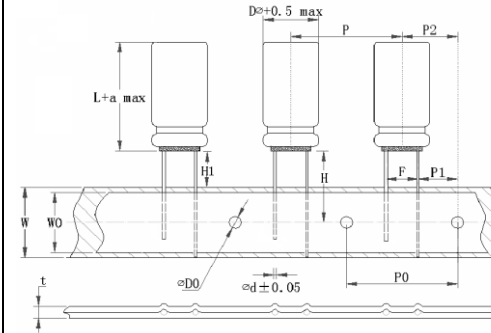
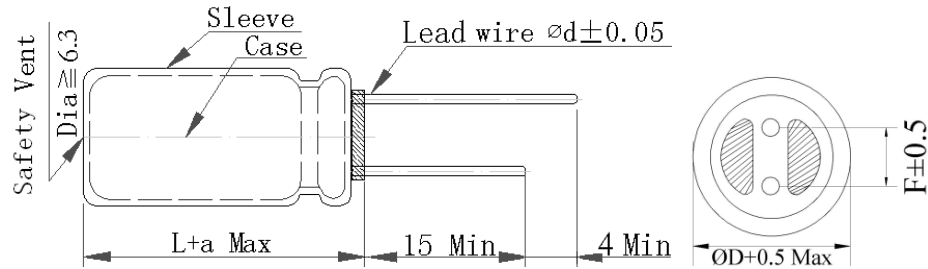
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														DΦ	L	a	d	F	
1	ED1C222MP51025P9	/	2200 μF	±20%	16 V	/	-40~+105	/	/	2200	/	30	3000	10	25	/	/	5.0	FIG-1
2	ED1C332MP51030	/	3300 μF	±20%	16 V	/	-40~+105	/	/	2595	45	20	3000	10	30	/	/	5.0	FIG-1
3	ED1J221MP51016	/	220 μF	±20%	63 V	/	-40~+105	/	/	390	/	200	3000	10	16	/	/	5.0	FIG-1
4	ED1J470MP51013E	/	47 μF	±20%	63 V	/	-40~+105	/	/	650	/	280	3000	10	13	/	/	5.0	FIG-1
5	ED1K181MP51020	/	180 μF	±20%	80 V	/	-40~+105	/	/	450	/	200	3000	10	20	/	/	5.0	FIG-1
6	ED1V471MP51016	/	470 μF	±20%	35 V	/	-40~+105	/	/	1350	/	50	3000	10	16	/	/	5.0	FIG-1
7	ED1V471MP51020E	/	470 μF	±20%	35 V	/	-40~+105	/	/	1400	/	39	3000	10	20	/	/	5.0	FIG-1

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
1. Sleeve Color: Brown. 2. Suffix P9 : indicates Black PET sleeve.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	ED	NO.:	PUBLISH DATE	2022-03-25
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Unit (mm):

P=12.7±1.0	H=18.5±0.5
P0=12.7±0.2	W=18.0±0.5
P1=3.85±0.5	W0=12.5MIN
P2=6.35±1.0	ΦD0=4.0+0.2
F=5.0+0.8/-0.2	t=0.7±0.2
H1=9.5±1.0	

### Original

### FIG-1

No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
													DΦ	L	a	d	F	
1	ED1A222MP51020U	/	2200 μF	±20%	10 V	/	-40~+105	/	/	1300	45	3000	10	20	/	/	5.0	FIG-1

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

### REMARKS:

- Sleeve Color: Brown.
- Suffix U indicates convex rubber cover.

### APPROVED BY

张洪斌

### CHECKED BY

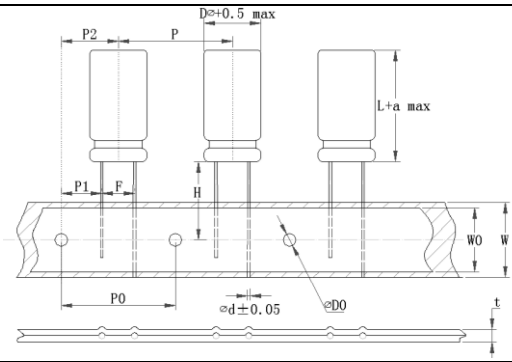
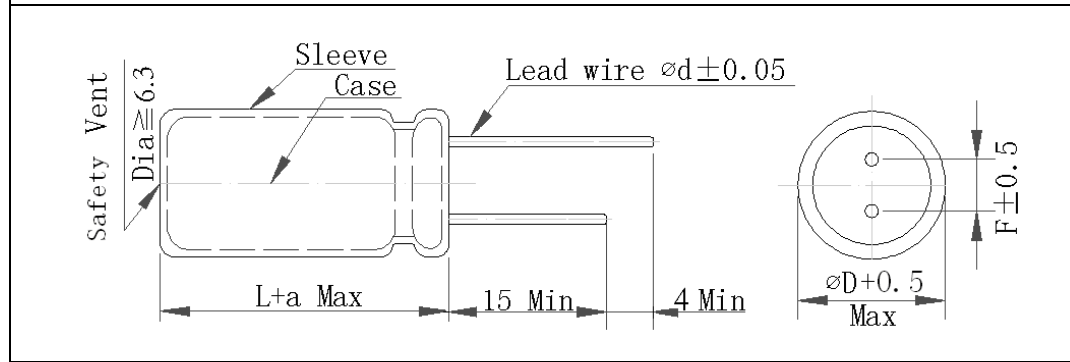
曾爱娥

### PREPARED BY

梁慧妍

## Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	ED	NO.:	PUBLISH DATE	2022-03-25
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Unit(mm):

P=12.7±1.0	H=18.5±0.5
P0=12.7±0.2	W=18.0±0.5
P1=3.85±0.5	W0=12.5MIN
P2=6.35±1.0	ΦD0=4.0±0.2
F=5.0+0.8/-0.2	t=0.7±0.2

Original								FIG-1									
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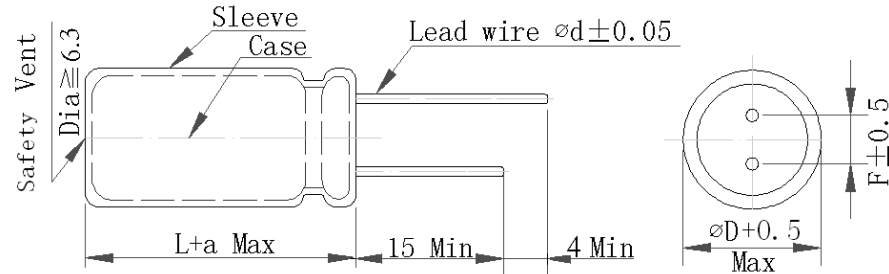
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
													DΦ	L	a	d	F	
1	ED1C152MPN1020EP5	/	1500 μF	±20%	16 V	/	-40~+105	/	/	2000	250	3000	10	20	/	/	5.0	FIG-1
2	ED1E471MPN1012R	/	470 μF	±20%	25 V	/	-40~+105	/	/	1210	250	3000	10	12	/	/	5.0	FIG-1
3	ED2A470MPN1013ER	/	47 μF	±20%	100 V	/	-40~+105	/	/	560	250	3000	10	13	/	/	5.0	FIG-1

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
1. Sleeve Color: Brown. 2. Suffix P5 : indicates Black PET sleeve.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

<b>Customer</b>	<b>Digi-Key</b>	<b>SERIES</b>	<b>ED</b>	<b>NO.:</b>	<b>PUBLISH DATE</b>	<b>2022-03-25</b>
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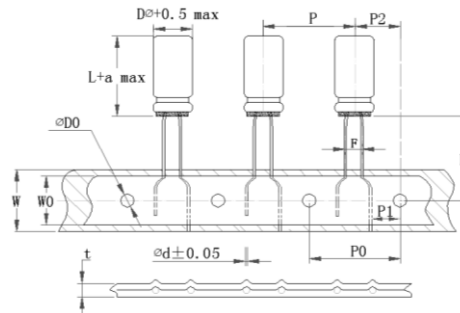
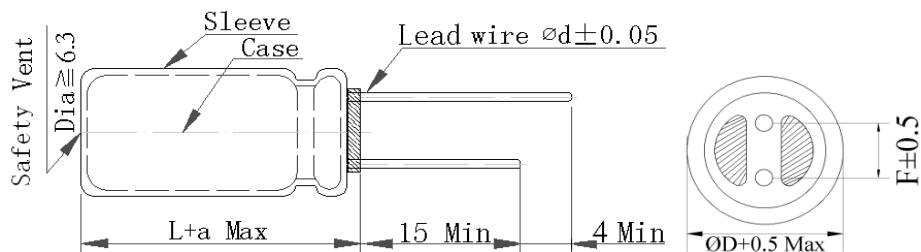
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tan $\delta$ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (m $\Omega$ max/ 120Hz)	Impedance @20°C (m $\Omega$ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														D $\Phi$	L	a	d	F	
1	ED1V122MNN1620	/	1200 $\mu$ F	$\pm 20\%$	35 V	/	-40~+105	/	/	1647	130	65	5000	16	20	/	/	7.5	---
2	ED1J102MNN1632	/	1000 $\mu$ F	$\pm 20\%$	63 V	/	-40~+105	/	/	2320	/	33	5000	16	32	/	/	7.5	---
3	ED2A221MNN1620	/	220 $\mu$ F	$\pm 20\%$	100 V	/	-40~+105	/	/	850	/	150	5000	16	20	/	/	7.5	---

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
Sleeve Color: Brown.	张洪斌	曾爱娥	梁慧妍

## Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	ED	NO.:	PUBLISH DATE	2022-03-25
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Unit (mm):

P=12.7±1.0

H=18.5±0.5

P0=12.7±0.2

P1=3.85±0.5

P2=6.35±1.0

W=18.0±0.5

F=2.5+0.8/-0.2

W0=12.5MIN

ΦD0=4.0±0.2

t=0.7±0.2

**Original**

**FIG-1**

No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 105°C (Hours)	Dimensions (mm)					Appearance Drawing No
														D Φ	L	a	d	F	
1	ED1C101MP20511EP5U	/	100 μF	±20%	16 V	/	-40~+105	/	/	285	/	800	2000	5	11	/	/	2.5	FIG-1
2	ED1E100MP20511U	/	10 μF	±20%	25 V	/	-40~+105	/	/	100	/	1200	2000	5	11	/	/	2.5	FIG-1
3	ED1H010MP20511U	/	1 μF	±20%	50 V	/	-40~+105	/	/	40	/	3000	2000	5	11	/	/	2.5	FIG-1
4	ED1H100MP20511ERU	/	10 μF	±20%	50 V	/	-40~+105	/	/	142	/	1280	2000	5	11	/	/	2.5	FIG-1
5	ED1H100MP20511U	/	10 μF	±20%	50 V	/	-40~+105	/	/	105	13270	1400	2000	5	11	/	/	2.5	FIG-1
6	ED1H220MP20511EP9U	/	22 μF	±20%	50 V	/	-40~+105	/	/	180	6030	750	2000	5	11	/	/	2.5	FIG-1
7	ED1H2R2MP20511U	/	2.2 μF	±20%	50 V	/	-40~+105	/	/	45	10000	1300	2000	5	11	/	/	2.5	FIG-1
8	ED1H4R7MP20511RU	/	4.7 μF	±20%	50 V	/	-40~+105	/	/	135	/	1020	2000	5	11	/	/	2.5	FIG-1
9	ED1V100MP20511U	/	10 μF	±20%	35 V	/	-40~+105	/	/	100	/	1500	2000	5	11	/	/	2.5	FIG-1
10	ED2A4R7MP20511U	/	4.7 μF	±20%	100 V	/	-40~+105	/	/	40	/	2100	2000	5	11	/	/	2.5	FIG-1



# Taiwan Chinsan Electronic Ind., Co., Ltd.

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TEL: +886 2 2995 0535 <http://www.chinsan.com/products/>

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
1. Sleeve Color: Brown. 2. Suffix P5 : indicates Black PET sleeve. 3. Suffix P9 : indicates Black PET sleeve. 4. Suffix U indicates convex rubber cover.	张洪斌	曾爱娥	梁慧妍