

LL Series

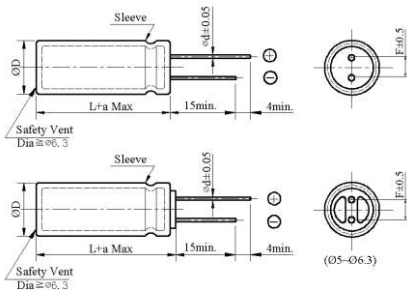


- High ripple current capability
- High stability

◆ SPECIFICATIONS

Item	Performance Characteristics												
Category Temperature Range	-25 ~ +105°C												
Working Voltage Range	160 ~ 500Vdc												
Capacitance Range	4.7~560 µF												
Capacitance Tolerance	±20% (at 25°C and 120Hz)												
Dissipation Factor (tanδ) (at 25°C, 120Hz)	Rated Voltage (V)	160 ~ 250	400 ~ 450	500									
	tanδ(Max)	0.15	0.20	0.20									
The above values should be increased by 0.02 for every additional 1000µF													
Leakage Current	$I \leq 0.03CV + 10 \mu A$ 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)	Rated voltage (V)	160 ~ 250	400	420 ~ 450	500								
	Z(-25°C)/Z(+20°C)	3	5	6	8								
(at 120Hz)													
Endurance	The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 2,000 ~ 5,000 hours at 105°C												
	Capacitance change	≒ ±20% of the initial value			<table border="1"> <tr> <th>Size</th> <th>Life time (hours)</th> </tr> <tr> <td>≤ 6.3Φ</td> <td>2,000</td> </tr> <tr> <td>= 8 Φ</td> <td>3,000</td> </tr> <tr> <td>≧ 10Φ</td> <td>5,000</td> </tr> </table>	Size	Life time (hours)	≤ 6.3Φ	2,000	= 8 Φ	3,000	≧ 10Φ	5,000
	Size	Life time (hours)											
	≤ 6.3Φ	2,000											
= 8 Φ	3,000												
≧ 10Φ	5,000												
Dissipation factor(tanδ)	≒ 200% of the specified value												
Leakage current	≒ specified value												
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 500 hours at 105°C without voltage applied.												
	Capacitance change	≒ ±20% 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	10	12.5	16	18
ΦD	ΦD + 0.5 Max			
Φd	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
a	L + 1.5 Max	$\leq 35 L + 1.5 \text{ Max}$ $\geq 40 L + 2.0 \text{ Max}$	L + 1.5 Max	

◆ PART NUMBER SYSTEM(Example : 350V 15µF)

LL 2 V 1 5 0 M N N 1 2 2 0

Special Request

Size code(1220 : 12.5×20)

Lead length code

Lead forming Type code

Capacitance tolerance code(M: ±20%)

Capacitance code (15µF)

Voltage code (350V)

Series code (LL)

Aluminum Electrolytic Capacitor

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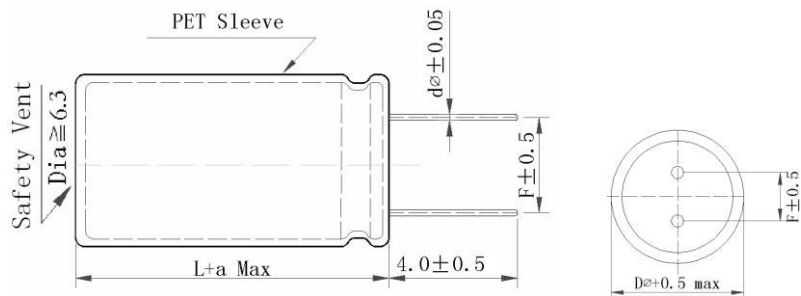


FIG-1

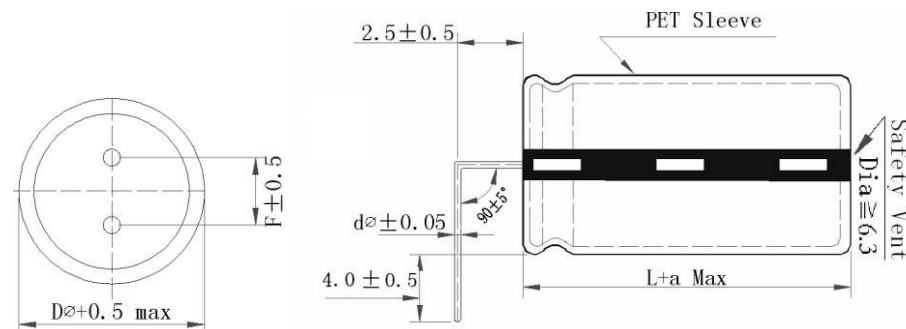


FIG-2

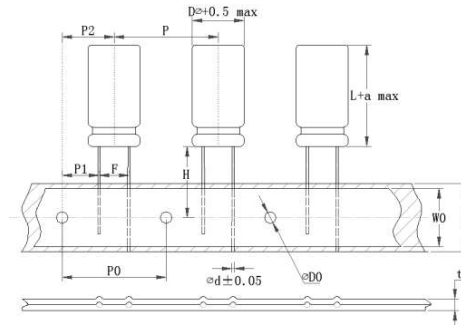
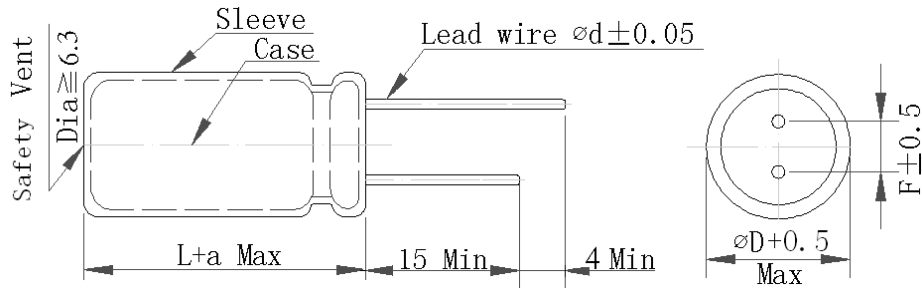
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 120Hz	Rated Ripple Current (mA rms) @ 105°C 100kHz	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	LL2G4R7HCD1012	/	4.7 μF	5%~20%	400 V	/	-25~+105	/	/	50	/	/	/	5000	10	12	/	/	5	FIG-1
2	LL2C560MSD1020R	/	56 μF	±20%	160 V	/	-25~+105	/	/	/	750	/	/	5000	10	20	/	/	5	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: Black.	张洪斌	曾爱娥	梁慧妍

Aluminum Electrolytic Capacitor

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

P=12.7±1.0	H=20.5±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

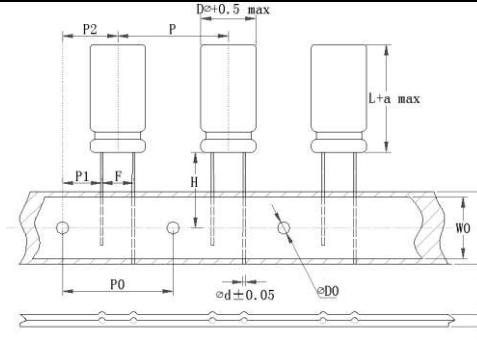
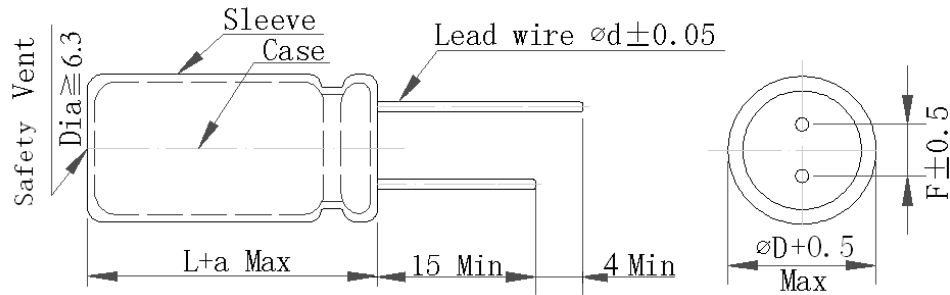
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 120Hz	Rated Ripple Current (mA rms) @ 105°C 100kHz	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	LL2G100MPH1013S	/	10 μF	±20%	400 V	/	-25~+105	/	/	180	/	8000	/	5000	10	13	/	/	5	FIG-1

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

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Sleeve Color: Black.	张洪斌	曾爱娥	梁慧妍

Aluminum Electrolytic Capacitor

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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

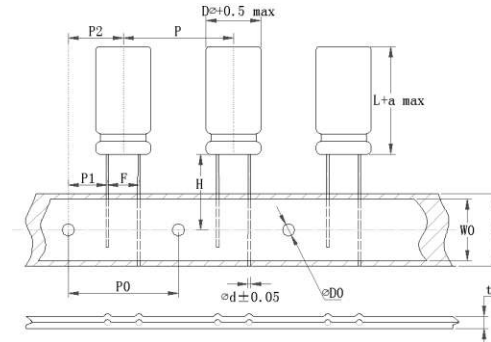
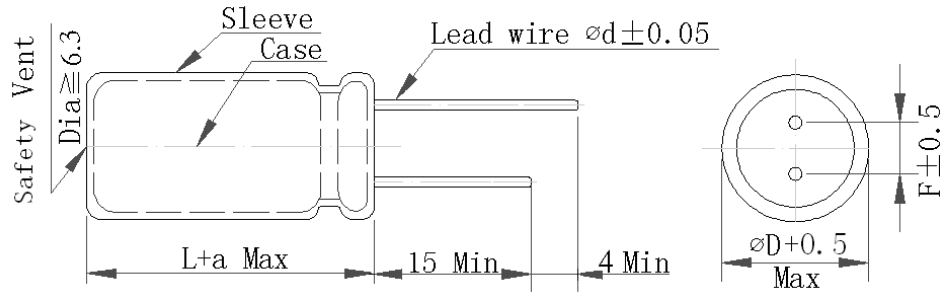
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 105°C 120Hz	Rated Ripple Current (mA rms) @ 105°C 100kHz	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	LL2H6R8MP51020E	/	6.8 μF	±20%	500 V	/	-25~+105	/	/	200	/	46800	/	5000	10	20	/	/	5	FIG-1
2	LL2H6R8MP51016E	/	6.8 μF	±20%	500 V	/	-25~+105	/	/	/	230	46800	26610	5000	10	16	/	/	5	FIG-1
3	LL2H4R7MP51016R	/	4.7 μF	±20%	500 V	/	-25~+105	/	/	105	/	/	/	5000	10	16	/	/	5	FIG-1
4	LL2W4R7MP51016R	/	4.7 μF	±20%	450 V	/	-25~+105	/	/	105	/	30000	28000	5000	10	16	/	/	5	FIG-1

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

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Aluminum Electrolytic Capacitor

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Unit(mm):

P=15.0±1.0	H=18.5±0.5
P0=15.0±0.2	W=18.0±0.5
P1=5.0±0.5	W0=12.5MIN
P2=7.5±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 120Hz	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	LL2H100MP51220ER	/	10 μF	±20%	500 V	/	-25~+105	/	/	/	315	/	3500	5000	12.5	20	/	/	5	FIG-1
2	LL2W100MP51220ER	/	10 μF	±20%	450 V	/	-25~+105	/	/	315	/	/	3500	5000	12.5	20	/	/	5	FIG-1

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

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