

SM Series

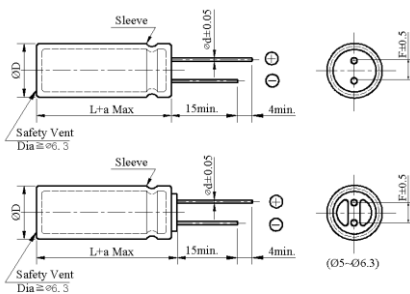


- Standard size downsized
- 2,000 hours assured at 85°C

◆ SPECIFICATIONS

Item	Performance Characteristics												
Category Temperature Range	-40 ~ +85°C						-25 ~ +85°C						
Working Voltage Range	6.3 ~ 100Vdc						160 ~ 450Vdc						
Capacitance Range	0.1 ~ 22,000µF						0.47 ~ 470 µF						
Capacitance Tolerance	±20% (at 25°C and 120Hz)												
Dissipation Factor (tanδ) (at 25°C, 120Hz)	Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160 ~ 250	350 ~ 500	550	
	tanδ(Max)	0.26	0.22	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20	0.25	
The above values should be increased by 0.02 for every additional 1000µF													
Leakage Current	I=0.01CV or 3µA whichever is greater (6.3 ~ 100V) I=0.03CV + 10µA (160 ~ 550V) I : Leakage current (µA) C : Rated capacitance (µF) V : Rated voltage (V) Impress the rated voltage for 2 minutes												
	Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 ~ 250	350	400 ~ 500	550
Low Temperature Characteristics Impedance Ratio(MAX)	Z(-40°C)/Z(+20°C)	12	10	8	5	4	3	3	3	—	—	—	—
	Z(-25°C)/Z(+20°C)	—	—	—	—	—	—	—	—	3	6	6	8
(at 120Hz)													
Endurance	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 2,000 hours at 85°C.												
	Capacitance change	≅ ±20% of the initial value											
	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 1,000 hours at 85°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												

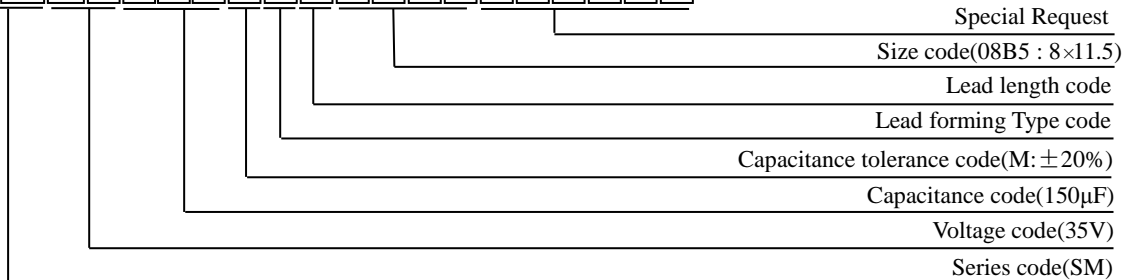
◆ DIMENSIONS (mm)



ΦD	5	6.3	8	10	12.5	16	18	20	22
ΦD	ΦD +0.5 Max							ΦD +1.0 Max	
Φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10	10
a	L+1.5 Max				≅ 35 L+1.5Max ≧ 40 L+2.0 Max		L+1.5 Max		L+2.0 Max

◆ PART NUMBER SYSTEM (Example : 35V 150µF)

S M I V I 5 I M N N 0 8 B 5



Aluminum Electrolytic Capacitor

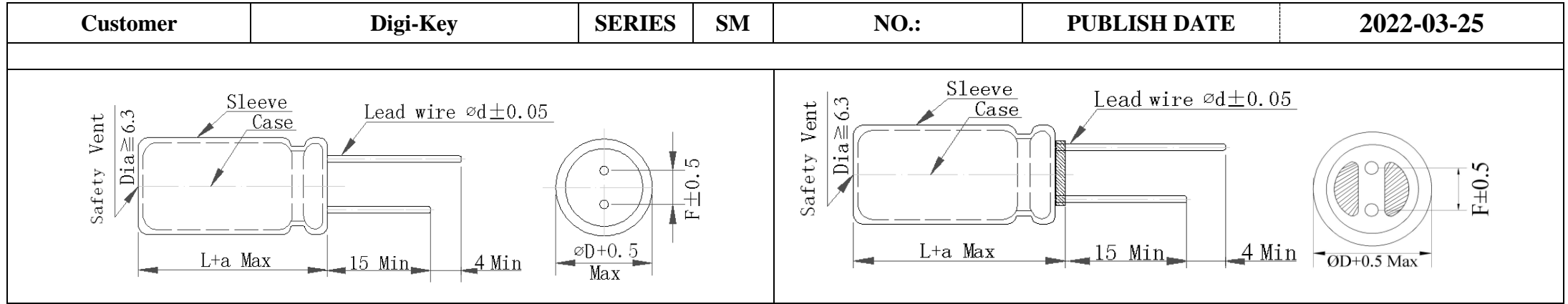


FIG-1

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) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															D Φ	L	a	d	F	
1	SM1A470MNN0511	/	47 μF	±20%	10 V	/	-40~+85	/	/	100	/	/	/	2000	5	11	/	/	2	FIG-1
2	SM1A470MNN0511	/	47 μF	±20%	10 V	/	-40~+85	/	/	100	/	/	/	2000	5	11	/	/	2	FIG-1
3	SM1A222MNN1020	/	2200 μF	±20%	10 V	/	-40~+85	/	/	1310	/	/	/	2000	10	20	/	/	5	FIG-1
4	SM1C102MNN1016	/	1000 μF	±20%	16 V	/	-40~+85	/	/	800	/	/	/	2000	10	16	/	/	5	FIG-1
5	SM1C152MNN1018	/	1500 μF	±20%	16 V	/	-40~+85	/	/	1000	/	/	/	2000	10	18	/	/	5	FIG-1
6	SM1C222MNN1225	/	2200 μF	±20%	16 V	/	-40~+85	/	/	1420	/	/	/	2000	12.5	25	/	/	5	FIG-1
7	SM1E220MNN0511	/	22 μF	±20%	25 V	/	-40~+85	/	/	80	/	/	/	2000	5	11	/	/	2	FIG-1
8	SM1E332MNN1625R	/	3300 μF	±20%	25 V	/	-40~+85	/	/	1980	/	/	/	2000	16	25	/	/	7.5	FIG-1
9	SM1V331MNN1012	/	330 μF	±20%	35 V	/	-40~+85	/	/	550	/	/	/	2000	10	12	/	/	5	FIG-1
10	SM1V222MNN1625	/	2200 μF	±20%	35 V	/	-40~+85	/	/	1880	/	/	/	2000	16	25	/	/	7.5	FIG-1
11	SM2G680MNN1825EF3	/	68 μF	±20%	400 V	/	-25~+85	/	/	500	/	4879	/	3000	18	25	/	/	7.5	FIG-1



Taiwan Chinsan Electronic Ind., Co., Ltd.

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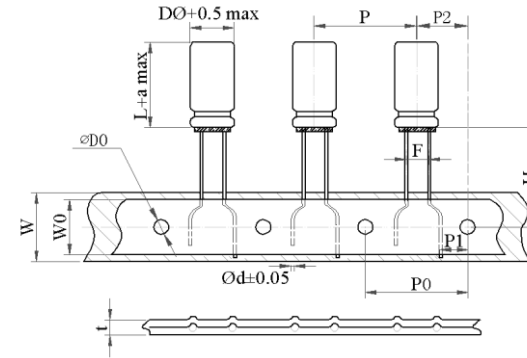
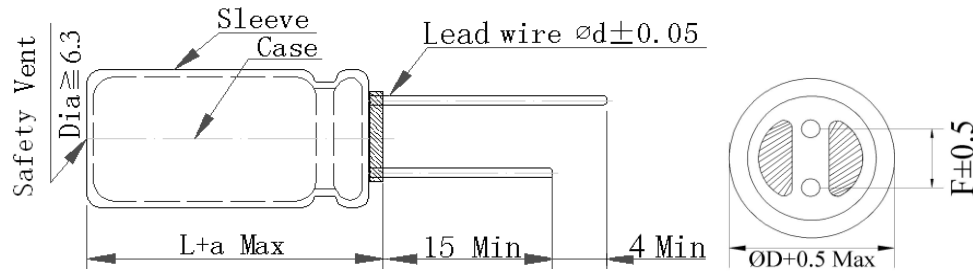
12	SM2S560MNN1330	/	56 μ F	$\pm 20\%$	420 V	/	-25~+85	/	/	200	/	/	/	2000	13	30	/	/	5	FIG-1
13	SM2W100MNN1220R	/	10 μ F	$\pm 20\%$	450 V	/	-25~+85	/	/	130	/	/	/	2000	12.5	20	/	/	5	FIG-1
14	SM1H332MNN18P1	/	3300 μ F	$\pm 20\%$	50 V	/	-40~+85	/	/	2500	/	/	/	2000	18	35.5	/	/	7.5	FIG-1
15	SM1H472MNN2040	/	4700 μ F	$\pm 20\%$	50 V	/	-40~+85	/	/	2850	/	/	/	2000	20	40	/	/	10	FIG-1
16	SM2L100MNN1025	/	10 μ F	$\pm 20\%$	550 V	/	-25~+85	/	/	100	/	/	/	2000	10	25	/	/	5	FIG-1
17	SM1J100MNN0511U	/	10 μ F	$\pm 20\%$	63 V	/	-40~+85	/	/	70	/	/	/	2000	5	11	/	/	2	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: Dark Blue. Suffix U indicates convex rubber cover.	张洪斌	曾爱娥	梁慧妍

Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	SM	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

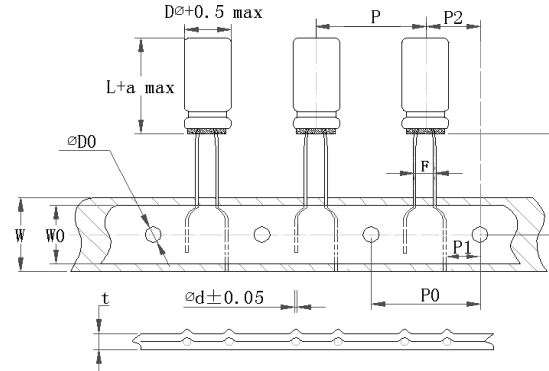
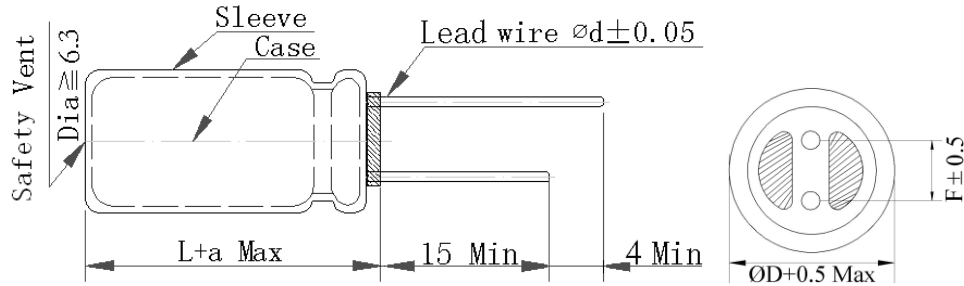
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															DΦ	L	a	d	F	
1	SM1V220MPZ0511U	/	22 μF	±20%	35 V	/	-40~+85	/	/	90	/	/	/	2000	5	11	/	/	2	FIG-1

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

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Aluminum Electrolytic Capacitor

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

$P=12.7 \pm 1.0$	$H=18.5 \pm 0.5$
$P0=12.7 \pm 0.2$	$P1=3.85 \pm 0.5$
$P2=6.35 \pm 1.0$	$W=18.0 \pm 0.5$
$F=2.5+0.8/-0.2$	$WO=12.5 MIN$
$\varnothing D0=4.0 \pm 0.2$	$t=0.7 \pm 0.2$

Original

FIG-1

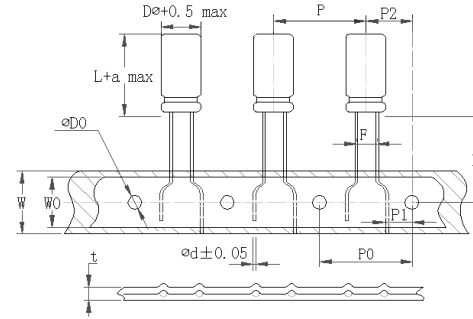
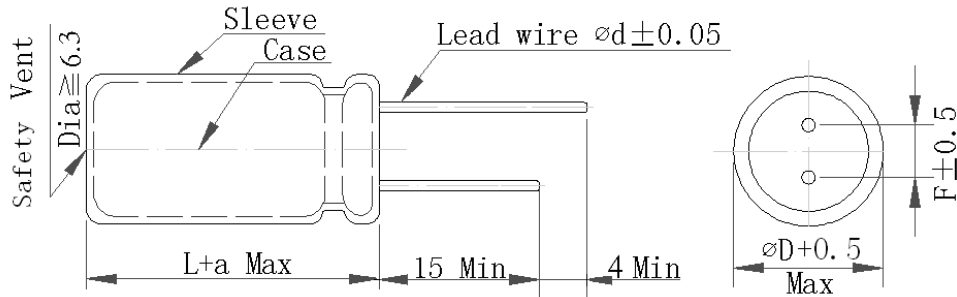
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															DΦ	L	a	d	F	
1	SM1C470MP20511U	/	47 μF	±20%	16 V	/	-40~+85	/	/	110	/	/	/	2000	5	11	/	/	2.5	FIG-1
2	SM1E100MP20511U	/	10 μF	±20%	25 V	/	-40~+85	/	/	55	/	/	19900	2000	5	11	/	/	2.5	FIG-1
3	SM1H100MP20511U	/	10 μF	±20%	50 V	/	-40~+85	/	/	70	/	/	/	2000	5	11	/	/	2.5	FIG-1

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

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Aluminum Electrolytic Capacitor

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

- P=12.7±1.0
- P0=12.7±0.2
- P2=6.35±1.0
- F=2.5+0.8/-0.2
- ΦD0=4.0±0.2
- H=18.5±0.5
- P1=3.85±0.5
- W=18.0±0.5
- W0=12.5MIN
- t=0.7±0.2

Original

FIG-1

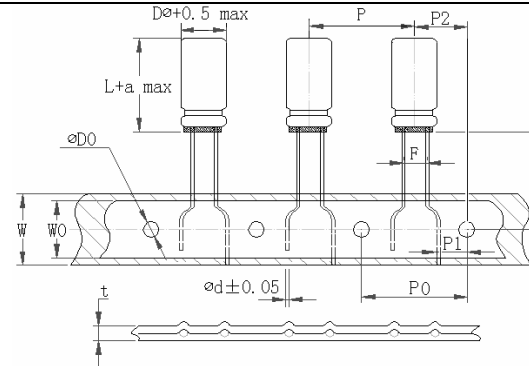
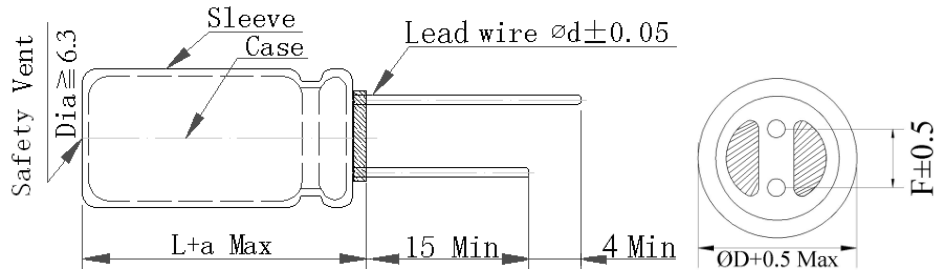
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															DΦ	L	a	d	F	
1	SM1C221MP26311	/	220 μF	±20%	16 V	/	-40~+85	/	/	270	/	/	/	2000	6.3	11	/	/	2.5	FIG-1

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

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

Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	SM	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

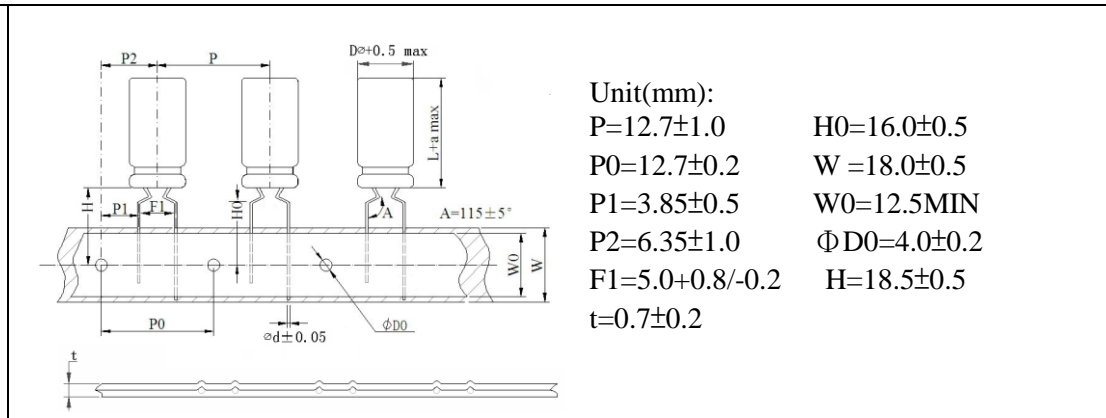
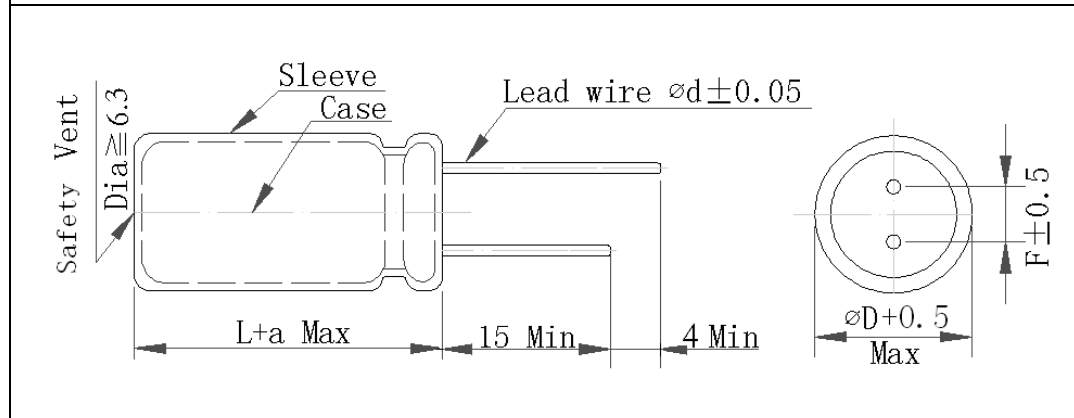
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															DΦ	L	a	d	F	
1	SM1C101MP26311U	/	100 μF	±20%	16 V	/	-40~+85	/	/	180	/	/	1450	2000	6.3	11	/	/	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
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Aluminum Electrolytic Capacitor

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

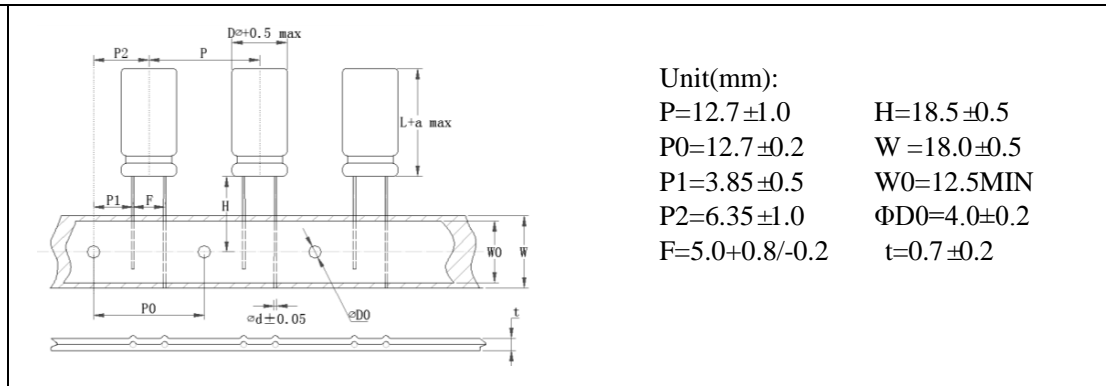
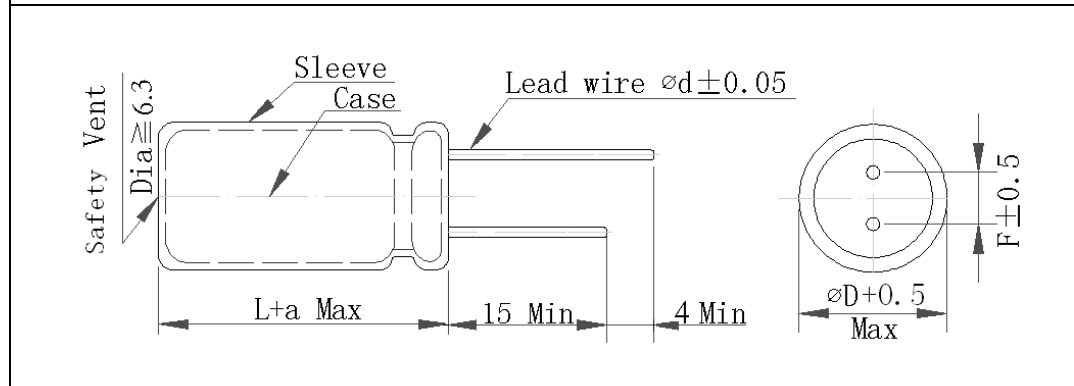
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															DΦ	L	a	d	F1	
1	SM1E221MP50812	/	220 μF	±20%	25 V	/	-40~+85	/	/	330	/	/	/	2000	8	12	/	/	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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Original **FIG-1**

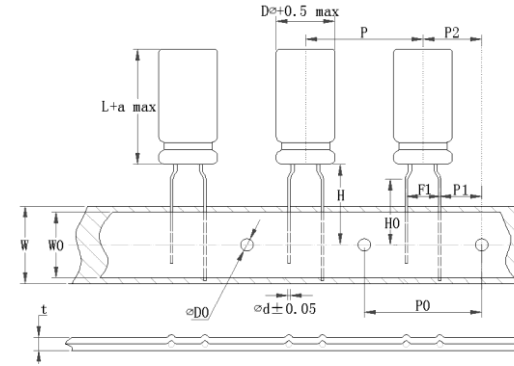
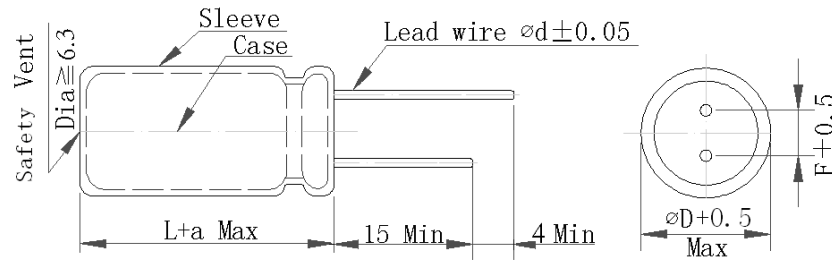
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															DΦ	L	a	d	F	
1	SM1E102MP51020	/	1000 μF	±20%	25 V	/	-40~+85	/	/	996	/	/	/	2000	10	20	/	/	5	FIG-1
2	SM2E330MP51020	/	33 μF	±20%	250 V	/	-25~+85	/	/	140	/	/	/	2000	10	20	/	/	5	FIG-1

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

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Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	SM	NO.:	PUBLISH DATE	2022-03-25
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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=18.5±0.5	

Original

FIG-1

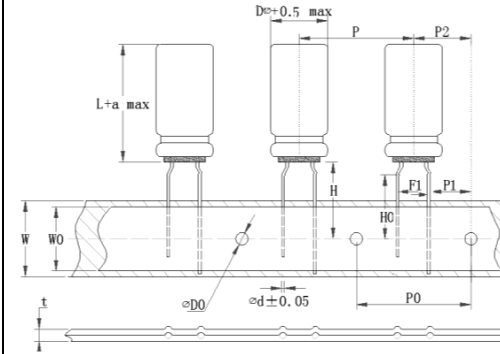
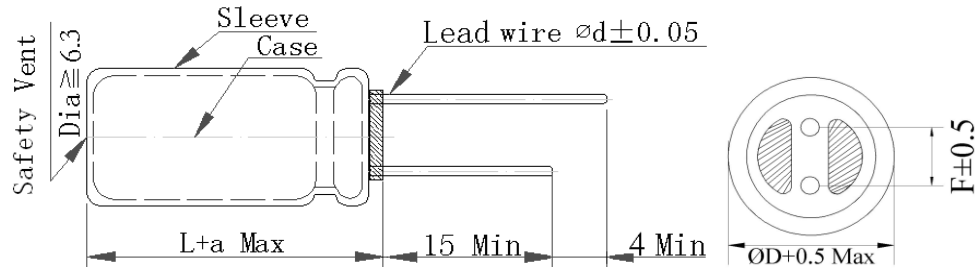
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															DΦ	L	a	d	F1	
1	SM1A101MPN0511	/	100 μF	±20%	10 V	/	-40~+85	/	/	150	/	/	/	2000	5	11	/	/	5	FIG-1
2	SM1H220MPN0511	/	22 μF	±20%	50 V	/	-40~+85	/	/	95	/	/	/	2000	5	11	/	/	5	FIG-1

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

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Unit (mm):

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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=18.5±0.5	

Original

FIG-1

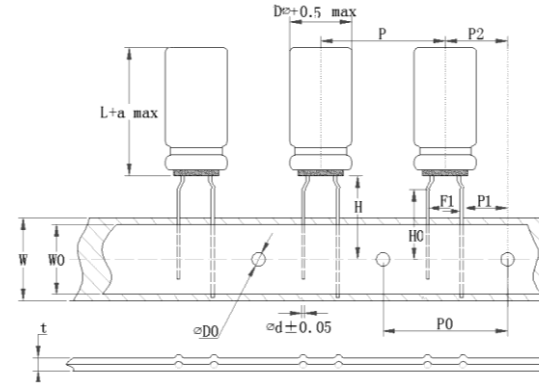
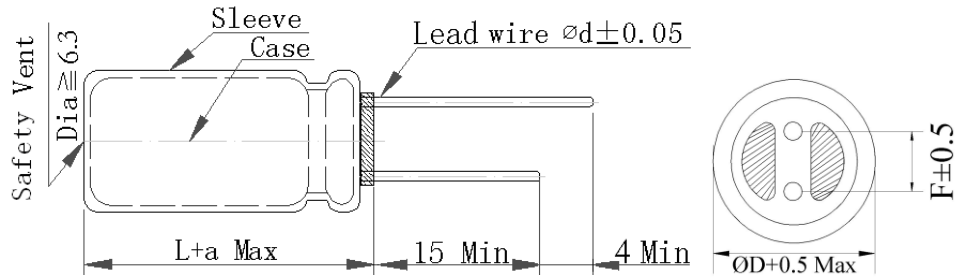
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															DΦ	L	a	d	F1	
1	SM1V470MPN0511U	/	47 μF	±20%	35 V	/	-40~+85	/	/	130	/	/	/	2000	5	11	/	/	5	FIG-1
2	SM1H330MPN0511U	/	33 μF	±20%	50 V	/	-40~+85	/	/	125	/	/	/	2000	5	11	/	/	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: Dark Blue. Suffix U indicates convex rubber cover.	张洪斌	曾爱娥	梁慧妍

Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	SM	NO.:	PUBLISH DATE	2022-03-25
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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=18.5±0.5	

Original

FIG-1

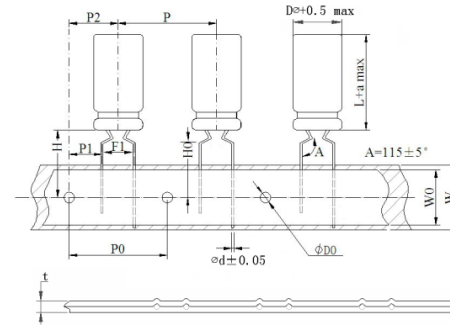
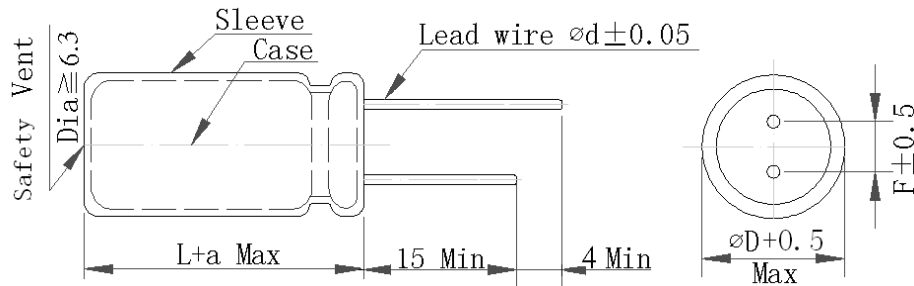
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tanδ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															DΦ	L	a	d	F1	
1	SM1E101MPN6311U	/	100 μF	±20%	25 V	/	-40~+85	/	/	190	/	/	/	2000	6.3	11	/	/	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: Dark Blue. Suffix U indicates convex rubber cover.	张洪斌	曾爱娥	梁慧妍

Aluminum Electrolytic Capacitor

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

$P = 12.7 \pm 1.0$	$H_0 = 16.0 \pm 0.5$
$P_0 = 12.7 \pm 0.2$	$W = 18.0 \pm 0.5$
$P_1 = 3.85 \pm 0.5$	$W_0 = 12.5 \text{ MIN}$
$P_2 = 6.35 \pm 1.0$	$\phi D_0 = 4.0 \pm 0.2$
$F_1 = 5.0 + 0.8 / -0.2$	$H = 18.5 \pm 0.5$
$t = 0.7 \pm 0.2$	

Original

FIG-1

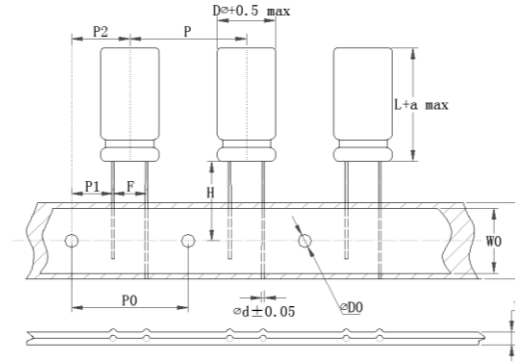
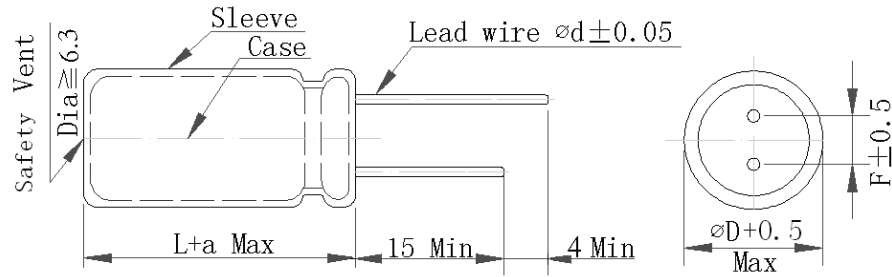
No.	CHINSAN Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp Range (°C)	Tan δ @ 25°C (120Hz) (Max)	Leakage Current (uA) (2 min.)	Rated Ripple Current (mA rms) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @ 25°C (m Ω max/ 120Hz)	Impedance @ 20°C (m Ω max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															D ϕ	L	a	d	F1	
1	SM1C471MPN0812	/	470 μ F	$\pm 20\%$	16 V	/	-40~+85	/	/	440	/	/	/	2000	8	12	/	/	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: Dark Blue.	张洪斌	曾爱娥	梁慧妍

Aluminum Electrolytic Capacitor

Customer	Digi-Key	SERIES	SM	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) @ 85°C 120Hz	Rated Ripple Current (mA rms) @ 85°C 100kHz	ESR @25°C (mΩ max/ 120Hz)	Impedance @20°C (mΩ max/ 100kHz)	Endurance @ 85°C (Hours)	Dimensions (mm)					Appearance Drawing No
															DΦ	L	a	d	F	
1	SM1E471RPN1013	/	470 μF	0%~20%	25 V	/	-40~+85	/	/	520	/	/	/	2000	10	13	/	/	5	FIG-1
2	SM1E331MPN1012	/	330 μF	±20%	25 V	/	-40~+85	/	/	490	/	/	/	2000	10	12	/	/	5	FIG-1
3	SM1H331MPN1020	/	330 μF	±20%	50 V	/	-40~+85	/	/	600	/	/	/	2000	10	20	/	/	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: Dark Blue.	张洪斌	曾爱娥	梁慧妍