PRODUCT SPECIFICATIONS

CUSTOMER:

CUSTOMER'S REFERENCE: **3/30×× 3/31×× 3/32×× Series**

DESCRIPTIONS : **POLYESTER FILM CAPACITOR (INDUCTIVE)**

SHENGXIN TYPE : **CL11 SERIES**

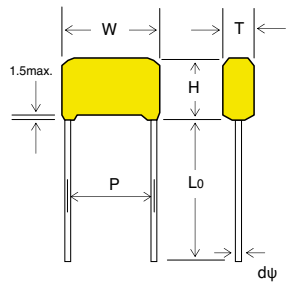


Fig. 1

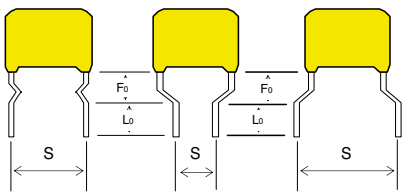


Fig. 2 Fig. 3 Fig. 4

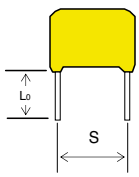


Fig. 5

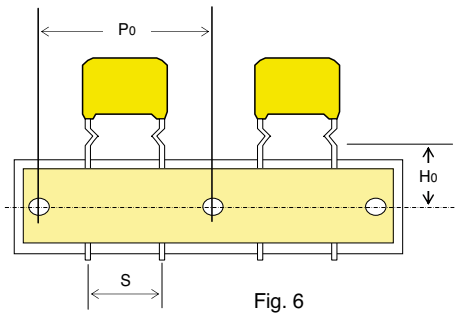


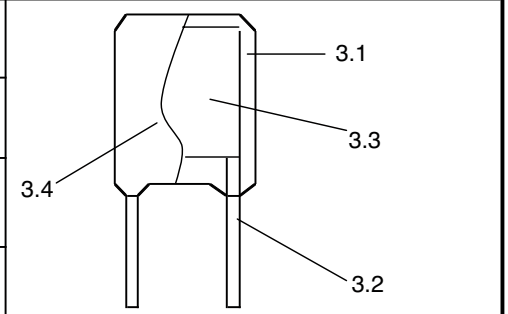
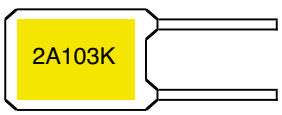
Fig. 6

1. PRODUCT DIMENSIONS :

unit : mm

CUSTOMER'S PART NO.	CAP nF	Tol. ±%	R.V. VDC	T.V. VDC	W max.	H max.	T max.	P ±1	S ±0.5	d? ±0.05	L0 ±0.5	L0 MIN	Fig.	SHENGXIN PART NO.
3/3000	1,0	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 102K100V
3/3005	1,2	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 122K100V
3/3010	1,5	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 152K100V
3/3015	1,8	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 182K100V
3/3020	2,2	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 222K100V
3/3025	2,7	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 272K100V
3/3030	3,3	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 332K100V
3/3035	3,9	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 392K100V
3/3040	4,7	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 472K100V
3/3050	5,6	10	100	300	6,0	10,5	3,5	3,5		0,5		20,0	1	CL11 562K100V
3/3060	6,8	10	100	300	6,0	11,5	3,5	3,5		0,5		20,0	1	CL11 682K100V
3/3070	8,2	10	100	300	6,5	11,5	5,0	4,0		0,5		20,0	1	CL11 822K100V
3/3080	10,0	10	100	300	6,5	11,5	5,0	4,0		0,5		20,0	1	CL11 103K100V
3/3090	12,0	10	100	300	6,5	11,5	5,0	4,0		0,5		20,0	1	CL11 123K100V
3/3100	15,0	10	100	300	7,5	12,0	5,0	4,5		0,5		20,0	1	CL11 153K100V
3/3105	18,0	10	100	300	7,5	12,0	5,0	4,5		0,5		20,0	1	CL11 183K100V
3/3110	22,0	10	100	300	8,0	12,0	5,0	5,0		0,5		20,0	1	CL11 223K100V
3/3120	27,0	10	100	300	8,0	12,0	5,0	5,0		0,5		20,0	1	CL11 273K100V
3/3130	33,0	10	100	300	9,5	12,0	5,0	5,5		0,5		20,0	1	CL11 333K100V
3/3135	39,0	10	100	300	9,5	12,5	5,0	5,5		0,5		20,0	1	CL11 393K100V
3/3140	47,0	10	100	300	9,5	12,5	5,0	5,5		0,5		20,0	1	CL11 473K100V
3/3145	56,0	10	100	300	10,0	12,5	7,5	7,5		0,5		20,0	1	CL11 563K100V
3/3160	68,0	10	100	300	10,0	12,5	7,5	7,5		0,5		20,0	1	CL11 683K100V
3/3170	82,0	10	100	300	11,0	12,5	7,5	7,5		0,5		20,0	1	CL11 823K100V
3/3180	100,0	10	100	300	11,5	14,5	7,5	7,5		0,5		20,0	1	CL11 104K100V
3/3190	120,0	10	100	300	12,5	16,5	8,0	8,0		0,5		20,0	1	CL11 124K100V
3/3200	150,0	10	100	300	12,5	16,5	8,0	8,0		0,5		20,0	1	CL11 154K100V
3/3205	180,0	10	100	300	13,0	16,5	8,0	8,0		0,5		20,0	1	CL11 184K100V
3/3210	220,0	10	100	300	14,0	17,5	9,0	9,0		0,5		20,0	1	CL11 224K100V
3/3212	270,0	10	100	300	16,0	19,5	10,0	10,0		0,5		20,0	1	CL11 274K100V
3/3215	330,0	10	100	300	16,0	19,5	10,0	10,0		0,5		20,0	1	CL11 334K100V
3/3220	390,0	10	100	300	16,0	21,5	10,0	10,0		0,5		20,0	1	CL11 394K100V
3/3230	470,0	10	100	300	16,0	21,5	10,0	10,0		0,5		20,0	1	CL11 474K100V

PRODUCT SPECIFICATIONS **TYPE : CL11**

NO.	ITEM	DESCRIPTIONS	
1.	**SCOPE**	This specification cover the requirements of SHENGXIN'S Polyester Film Capacitor (Inductive) Type: CL11	
2.	**STANDARD A- ATMOSPHERIC CONDITONS FOR MAKING MEASUREMENTS**		
2.1.	AMBIENT TEMPERATURE	15°C to 35°C (If there is any doubt on the results,the measurements shall be made at +20/+/-5°C	
2.2.	RELATIVE HUMIDITY (R.H.)	45% to 75% (If there is any doubt on the results, the measurements shall be made	
2.3.	AIR PRESSURE	86 kpa to 106 kpa.	
2.4.	OPERATING TEMPERATURE RANGE	-40°C to +85°C for which the capacitor can be operated continuously at rated voltage.	
3.	**CONSTRUCTION**		
3,1	DIELECTRIC	Polyester Film	
3,2	LEAD WIRE	Copper-clad Steel wire	
3,3	INNER COATING	Epoxy Resin (Clear)	
3,4	OUTER COATING	Epoxy Resin (Green)	
4.	**MARKING**		
4.1.	RATED VOLTAGE	"2A" for "100VDC"	
4.2.	NOMINAL CAPACITANCE	"103" for "10000pF"	
4.3.	TOLERANCE	"K" for "±10%"	
4.4.	MARKING COLOR	Black or White	
			

5.	ELECTRICAL CHARACTERISTICS			
NO.	ITEM		PERFORMANCE	TEST CONDITIONS
5.1.	Withstand Voltage (TV)	Between Terminals	Shall be no abnormality.	Apply 300% of rated voltage for 1 to 5 sec., or rated voltage for 60 sec charge current must be 1A max.
		Between Terminals & Enclosure	Shall be no abnormality.	Apply 200% of rated voltage for 2 to 5 sec.
5.2.	Insulation Resistance (I.R.)		> 2,0000 Mohm(C ≤0.1uF) > 2,000Mohm(C>0.1uF)	Apply Vt +/- 15% for 60 +/- 5 sec. at +20 +/- 2°C.Vt = 500 VDC if rated voltage <= 100 VDC;Vt = 100 VDC if 100 VDC < rated voltage <= 500 VDC; Vt = 500 VDC if rated voltage > 500 VDC.

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5.3.	Capacitance (CAP)		Within the tolerance specified. (at +20 +/- 5°C).	Measuring Frequency : 1 KHz +/- 10%. Measuring Voltage : 1 Vrms. Max.
5.4.	Dissipation Factor (DF)		0.01 (1.0%) max at 1KHz.	Measuring Frequency : 1Khz +/- 10% and 100+/-0.2Khz, Measuring Voltage : 1Vrmsmax.
5.5.	Connection of Element		Shall be no open nor short-circuiting. The connection shall be stable. DF shall be <= 0.01 (1.0%) at 1 KHz.	Apply 200% of rated voltage for 10 times.
5.6.	Solderability		More than 95%of circumferential surface of lead wire shall be covered with new solder.	Soldering temperature : +235 +/- 5°C. Immersion duration : 2 +/- 0.5 sec.
6.	**MECHANICAL CHARACTERISTICS**			
NO.	ITEM		PERFORMANCE	TEST CONDITIONS
6.1.	Terminal Strength	Tensile	Shall be no abnormality.	Apply 1.0 kg for 30 +/- 5 sec. to the terminal in the axial direction, and acting in a direction away from the body.
		Bending	Shall be no abnormality.	Apply 0.5 kg for 2 cycles. Each cycle includes: 90° once, return to its initial position for2-3sec.and then to the op
7.	**ENDURANCE CHARACTERISTICS**			
NO.	ITEM		PERFORMANCE	TEST CONDITIONS
7.1.	Temperature Cycle	Appearance	Shall be no remarkable change.	Test Temperature Cycle : Total 5 cycles. Each cycle includes : 1. +20 +/- 2°C for 3 min. 2. -40+0-3°C for 30 min. 3. +20+/-2°C for 3 min. 4. +85+3/-0°C for 30 min. 5. +20+/-2°C for 3 min.
		Withstand Voltage	Shall satisfy No. 5.1.	
		Capacitance Change Rate (ΔC/C)	Within +/- 3% of the value before test.	
		Dissipation Factor	Tanδ:1.0% max. (1KHz)	
		Insulation Resistance (I.R.)	>= 50% of the limit value of No. 5.2.	

NO.	ITEM		PERFORMANCE	TEST CONDITIONS
7.2.	High Temperature Loading	Appearance	Shall be no remarkable change.	Test Temperature : +85 +/-2℃ Apply 140% of rated voltage for 240+8/-0hrs; orapply rated voltage for 1000hrs+/-12hrs. allow it stay alone for 1.5+/-0.5 hrs at standard temperature and humidity before making measurements.
		Withstand Voltage	Shall satisfy No. 5.1.	
		Capacitance Change Rate (ΔC/C)	Within +/- 8% of the value before test.	
		Dissipation Factor	Tanδ:1.1% max. (1KHz)	
		Insulation Resistance (I.R.)	>= 50% of the limit value of No. 5.2.	
7.3.	Damp Heat Loading	Appearance	Shall be no remarkable change. The marking shall be legible.	Refer to JIS C 0022. Test temperature :+40 +/- 2℃ Test humidity : 90% to 95% R.H. Test voltage : rated voltage. Test duration:500+24/-0 hrs. After test, allow it stay alone for 1.5+/-0.5 hrs at standard temperature and humidity before making measurements.
		Withstand Voltage	Shall satisfy No. 5.1.	
		Capacitance Change Rate (ΔC/C)	Within +/- 10% of the value before test.	
		Dissipation Factor	Tanδ:1.2% max. (1KHz)	
		Insulation Resistance (I.R.)	>= 50% of the limit value of No. 5.2.	
		Appearance	Shall be no remarkable change. The marking shall be legible.	
		Withstand Voltage Between Terminals	Shall satisfy No. 5.1.	

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7.4.	Soldering Heat Resistance	Capacitance Change Rate (ΔC/C)	Within +/- 3% of the value before test.	Soldering Temperature : +230 +/- 5oC. Immersion Duration : 3+/- 0.5 sec. Immersion Depth : 4 +/- 0.8 mm from roots. After test, allow it stay alone for 1.5+/-0.5 hrs. at standard temperature and humidity before making measurements.
		Dissipation Factor	Tanδ:1.0% max. (1KHz)	
		Insulation Resistance (I.R.)	>= 50% of the limit value of No. 5.2.	
		Connection of Element	Shall be stable.	
7.5.	Dry Heat Resistance	Appearance	Shall be no remarkable change.	Test Temperature : +85 +/- 2°C Test Duration : 16 +1/-0 hrs.
		Withstand Voltage	Shall satisfy No. 5.1.	
		Capacitance Change Rate (ΔC/C)	Within +/-6% of the value before test.	
		Dissipation Factor	Tanδ:1.1% max. (1KHz)	
		Insulation Resistance (I.R.)	>= 50% of the limit value of No. 5.2.	
7.6.	Cold Resistance	Appearance	Shall be no remarkable change.	Test Temperature : -40+/-3 °C Test Duration : 2 +/-1 hrs.
		Withstand Voltage	Shall satisfy No. 5.1.	
		Capacitance Change Rate (ΔC/C)	Within +0/-7% of the value before test.	
		Dissipation Factor	Tanδ:1.0% max. (1KHz)	
		Insulation Resistance (I.R.)	>= 50% of the limit value of No. 5.2.	

NO.	ITEM		PERFORMANCE	TEST CONDITIONS
7.7.	Humidity Resistance	Appearance	Shall be no remarkable change.	Refer to JIS C 0022. Test Temperature : +40 +/- 2oC. Test Humidity : 90% to 95% R.H. Test Duration : 500 +24/-0 After test, allow it stay alone for 1.5+/-0.5 hrs. at standard temperature and humidity before making measureements.
		Withstand Voltage	Shall satisfy No. 5.1.	
		Capacitance Change Rate (ΔC/C)	Within +/- 10% of the value before test.	
		Dissipation Factor	Tanδ:1.2% max. (1KHz)	
		Insulation Resistance	>= 50% of the limit value of No. 5.2.	
7.8.	Vibration Resistance	Connection Strength	Shall be no open nor short-circuiting. The connection shall be stable.	Testing method per IEC 68-2-6 Fc. Frequency Change : 10--55--10 Hz. Vibration Distance : 1.5 mm. Test Direction : X Y Z. Test Duration: 2+1/-0 hrs each direction.
		Appearance	Shall be no mechanical damage.	
7.9.	Rapid Temperature Change	Appearance	Shall be no remarkable change.	Testing method per IEC 68-2-14 Na. Test Temperature Cycle : Total 5 cycles. High Temperature : +85 +/-5 ℃ Low Temperature : -40+/-5℃ 30 min +/- 10% for each temperature.
		Withstand Voltage	Shall satisfy No. 5.1.	
		Capacitance Change Rate (ΔC/C)	Within +/- 3% of the value before test.	
		Dissipation Factor	Tanδ:1.0% max. (1KHz)	
		Insulation Resistance	>= 50% of the limit value of No. 5.2.	

8.	**ACCEPTABLE QUALITY LEVEL (AQL)**		
NO.	ITEM	AQL	SAMPLING PLAN
8.1.	Appearance AQL	0,65	

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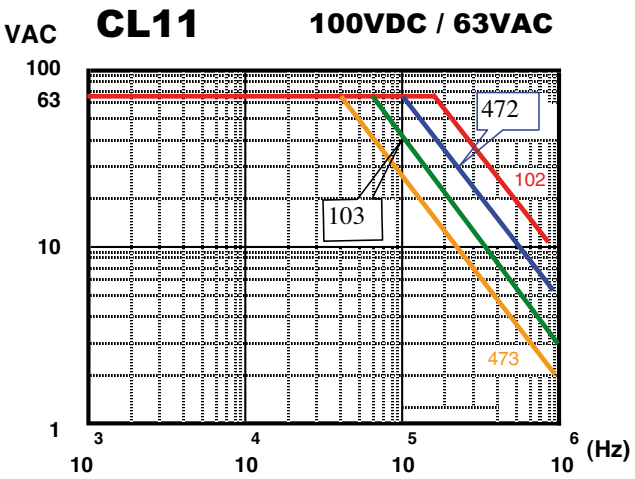
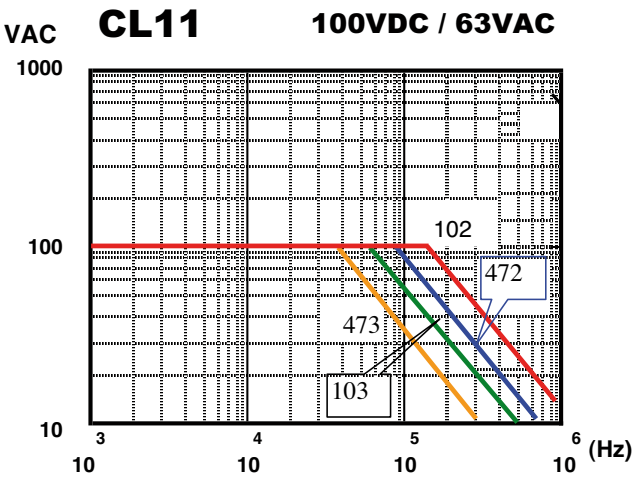
8.2.	Dimension AQL	0,65	According to MIL-STD-105E level II. By lot outgoing inspection.
8.3.	Mechanical Characteristics AQL	0,40	
8.4.	Electrical Characteristics AQL		
	CAP, DF,	0,04	
	TV, IR,	Zero Defect	

Permissible AC Voltage VS Frequency Curve

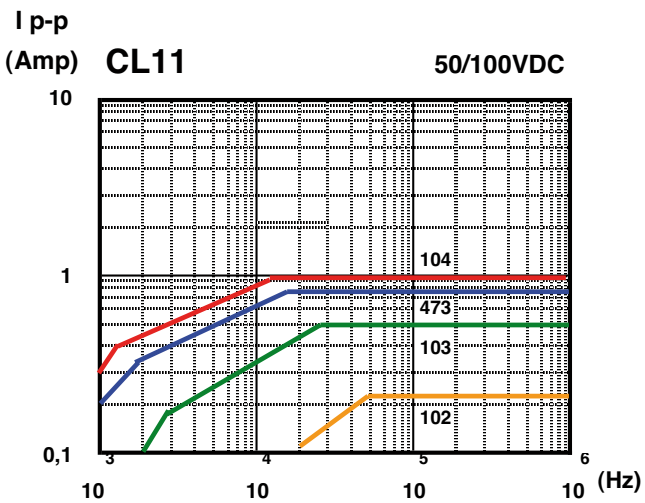
PE

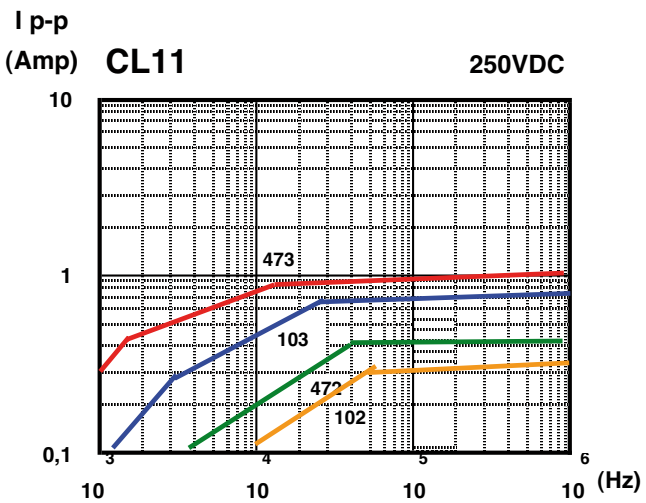




Permissible Current VS Frequency Curve

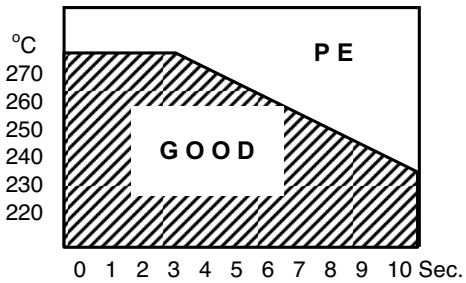
PE

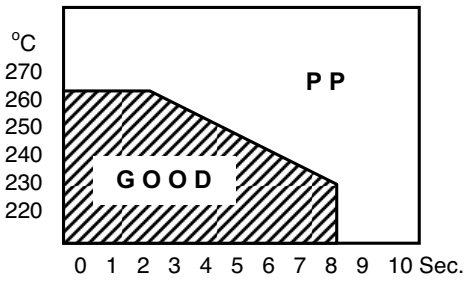




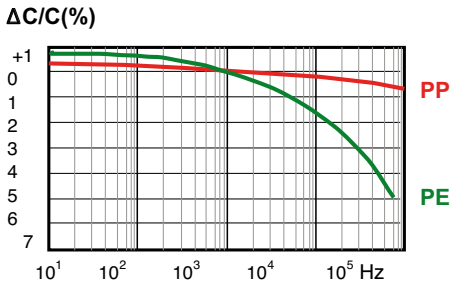
CHARACTERISTICS REFERENCE

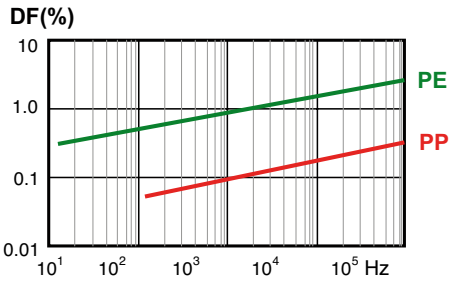
Soldering Temperature VS Time





Frequency Characteristics





Temperature Characteristics