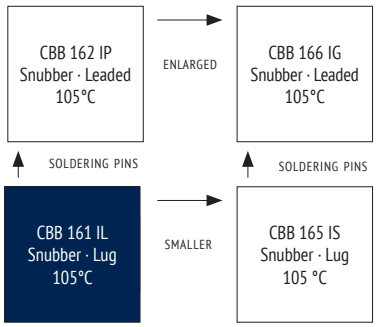
FILM CAPACITORS · **SNUBBER**

CBB **161** IL SERIES

FEATURES

- 105°C
- Very low dissipation factor
- Highest peak pulse capability
- Double-sided metallized electrodes
- Internal series connection
- Metal sprayed contacts for low ESL
- Plates for direct IGBT connection
- Self-healing

OVERVIEW



PRODUCT

APPLICATIONS

- High pulse and high frequency circuits
- IGBT applications

CHARACTERISTICS

ITEM	CHARACTERISTICS
Climatic Category	40/105/56 (IEC 61071)
Operating Temperature	–40 ~ +105 °C ($\Theta_{hotspot}$ ⩽ 105 °C) $\Theta_{hotspot}$ = 85~105°C: See Voltage Derating Diagram
Storage Temperature	–40 ~ +105 °C
Rated Voltage U_{RDC}	700 ~ 2 000 V_{DC}
Capacitance Range	0,2 ~ 7,5 µF
Capacitance Tolerance	±10 % (K), ±5 % (J)
Voltage between Terminals U_{TT}	1,5 * U_{RDC} (20°C, 10s)
Voltage between Terminals & Case U_{TC}	3 000 V_{AC} (20°C, 50 Hz, 10s)
Capacitor Dissipation Factor tan ∂	⩽ 5 * 10^{-4} (20 °C, 1 kHz)
Dielectric Dissipation Factor tan $∂_o$	⩽ 2 * 10^{-4} (20 °C, 1 kHz)
Insulation Resistance R_i*C	⩾ 30 000 MΩ * µF (20 °C, 100 V_{DC}, 1 min)
Max. Overvoltage	Please see IEC 61071
Life Time Expectancy	⩾ 100.000h, failure rate ⩽ 50 FIT (70°C)
Reference Standard	IEC 61071:2007, REACH, RoHS

ENVIRONMENTAL

The products are RoHS, WEEE and REACh compliant.

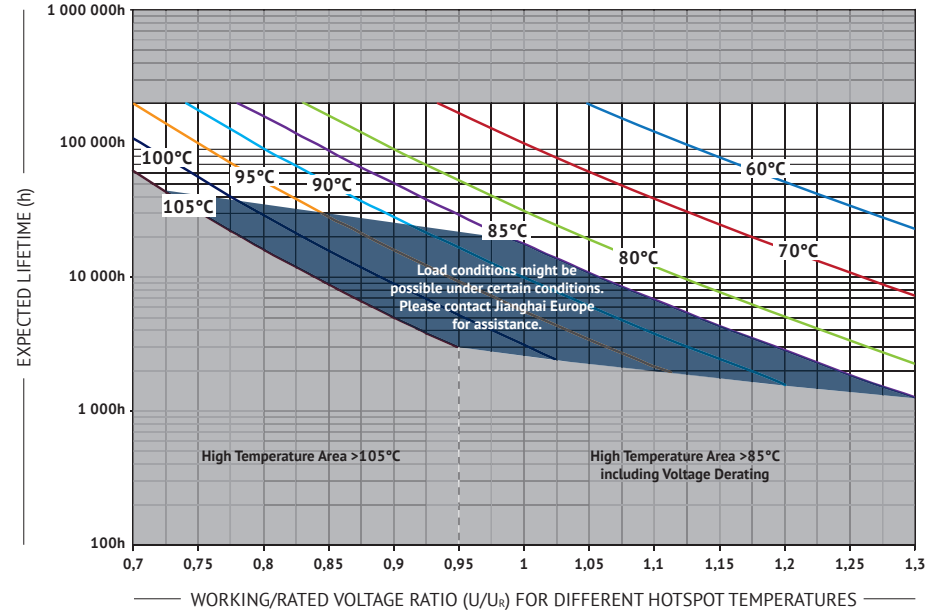
The detailed version please see seperate "Environmental Certificates" document or www.jianghai-europe.com

APPROVALS

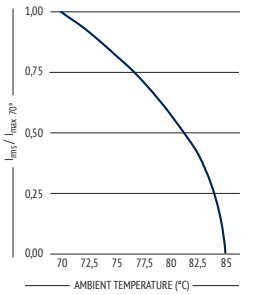
UL94-V0:

Plastic & Compound Mass

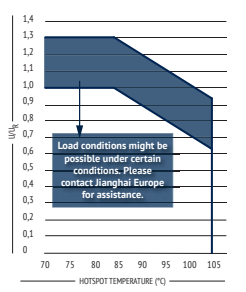
LIFETIME



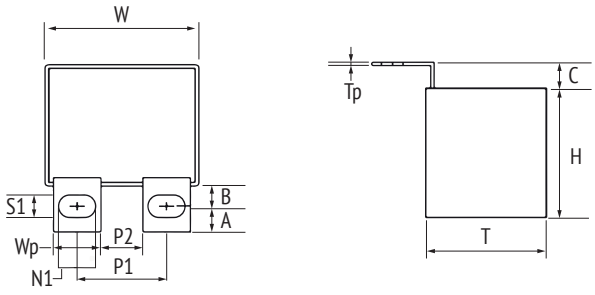
CURRENT DERATING



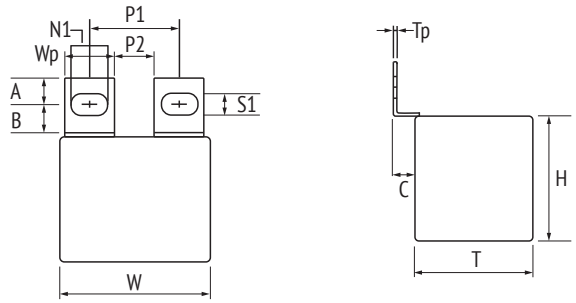
VOLTAGE DERATING



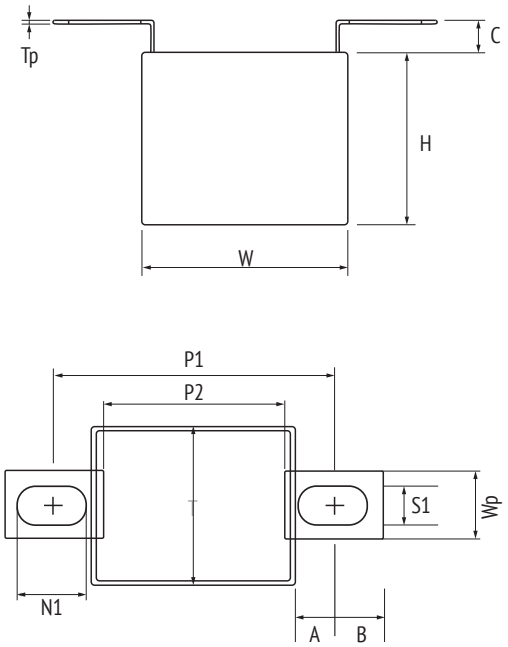
DIMENSIONS



STYLE A



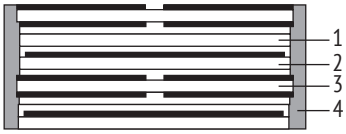
STYLE B

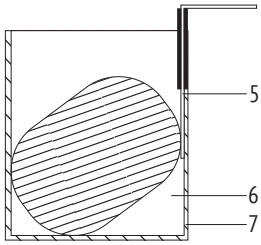


STYLE C

Terminal Style	Length of Case W+1/-1,5 (mm)	Mounting Hole Pitch P1±0,5 (mm)	Gap between Terminals P2±0,5 (mm)	Width Terminal Plate Wp±0,3 (mm)	Thickness Terminal Tp±0,1 (mm)	Distance of Terminal C±1 (mm)	Width of Hole S1±0,1 (mm)	Length of Hole N1±0,3 (mm)	Position of Hole A±0,2 (mm)	Distance of Hole B±0,2 (mm)
Style A/B	42,5	24,0	10,0	14,0	1,0	6,0	M6: 6,5 M8: 8,5	M6: 8,5 M8: 10,5	7,0	7,0
Style A/B	42,5	26,0	12,0	14,0	1,0	6,0	M6: 6,5 M8: 8,5	M6: 8,5 M8: 10,5	7,0	7,0
Style A/B	57,5	24,0	10,0	14,0	1,0	6,0	M6: 6,5 M8: 8,5	M6: 8,5 M8: 10,5	7,0	7,0
Style A/B	57,5	37,0	23,0	14,0	1,0	6,0	M6: 6,5 M8: 8,5	M6: 8,5 M8: 10,5	7,0	7,0
Style C	42,5	60,0	38,0	14,0	1,0	6,0	M8: 8,2	M8: 14	8,5	10,0
Style C	57,5	75,0	53,0	14,0	1,0	6,0	M8: 8,2	M8: 14	8,5	10,0

INTERNAL CONSTRUCTION





NO.	ITEM	MATERIAL
1	Dielectric Film	Polypropylene
2	Single-sided Metallized Film	PP + Al
3	Double-sided Metallized Carrier Film	PET + Al
4	Metal Sprayed Contact	Zn + Sn/Zn
5	Terminal	Sn-coated Cu
6	Potting Compound	Epoxy
7	Case	Flame retardant PBT

MARKING

ORDER CODE

FC	S	3B		IL	105		K		A		FA		40	26	19	1		E 3
Capacitor type	Product shape	DC rated voltage code (V)		Series code	Capacitance Code (µF)		Capacitance tolerance		Plate Style (mm)		Dimension Code (mm)		Pitch P_1 (mm)	Gap P_2 (mm)	Width of plates Wp (mm)	Hole Shape		For internal use
Film Cap. = **FC**	Square box = **S**	700	**2Q**	CBB 161 = **IL**	0,22	**224**	±5%	**J**	Style A	**A**	42,5 x 28 x 24	**FA**	24	**24**	10	**10**	14	**14**	Circular M6	**0**
		850	**K2**		0,33	**334**	±10%	**K**	Style B	**B**	42,5 x 33 x 33	**FB**	26	**26**	12	**12**			Oval M6: 6,5x8,5	**1**
		1000	**3A**		0,47	**474**			Style C	**C**	42,5 x 35,5 x 33,5	**FC**	37	**37**	23	**23**			Circular M8	**2**
		1200	**3B**		0,68	**684**					42,5 x 36 x 24	**FD**	60	**60**	38	**38**			Oval M8: 8,5x10,5	**3**
		1600	**3C**		0,82	**824**					42,5 x 43 x 42	**FE**	75	**75**	53	**53**			Oval M6: 6,5x10,5	**7**
		2000	**3D**		1,0	**105**					42,5 x 45 x 30	**FF**							Oval 9x12	**5**
					1,2	**125**					57,5 x 43,5 x 29,5	**HG**							Circular ø5,5	**A**
					1,5	**155**					57,5 x 45 x 30	**HH**							Circular ø7,0	**C**
					2,0	**205**					57,5 x 45 x 35	**HJ**							Circular ø5,0	**E**
					2,2	**225**					57,5 x 45 x 45	**HK**							Oval 8,5x14,5	**D**
					2,5	**255**					57,5 x 50 x 35	**HL**								
					3,0	**305**					57,5 x 55 x 40	**HM**								
					3,3	**335**												
					4,0	**405**												
					4,7	**475**												
					5,0	**505**												
					6,0	**605**												
					6,8	**685**												
					10,0	**106**												

RATINGS

U_R ≤85°C (V)	C_R (µF)	dV/dt 20°C (V/µs)	$\hat{I}$ (1) (A)	ESR_{typ} 20°C 100kHz (mΩ)	L_S 20°C (nH)	I_{max} 70°C 100kHz (A)	W +1/-1,5 (mm)	H +1/-1,5 (mm)	T +1/-1,5 (mm)	ORDER CODE "#" to be defined, see ordering code table
700 V_{DC} 420 V_{AC} 2Q	1,20	325	390	10	≤20	12,4	42,5	28	24	FCS2QIL125##FA####14#E3
	1,80	325	585	8	≤20	16,8	42,5	36	24	FCS2QIL185##FD####14#E3
	2,20	325	715	7	≤20	18,8	42,5	35,5	33,5	FCS2QIL225##FC####14#E3
	2,50	325	813	6	≤20	20,3	42,5	35,5	33,5	FCS2QIL255##FC####14#E3
	3,00	325	975	5	≤20	22,4	42,5	45	30	FCS2QIL305##FF####14#E3
	4,00	325	1300	4	≤20	25,0	42,5	43	42	FCS2QIL405##FE####14#E3
	4,20	260	1092	3	≤20	26,0	57,5	43,5	29,5	FCS2QIL425##HG####14#E3
	4,50	260	1170	3	≤20	26,0	57,5	45	30	FCS2QIL455##HH####14#E3
	5,00	260	1300	3	≤20	27,0	57,5	45	35	FCS2QIL505##HJ####14#E3
	5,50	260	1430	2	≤20	27,0	57,5	50	35	FCS2QIL555##HL####14#E3
	6,00	260	1560	2	≤20	28,0	57,5	45	45	FCS2QIL605##HK####14#E3
	7,50	260	1950	2	≤20	30,0	57,5	55	40	FCS2QIL755##HM####14#E3
850 V_{DC} 450 V_{AC} K2	0,47	650	306	10	≤20	11,5	42,5	28	24	FCSK2IL474##FA####14#E3
	0,70	650	455	10	≤20	15,3	42,5	36	24	FCSK2IL704##FD####14#E3
	0,80	650	520	10	≤20	11,8	42,5	28	24	FCSK2IL804##FA####14#E3
		650	520	9	≤20	17,2	42,5	35,5	33,5	FCSK2IL804##FC####14#E3
	1,00	650	650	8	≤20	18,6	42,5	35,5	33,5	FCSK2IL105##FC####14#E3
	1,20	650	780	9	≤20	15,6	42,5	36	24	FCSK2IL125##FD####14#E3
		650	780	7	≤20	20,6	42,5	45	30	FCSK2IL125##FF####14#E3
	1,50	650	975	8	≤20	17,6	42,5	35,5	33,5	FCSK2IL155##FC####14#E3
		650	975	6	≤20	22,0	42,5	43	42	FCSK2IL155##FE####14#E3
		455	683	6	≤20	22,0	57,5	43,5	29,5	FCSK2IL155##HG####14#E3
	1,80	650	1170	7	≤20	19,8	42,5	35,5	33,5	FCSK2IL185##FC####14#E3
		455	819	6	≤20	23,0	57,5	45	30	FCSK2IL185##HH####14#E3
	2,00	455	910	5	≤20	24,0	57,5	45	35	FCSK2IL205##HJ####14#E3
	2,20	650	1430	6	≤20	21,5	42,5	45	30	FCSK2IL225##FF####14#E3
		455	1001	5	≤20	24,0	57,5	50	35	FCSK2IL225##HL####14#E3
	2,50	455	1138	4	≤20	25,0	57,5	45	45	FCSK2IL255##HK####14#E3
	2,80	650	1820	5	≤20	24,0	42,5	43	42	FCSK2IL285##FE####14#E3
	3,00	455	1365	4	≤20	24,0	57,5	43,5	29,5	FCSK2IL305##HG####14#E3
		455	1365	4	≤20	25,0	57,5	45	30	FCSK2IL305##HH####14#E3
		455	1365	4	≤20	26,0	57,5	55	40	FCSK2IL305##HM####14#E3
	3,50	455	1592	4	≤20	25,0	57,5	45	35	FCSK2IL355##HJ####14#E3
	4,50	455	2047	3	≤20	27,0	57,5	50	35	FCSK2IL455##HL####14#E3
	5,00	455	2275	3	≤20	27,0	57,5	45	45	FCSK2IL505##HK####14#E3
		455	2275	2	≤20	29,0	57,5	55	40	FCSK2IL505##HM####14#E3
1000 V_{DC} 500 V_{AC} 3A	0,65	500	325	10	≤20	11,6	42,5	28	24	FCS3AIL654##FA####14#E3
	1,00	500	500	9	≤20	15,5	42,5	36	24	FCS3AIL105##FD####14#E3
	1,20	500	600	8	≤20	17,5	42,5	35,5	33,5	FCS3AIL125##FC####14#E3
	1,40	500	700	7	≤20	18,8	42,5	35,5	33,5	FCS3AIL145##FC####14#E3
	1,80	500	900	6	≤20	21,0	42,5	45	30	FCS3AIL185##FF####14#E3
	2,20	500	1100	5	≤20	23,0	42,5	43	42	FCS3AIL225##FE####14#E3
		350	770	6	≤20	23,0	57,5	43,5	29,5	FCS3AIL225##HG####14#E3
	2,50	350	875	5	≤20	24,0	57,5	45	30	FCS3AIL255##HH####14#E3
	3,00	350	1050	5	≤20	24,0	57,5	45	35	FCS3AIL305##HJ####14#E3
	3,30	350	1155	4	≤20	25,0	57,5	50	35	FCS3AIL335##HL####14#E3
	3,50	350	1225	4	≤20	25,0	57,5	45	45	FCS3AIL355##HK####14#E3
	4,50	350	1575	4	≤20	28,0	57,5	55	40	FCS3AIL455##HM####14#E3
1200 V_{DC} 600 V_{AC} 3B	0,33	800	264	11	≤20	11,4	42,5	28	24	FCS3BIL334##FA####14#E3
	0,47	800	376	10	≤20	11,5	42,5	28	24	FCS3BIL474##FA####14#E3
	0,50	800	400	10	≤20	15,0	42,5	36	24	FCS3BIL504##FD####14#E3
	0,60	800	480	9	≤20	16,8	42,5	35,5	33,5	FCS3BIL604##FC####14#E3
	0,70	800	560	9	≤20	18,4	42,5	35,5	33,5	FCS3BIL704##FC####14#E3
		800	560	10	≤20	15,3	42,5	36	24	FCS3BIL704##FD####14#E3
	0,80	800	640	9	≤20	17,2	42,5	35,5	33,5	FCS3BIL804##FC####14#E3
		800	640	8	≤20	20,5	42,5	45	30	FCS3BIL804##FF####14#E3
	1,00	800	800	8	≤20	18,6	42,5	35,5	33,5	FCS3BIL105##FC####14#E3
		800	800	7	≤20	21,0	42,5	43	42	FCS3BIL105##FE####14#E3
		560	560	6	≤20	22,0	57,5	43,5	29,5	FCS3BIL105##HG####14#E3
	1,20	800	960	7	≤20	20,6	42,5	45	30	FCS3BIL125##FF####14#E3
		560	672	6	≤20	22,0	57,5	45	30	FCS3BIL125##HH####14#E3

U_R ≤85°C (V)	C_R (µF)	dV/dt 20°C (V/µs)	$\hat{I}$ (1) (A)	ESR_{typ} 20°C 100kHz (mΩ)	L_S 20°C (nH)	I_{max} 70°C 100kHz (A)	W +1/-1,5 (mm)	H +1/-1,5 (mm)	T +1/-1,5 (mm)	ORDER CODE "#" to be defined, see ordering code table
1200 V_{DC} 600 V_{AC} 3B	1,40	560	784	5	≤20	23,0	57,5	45	35	FCS3BIL145##HJ####14#E3
	1,50	800	1200	6	≤20	22,0	42,5	43	42	FCS3BIL155##FE####14#E3
		560	840	6	≤20	22,0	57,5	43,5	29,5	FCS3BIL155##HG####14#E3
	1,60	560	896	5	≤20	23,0	57,5	50	35	FCS3BIL165##HL####14#E3
	1,70	560	952	4	≤20	24,0	57,5	45	45	FCS3BIL175##HK####14#E3
	1,80	560	1008	6	≤20	23,0	57,5	45	30	FCS3BIL185##HH####14#E3
	2,00	560	1120	5	≤20	24,0	57,5	45	35	FCS3BIL205##HJ####14#E3
		560	1120	4	≤20	25,0	57,5	55	40	FCS3BIL205##HM####14#E3
	2,20	560	1232	5	≤20	24,0	57,5	50	35	FCS3BIL225##HL####14#E3
	2,50	560	1400	4	≤20	25,0	57,5	45	45	FCS3BIL255##HK####14#E3
	3,00	560	1680	4	≤20	26,0	57,5	55	40	FCS3BIL305##HM####14#E3
1600 V_{DC} 650 V_{AC} 3C	0,33	800	264	11	≤20	11,4	42,5	28	24	FCS3CIL334##FA####14#E3
	0,50	800	400	10	≤20	15,0	42,5	36	24	FCS3CIL504##FD####14#E3
	0,60	800	480	9	≤20	16,8	42,5	35,5	33,5	FCS3CIL604##FC####14#E3
	0,70	800	560	9	≤20	18,4	42,5	35,5	33,5	FCS3CIL704##FC####14#E3
	0,80	800	640	8	≤20	20,5	42,5	45	30	FCS3CIL804##FF####14#E3
	1,00	800	800	7	≤20	21,0	42,5	43	42	FCS3CIL105##FE####14#E3
		560	560	6	≤20	22,0	57,5	43,5	29,5	FCS3CIL105##HG####14#E3
	1,20	560	672	6	≤20	22,0	57,5	45	30	FCS3CIL125##HH####14#E3
	1,40	560	784	5	≤20	23,0	57,5	45	35	FCS3CIL145##HJ####14#E3
	1,60	560	896	5	≤20	23,0	57,5	50	35	FCS3CIL165##HL####14#E3
	1,70	560	952	4	≤20	24,0	57,5	45	45	FCS3CIL175##HK####14#E3
	2,00	560	1120	4	≤20	25,0	57,5	55	40	FCS3CIL205##HM####14#E3
2000 V_{DC} 700 V_{AC} 3D	0,20	1000	200	11	≤20	11,3	42,5	28	24	FCS3DIL204##FA####14#E3
	0,30	1000	300	11	≤20	14,9	42,5	36	24	FCS3DIL304##FD####14#E3
	0,39	1000	390	10	≤20	16,6	42,5	35,5	33,5	FCS3DIL394##FC####14#E3
	0,42	1000	420	9	≤20	18,2	42,5	35,5	33,5	FCS3DIL424##FC####14#E3
	0,56	1000	560	9	≤20	20,1	42,5	45	30	FCS3DIL564##FF####14#E3
	0,70	1000	700	8	≤20	20,0	42,5	43	42	FCS3DIL704##FE####14#E3
	0,75	720	540	8	≤20	21,0	57,5	43,5	29,5	FCS3DIL754##HG####14#E3
	0,82	720	590	7	≤20	21,0	57,5	45	30	FCS3DIL824##HH####14#E3
	0,90	720	648	6	≤20	22,0	57,5	45	35	FCS3DIL904##HJ####14#E3
	1,00	720	720	6	≤20	22,0	57,5	50	35	FCS3DIL105##HL####14#E3
	1,20	720	864	5	≤20	22,0	57,5	45	45	FCS3DIL125##HK####14#E3
	1,40	720	1008	4	≤20	24,0	57,5	55	40	FCS3DIL145##HM####14#E3

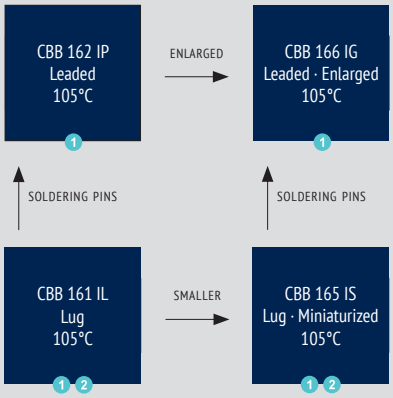
(1) Maximum permissible peak current

RATINGS

SNUBBER

APPLICATIONS:

1. High pulse an high frequency circuits
2. IGBT mounting



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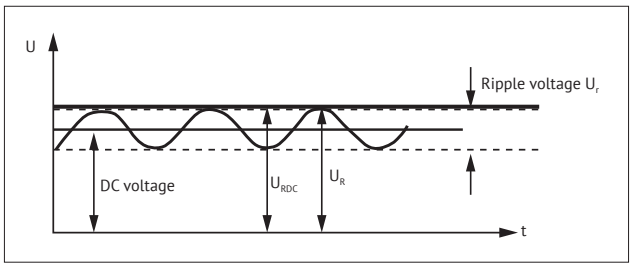
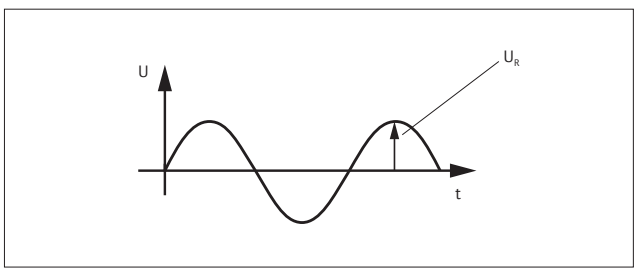
NOMINAL CAPACITANCE C_R Nominal Capacitance is defined at 20°C and 50Hz (120Hz).

RATED VOLTAGE U_R

DC Capacitors: U_{RDC} Maximum operating peak voltage of either polarity but of a non-reversing type waveform, for which the capacitor has been designed, for continuous operation. The maximum DC voltage is the sum of the DC voltage and peak AC voltage.



AC Capacitors: U_{RAC} Maximum operating peak recurrent voltage of either polarity of a reversing type waveform for which the capacitor has been designed.



OPERATING VOLTAGE The plastic film capacitor varies in the maximum applicable voltage depending on the applied voltage waveform, current waveform, frequency, ambient temperature (capacitor surface temperature), capacitance value, etc. Be sure to use capacitors within the specified values by checking the voltage waveform, current waveform, and frequency applied to them (In the application of high frequency, the permissible voltage varies with the type of the capacitor. Refer to the specification for details. See also Voltage Derating tables.).

NON-RECURRENT SURGE VOLTAGE U_S Peak voltage induced by a switching or any other disturbance of the system which is allowed for a limited number of times and for durations shorter than the basic period.

- Maximum duration: 50 ms / pulse
- Maximum number of occurrences: 1000 (during load)

MAXIMUM RATE OF VOLTAGE RISE dV/dt Maximum permissible repetitive rate of voltage rise of the operational voltage.

OPERATING CURRENT Due to the fact that the dissipation factor of the capacitor is greater than zero, heat will be generated in any application where alternating currents or pulses occur. The resulting internal temperature rise may cause a severe deterioration of the capacitor's withstanding voltage, or may lead to a breakdown (even smoke or fire may result). Therefore, the safe use of capacitor must be within the rated voltage (or category voltage) and the permissible current ranges. The rated current must be considered by dividing into pulse current (peak current) and continuous current (rms current) depending on the break down mode, and when using, should make sure the both currents are within the permissible range.

MAXIMUM CURRENT I_{MAX} Maximum Rms Current for continuous operation, see Current Derating tables.

MAXIMUM PEAK CURRENT $\hat{I}$ Maximum permissible repetitive peak current which can occur during continuous operation.

$\hat{I} = C_R * (dV/dt)$

MAXIMUM SURGE CURRENT $\hat{I}_S$

- Maximum duration: 50 ms / pulse
- Maximum number of occurrences: 1000 (during load)

SERIES RESISTANCE R_S Effective ohmic resistance of the conducting elements of the capacitor.

EQUIVALENT SERIES RESISTANCE ESR The ESR represents all ohmic resistances: $ESR = \tan\delta/(\omega C) = R_s + \tan\delta_o/(\omega C)$

DIELECTRIC DISSIPATION FACTOR $\tan\delta_0$ Constant dissipation factor of the dielectric material.

LOSS FACTOR $\tan\delta$ The dissipation factor is the ratio between the reactive and effective power.

HOTSPOT TEMPERATURE $\Theta_{HOTSPOT}$ Temperature at the hottest position inside the capacitor. $\Theta_{hotspot} = \Theta_{ambient} + P_{loss} * R_{th}$

R_{th}: thermal resistance, P_{loss}: Powerloss $P_{loss} = ESR * I_{rms}^2$,

$\Theta_{ambient}$ = ambient temperature

CHARGING AND DISCHARGING Because the charging and discharging current of capacitor is obtained by the product of voltage rise rate (dV/dt) and capacitance, low voltage charging and discharging may also cause deterioration of capacitor such as

shorting and open due to sudden charging and discharging current. When charging and discharging, pass through a resistance of 20Ω/V to 1000Ω/V or more to limit the current. When connecting multiple film capacitors in parallel in withstand voltage test or life test, connect a resistance of 20Ω/V to1000Ω/V or more in series to each capacitor. In addition, **capacitors must be discharged via a resistor before handling**. Because the capacitors do not have any discharge resistors built-in, there is a risk of residual voltages and electric energy contents that might be dangerous.

TEMPERATURE RANGE AND ALTITUDE Use film capacitors only within the specified operating temperature range. The altitude and barometic pressure have an impact on the functionality of the capacitor. Max. Altitude: 2000m above sea level.

ALTITUDE/m	CURRENT DERATING COEFFICIENT
⩽ 2 000	1,00
2 500	0,95
3 000	0,90
3 500	0,85
4 000	0,80
4 500	0,75
5 000	0,70

EXPECTED LIFETIME The expected lifetime of the capacitor depends on the applied voltage and the hot spot temperature during operation. For capacitors applied in different situations, the obtainable average service lives are different. Please refer to the life time diagrams of each series.

FAILURE RATE λ (FAILURE IN TIME FIT) 1 FIT = $1/10^{-9}$h (1 failure per 10^9 components test hours), λ=r/(nt)
r= number of failure, n= test number, t= test time

INSULATION VOLTAGE U_i Rms value of AC voltage designed for the insulation between terminals of the capacitor to case or earth. The insulation voltage is equal to the rated voltage of the capacitor, divided by , unless otherwise specified.

INSULATION RESISTANCE R_i Ration between applied DC Voltage and resulting leakage current after 1 minute of charge. It is defined in MΩ. Typically it is given as time constant R_i*C [μF] in seconds.

VOLTAGE BETWEEN TERMINALS U_{TT} Voltage between terminals.

VOLTAGE BETWEEN TERMINALS AND CASE U_{TC} Voltage between terminals and case.

BUZZING NOISE Any buzzing noise produced by a capacitor is caused by the vibration of the film due to the Coulomb force that is generated between the electrodes with opposite poles. It is of no harm to the capacitor.

DIELECTRICAL ABSORPTION Due to the dielectrical absorption voltages may occure between the terminals. Please discharge the capacitor before usage.

SURFACE OVER TEMPERATURE $\Delta\theta_{case}$ When current continuously flow through the capacitor, the temperature inside the capacitor will rise induced by dissipated heat. If the temperature exceeds the maximum allowed hot-spot temperature, it might cause a short circuit or fire. The limits described in the catalogue must not be exceeded and it's necessary to check the temperature on the capacitor's surface in operation.

FLAME RETARDATION Although flame retarding PU resin or plastic case material is used in the coating or encapsulation of plastic film capacitors, continuous exposure to high temperature ambient or fire will break the coating layer or plastic case of the capacitor, and may lead to melting and ignition of the capacitor element.

HUMID AMBIENT If used for a long time in a humid ambient, the capacitor might absorb humidity and oxidize the electrodes causing damage to the capacitor. In case of AC application, high humidity would increase the corona effect. This phenomenon causes a drop in capacitance and an increase of capacitor losses. Humidity needs to be avoided. If needed please inform Jianghai separately for technical adopted components.

STORAGE CONDITIONS 1) Capacitors must not be stored in corrosive atmospheres, particularly not when chlorides, sulfides, alkali, acids, lye, salts, organic solvents or similar substances are present. 2) It must not be stored in high temperature and/or high humidity environments. The following storage conditions must be kept (applicable only for storage in the original package): Temperature: ⩽ 35 °C; Humidity: ⩽ 80% RH, no dew allowed on the capacitor; Storage time: ⩽ 24 months

MOUNTING Other devices, which are mounted near the capacitor, should not touch the capacitor. Additional heat coming from other components near the capacitor may reduce the lifetime of the capacitor. Do never attempt to bend or twist the capacitor after mounting and avoid any mechanical stress on the terminals. Never exceed the max. permissible torques when tightening the terminal screws or the mounting bolt's cap nuts.

CAUTION & WARNINGS Do not touch the terminals of capacitors. The energy stored in capacitors may be lethal. Ensure that the operating environment of the equipment into which the capacitor has been built, is within the specified conditions. Capacitors must not be used in corrosive atmospheres, particularly not when chlorides, sulfides, alkali, acid, lye, salts, organic solvents or similar substances are present. Electrical or mechanical misapplication may be hazardous. Personal injury or property damage may result from bursting of the capacitors or from expulsion of melted material.

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