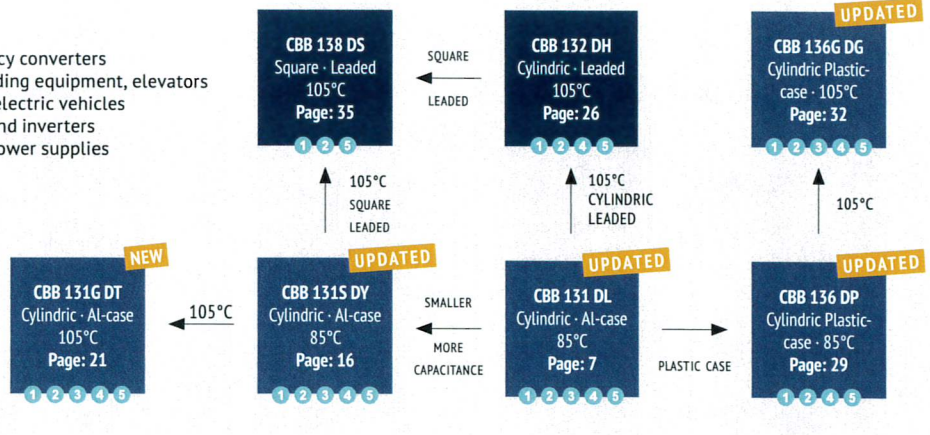


DC-LINK

APPLICATIONS:

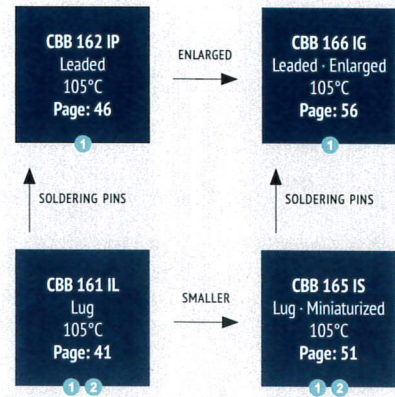
- 1 High power frequency converters
- 2 Motion control, welding equipment, elevators
- 3 Electric and hybrid electric vehicles
- 4 Photovoltaic and wind inverters
- 5 Industry high-end power supplies



SNUBBER

APPLICATIONS:

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



MODULES

APPLICATIONS:

- 1 High power frequency converters
- 2 Electric and hybrid electric vehicles
- 3 Electric & hybrid electric vehicles, traction & trains

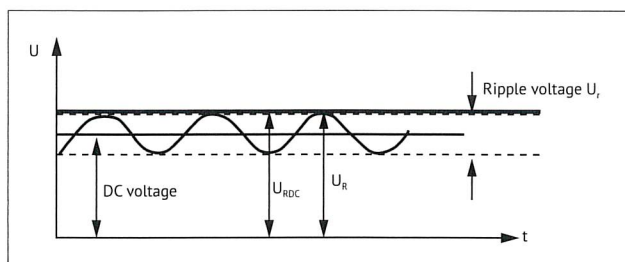


WARRANTY The information contained in this datasheet does neither form part of any quotation nor of a contract, it is believed to be accurate, reliable and up to date. Quality data are based on the statistical evaluations of a large quantity of parts and do not constitute a guarantee in a legal sense. However, agreement on these specifications does mean that the customer may claim for replacement of individual defective capacitors within the terms of delivery. We cannot assume any liability beyond the replacement of defective components. This applies in particular to any further consequences of component failure. Furthermore it must be taken into consideration that the figures stated for lifetime and failure rates refer to the average production status and are therefore to be understood as mean values (statistical expectations) for a large number of delivery lots of identical capacitors. These figures are based on application experience and data obtained from preceding tests under normal conditions, or – for purpose of accelerated aging – more severe conditions. JIANGHAI reserves the right to change these specifications without prior notice. Any application information given is advisory and does not form part of any specification. The products are not primarily designed for use in life supporting applications, devices or systems where malfunction of these products can reasonably be expected to result in personal injury. JIANGHAI customers using or selling these products for use in such applications without prior written consent of JIANGHAI do so at their own risk and agree fully to indemnify JIANGHAI for any damage resulting from such improper use or sale. This version of the datasheet supersedes all previous versions.

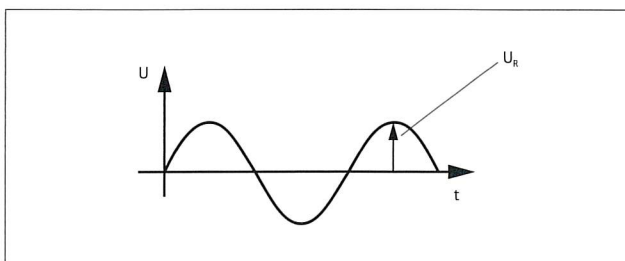
NOMINAL CAPACITANCE C_R Nominal Capacitance is defined at 20°C and 50Hz (120Hz).

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

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: $ESR = \tan\delta/(\omega C) = R_S + \tan\delta/(\omega C)$

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. $\Theta_{hotspot} = \Theta_{ambient} + P_{loss} \cdot R_{th}$

R_{th} : thermal resistance, P_{loss} : Powerloss $P_{loss} = ESR \cdot I_{rms}^2$, $\Theta_{ambient}$ = 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 to 1000Ω/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 barometric pressure have an impact on the functionality of the capacitor. Max. Altitude: 2000m above sea level.

ALTITUDE/m	VOLTAGE 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 = 1/10⁹h (1 failure per 10⁹ components test hours), $\lambda = r/(nt)$

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 $R_i \cdot C$ [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.

SURFACE OVER TEMPERATURE $\Delta\theta_{\text{case}}$ 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: $\leq 80\%$ 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.

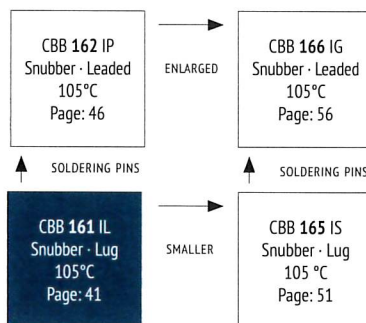
CAUTION & WARNINGS Do not touch the terminals of capacitors. The energy stored in capacitors may be lethal. Ensure that the operating environment of the equipment into which the capacitor has been built, is within the specified conditions. Capacitors must not be used in corrosive atmospheres, particularly 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.

Jianghai Europe GmbH, v4 0922

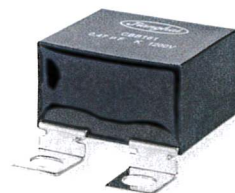
FEATURES

- 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 ($\Theta_{\text{hotspot}} \leq 105$ °C) $\Theta_{\text{hotspot}} = 85-105$ °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}	$1,5 \cdot U_{\text{RDC}}$ (20°C, 10s)
Voltage between Terminals & Case U_{TC}	3.000 V_{AC} (20°C, 50 Hz, 10s)
Capacitor Dissipation Factor $\tan \delta$	$\leq 5 \cdot 10^{-4}$ (20 °C, 1 kHz)
Dielectric Dissipation Factor $\tan \delta_0$	$\leq 2 \cdot 10^{-4}$ (20 °C, 1 kHz)
Insulation Resistance R_i °C	$\geq 10.000 \text{ M}\Omega \cdot \mu\text{F}$ (20 °C, 100 V_{DC} , 1 min)
Max. Overvoltage	Please see IEC 61071
Life Time Expectancy	$\geq 100.000\text{h}$, failure rate $\leq 50 \text{ FIT}$ (70°C)
Reference Standard	IEC 61071:2007, REACH, RoHS

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant.

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

APPROVALS

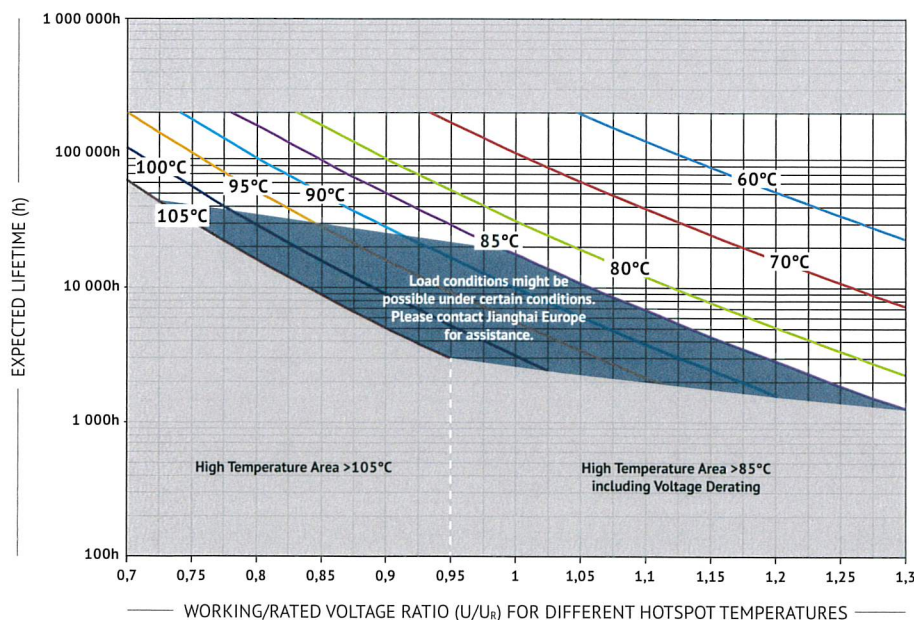
UL94-V0:

Plastic & Compound Mass

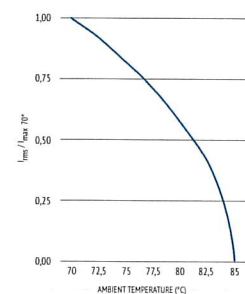
SNUBBER

LIFETIME

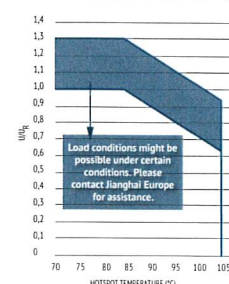
END OF LIFE 3% CAPACITANCE LOSS



CURRENT DERATING

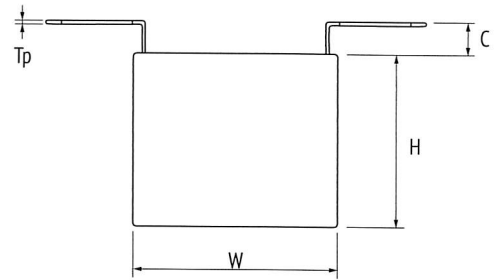
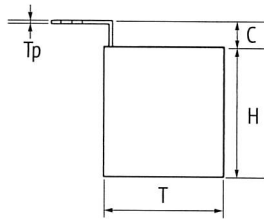
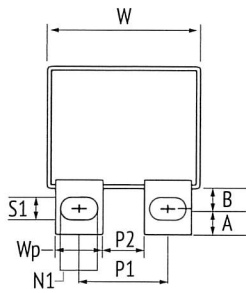


VOLTAGE DERATING

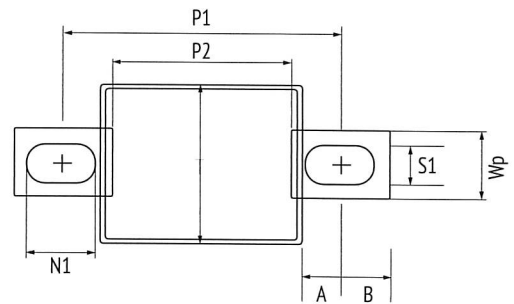
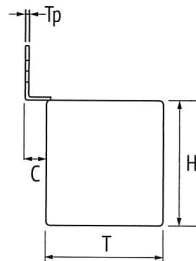
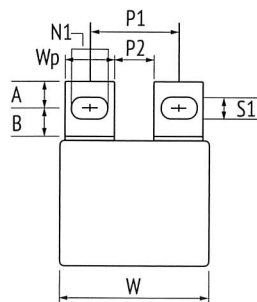




DIMENSIONS



STYLE A



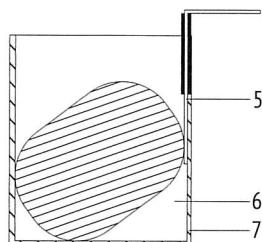
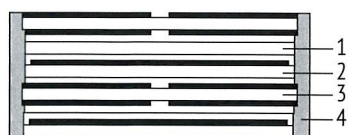
STYLE B

STYLE C

Terminal Style	Length of Case $W \pm 1/-1,5$ (mm)	Mounting Hole Pitch $P1 \pm 0,5$ (mm)	Gap between Terminals $P2 \pm 0,5$ (mm)	Width Terminal Plate $Wp \pm 0,3$ (mm)	Thickness Terminal $Tp \pm 0,1$ (mm)	Distance of Terminal $C \pm 1$ (mm)	Width of Hole $S1 \pm 0,1$ (mm)	Length of Hole $N1 \pm 0,3$ (mm)	Position of Hole $A \pm 0,2$ (mm)	Distance of Hole $B \pm 0,2$ (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

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INTERNAL CONSTRUCTION



MARKING



CBB 161
1μF K 1200V
G03F12

BRAND
PRODUCT SERIES
CAPACITANCE, TOLERANCE AND RATED VOLTAGE
DATE CODE

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

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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	C _R	dV/dt	$\bar{i}^{(1)}$	ESR _{yp}	L _S	I _{max}	W	H	T	ORDER CODE
≤85°C		20°C		20°C	20°C	70°C	+1/-1,5	+1/-1,5	+1/-1,5	"#" to be defined, see ordering code table
(V)	(μF)	(V/μS)	(A)	(mΩ)	(nH)	(A)	(mm)	(mm)	(mm)	
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	33	33	FCS2QIL225##FB###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
	0,80	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
	1,20	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
	1,50	650	975	6	≤20	22,0	42,5	43	42	FCSK2IL155##FE###14#E3
	1,50	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
	1,80	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
	2,20	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
	3,00	455	1365	4	≤20	25,0	57,5	45	30	FCSK2IL305##HH###14#E3
	3,00	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	
5,00	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
	2,20	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
	0,70	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
	0,80	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
	1,00	800	800	7	≤20	21,0	42,5	43	42	FCS3BIL105##FE###14#E3
	1,00	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
	1,20	560	672	6	≤20	22,0	57,5	45	30	FCS3BIL125##HH###14#E3

SNUBBER

(1) Maximum permissible peak current

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U_R	C_R	dV/dt	$\bar{I}^{(1)}$	ESR_{typ}	L_S	I_{max}	W	H	T	ORDER CODE
$\leq 85^\circ C$		$20^\circ C$		$20^\circ C$	$20^\circ C$	$70^\circ C$	+1/-1,5	+1/-1,5	+1/-1,5	"#" to be defined, see ordering code table
(V)	(μF)	(V/ μs)	(A)	(m Ω)	(nH)	(A)	(mm)	(mm)	(mm)	
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
	1,50	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
	2,00	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
	1,00	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	

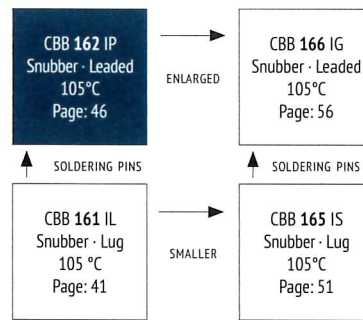
(1) Maximum permissible peak current

SNUBBER

FEATURES

- Very low dissipation factor
- Highest peak pulse capability
- Design for Snubber Application
- Self-healing
- Soldering Terminal

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 ($\theta_{hotspot} \leq 105$ °C) $\theta_{hotspot} = 85-105$ °C: See Voltage Derating Diagram
Storage Temperature	-40 ~ +105 °C
Rated Voltage U_{RDC}	630 ~ 2.000 V_{DC}
Capacitance Range	0,001 ~ 1,8 μF
Capacitance Tolerance	± 10 % (K), ± 5 % (J)
Voltage between Terminals U_{TT}	$1,5 \cdot U_{RDC}$ (20 °C, 10s)
Voltage between Terminals & Case U_{TC}	$\geq 3.000 V_{AC}$ (20 °C, 50 Hz, 10s)
Capacitor Dissipation Factor $\tan \delta$	$\leq 5 \cdot 10^{-4}$ (20 °C, 1 kHz)
Dielectric Dissipation Factor $\tan \delta_e$	$\leq 2 \cdot 10^{-4}$ (20 °C, 1 kHz)
Insulation Resistance R_i °C	$\geq 30.000 M\Omega \cdot \mu F$ (20 °C, 100 V_{DC} , 1 min)
Max. Overvoltage	Please see IEC 61071
Life Time Expectancy	$\geq 100.000h$, failure rate ≤ 100 FIT (70 °C)
Reference Standard	IEC 61071:2007

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant.

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

APPROVALS

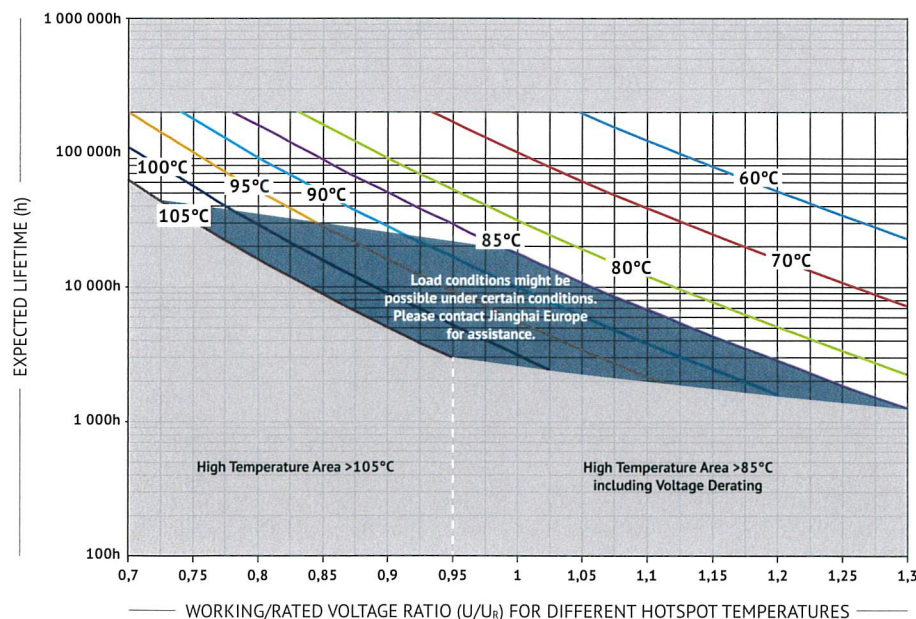
UL94-V0:

Plastic & Compound Mass

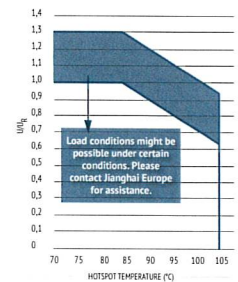
SNUBBER

LIFETIME

END OF LIFE 3% CAPACITANCE LOSS

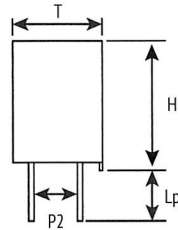
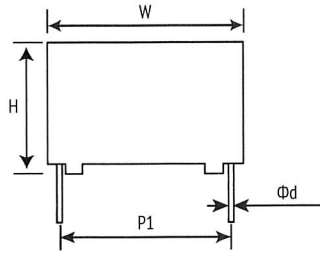


VOLTAGE DERATING

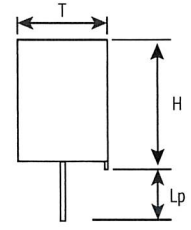
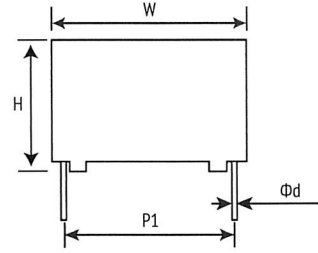


DIMENSIONS

4 PIN TYPE

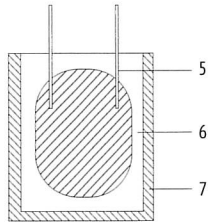


2 PIN TYPE



Lp = 5,0 ±1mm · other styles on request

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



CBB 162

1μF K 1200V

G08F45

BRAND

PRODUCT SERIES

CAPACITANCE, TOLERANCE AND RATED VOLTAGE

DATE CODE

ORDER CODE

FC	S	3B	IP	105	K	A	FA	37	20	C	E 3									
Capacitor type	Product shape	DC rated voltage code (V)	Series code	Capacitance Code (μF)	Capacitance tolerance	Pin Style (mm)	Dimension Code (mm) W x H x T ±1,0 ±1,0 ±1,0	Pitch P ₁ (mm)	Pitch P ₂ (mm)	Leadwire Diameter Ød	For internal use									
Film Cap. = FC	Square box = S	630	J2	CBB 162 = IP	0,68	684	±5%	J	4 Pin Lp = 8mm	K	13 x 9 x 4	C2	10	10	-	00	0,6	A		
		1000	3A		0,82	824	±10%	K	4 Pin Lp = 5mm	A	13 x 11 x 5	C4	15	15	5,1	05	0,8	B		
		1200	3B		1,0	105			4 Pin Lp = 4,5mm	L	13 x 12 x 6	C5	22,5	22	10,2	10	1,0	C		
		1600	3C		1,2	125			4 Pin Lp = 4mm	S	13 x 13 x 7	C8	27,5	27	12,7	12	1,2	D		
		2000	3D		2,0	205			4 Pin Lp = 3,5mm	J	18 x 11 x 5	E2			20,3	20	0,5	E		
					5,0	505			2 Pin long leads (-20mm)	C	18 x 12 x 6	E5								
									2 Pin Lp = 5mm	B	18 x 13,5 x 7,5	E7								
									2 Pin Lp = 4,5mm	T	18 x 14,5 x 8,5	E8								
									2 Pin Lp = 4,0mm	M	18 x 16 x 10	EC								
									2 Pin Lp = 3,5mm	U	18 x 19 x 11	EG								
									2 Pin Lp = 3,2mm	V	26,5 x 16,5 x 7	B2								
											26,5 x 17 x 8,5	B3								
											26,5 x 19 x 10	B4								
											26,5 x 20 x 11	B5								
											26,5 x 23 x 13	B6								
								32 x 20 x 11	I4											
								32 x 22 x 13	I7											
								32 x 24,5 x 13	I8											
								32 x 28 x 14	IC											
								32 x 33 x 18	IF											
								32 x 37 x 22	II											

RATINGS

U _R	C _R	dV/dt	I ⁽¹⁾	W	H	T	P ₁	P ₂	ød	ORDER CODE
≤85°C				+1/-1,5	+1/-1,5	+1/-1,5	±0,5	±0,5	±0,05	"#" to be defined, see ordering code table
(V)	(µF)	(V/µF)	(A)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
630 V _{DC} 420 V _{AC} J2	0,0039	3000	11,7	13	9	4	10	-	0,6	FCSJ2IP392##C21000AE3
	0,0047	3000	14,1	13	9	4	10	-	0,6	FCSJ2IP472##C21000AE3
	0,0056	3000	16,8	13	9	4	10	-	0,6	FCSJ2IP562##C21000AE3
	0,0068	3000	20,4	13	9	4	10	-	0,6	FCSJ2IP682##C21000AE3
	0,0082	3000	24,6	13	9	4	10	-	0,6	FCSJ2IP822##C21000AE3
	0,010	3000	30,0	13	11	5	10	-	0,6	FCSJ2IP103##C41000AE3
	0,010	2500	25,0	18	11	5	15	-	0,8	FCSJ2IP103##E21500BE3
	0,012	2500	30,0	18	11	5	15	-	0,8	FCSJ2IP123##E21500BE3
	0,012	3000	36,0	13	11	5	10	-	0,6	FCSJ2IP123##C41000AE3
	0,015	2500	37,5	18	11	5	15	-	0,8	FCSJ2IP153##E21500BE3
	0,015	3000	45,0	13	12	6	10	-	0,6	FCSJ2IP153##C51000AE3
	0,018	2500	45,0	18	11	5	15	-	0,8	FCSJ2IP183##E21500BE3
	0,018	3000	54,0	13	12	6	10	-	0,6	FCSJ2IP183##C51000AE3
	0,020	2500	50,0	18	11	5	15	-	0,8	FCSJ2IP203##E21500BE3
	0,020	3000	60,0	13	13	7	10	-	0,6	FCSJ2IP203##C81000AE3
	0,022	3000	66,0	13	13	7	10	-	0,6	FCSJ2IP223##C81000AE3
	0,022	2500	55,0	18	11	5	15	-	0,8	FCSJ2IP223##E21500BE3
	0,027	2500	67,5	18	12	6	15	-	0,8	FCSJ2IP273##E51500BE3
	0,033	2500	82,5	18	12	6	15	-	0,8	FCSJ2IP333##E51500BE3
	0,039	2500	97,5	18	12	6	15	-	0,8	FCSJ2IP393##E51500BE3
	0,047	2500	117	18	13,5	7,5	15	-	0,8	FCSJ2IP473##E71500BE3
	0,056	2500	140	18	13,5	7,5	15	-	0,8	FCSJ2IP563##E71500BE3
	0,068	2500	170	18	14,5	8,5	15	-	0,8	FCSJ2IP683##E81500BE3
	0,082	2500	205	18	16	10	15	-	0,8	FCSJ2IP823##EC1500BE3
	0,10	2500	250	18	16	10	15	-	0,8	FCSJ2IP104##EC1500BE3
	0,12	2500	300	18	19	11	15	-	0,8	FCSJ2IP124##EG1500BE3
	0,12	1500	180	26,5	16,5	7	22,5	-	0,8	FCSJ2IP124##B22200BE3
	0,15	1500	225	26,5	17	8,5	22,5	-	0,8	FCSJ2IP154##B32200BE3
	0,18	1500	270	26,5	17	8,5	22,5	-	0,8	FCSJ2IP184##B32200BE3
	0,22	1500	330	26,5	19	10	22,5	-	0,8	FCSJ2IP224##B42200BE3
	0,27	1500	405	26,5	20	11	22,5	-	0,8	FCSJ2IP274##B52200BE3
	0,33	1500	495	26,5	20	11	22,5	-	0,8	FCSJ2IP334##B52200BE3
	0,39	1500	585	26,5	23	13	22,5	-	0,8	FCSJ2IP394##B62200BE3
	0,47	900	423	32	22	13	27,5	-5,1/10,2/12,7	0,8	FCSJ2IP474##I727##BE3
	0,56	900	504	32	22	13	27,5	-5,1/10,2/12,7	0,8	FCSJ2IP564##I727##BE3
	0,68	900	612	32	24,5	13	27,5	-5,1/10,2/12,7	0,8	FCSJ2IP684##I827##BE3
	0,82	900	738	32	28	14	27,5	-5,1/10,2/12,7	0,8	FCSJ2IP824##IC27##BE3
	1,0	900	900	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCSJ2IP105##IF27##BE3
	1,2	900	1080	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCSJ2IP125##IF27##BE3
	1,5	900	1350	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCSJ2IP155##II27##BE3
1,8	900	1620	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCSJ2IP185##II27##BE3	
1000 V _{DC} 500 V _{AC} 3A	0,0039	3000	11,7	13	9	4	10	-	0,6	FCS3AIP392##C21000AE3
	0,0047	3000	14,1	13	9	4	10	-	0,6	FCS3AIP472##C21000AE3
	0,0056	3000	16,8	13	9	4	10	-	0,6	FCS3AIP562##C21000AE3
	0,0068	3000	20,4	13	9	4	10	-	0,6	FCS3AIP682##C21000AE3
	0,0082	3000	24,6	13	9	4	10	-	0,6	FCS3AIP822##C21000AE3
	0,010	2500	25,0	18	11	5	15	-	0,8	FCS3AIP103##E21500BE3
	0,010	3000	30,0	13	11	5	10	-	0,6	FCS3AIP103##C41000AE3
	0,012	2500	30,0	18	11	5	15	-	0,8	FCS3AIP123##E21500BE3
	0,012	3000	36,0	13	11	5	10	-	0,6	FCS3AIP123##C41000AE3
	0,015	2500	37,5	18	11	5	15	-	0,8	FCS3AIP153##E21500BE3
	0,015	3000	45,0	13	12	6	10	-	0,6	FCS3AIP153##C51000AE3
	0,018	2500	45,0	18	11	5	15	-	0,8	FCS3AIP183##E21500BE3
	0,018	3000	54,0	13	12	6	10	-	0,6	FCS3AIP183##C51000AE3
	0,020	2500	50,0	18	11	5	15	-	0,8	FCS3AIP203##E21500BE3
	0,020	3000	60,0	13	13	7	10	-	0,6	FCS3AIP203##C81000AE3
	0,022	3000	66,0	13	13	7	10	-	0,6	FCS3AIP223##C81000AE3
	0,022	2500	55,0	18	11	5	15	-	0,8	FCS3AIP223##E21500BE3
	0,027	2500	67,5	18	12	6	15	-	0,8	FCS3AIP273##E51500BE3
	0,033	2500	82,5	18	12	6	15	-	0,8	FCS3AIP333##E51500BE3
	0,039	2500	97,5	18	12	6	15	-	0,8	FCS3AIP393##E51500BE3
	0,047	2500	118	18	13,5	7,5	15	-	0,8	FCS3AIP473##E71500BE3
	0,056	2500	140	18	13,5	7,5	15	-	0,8	FCS3AIP563##E71500BE3
	0,068	2500	170	18	14,5	8,5	15	-	0,8	FCS3AIP683##E81500BE3

SNUBBER

(1) Maximum permissible peak current



U_R	C_R	dV/dt	$\hat{i}^{(1)}$	W	H	T	P_1	P_2	$\varnothing d$	ORDER CODE
$\leq 85^\circ C$				+1/-1,5	+1/-1,5	+1/-1,5	$\neq 0,5$	$\neq 0,5$	$\neq 0,5$	"#" to be defined, see ordering code table
(V)	(μF)	(V/ μF)	(A)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
1000 V_{DC} 500 V_{AC} 3A	0,082	2500	205	18	16	10	15	-	0,8	FCS3AIP823##EC1500BE3
	0,10	2500	250	18	16	10	15	-	0,8	FCS3AIP104##EC1500BE3
	0,12	2500	300	18	19	11	15	-	0,8	FCS3AIP124##EG1500BE3
	0,12	1500	180	26,5	16,5	7	22,5	-	0,8	FCS3AIP124##B22200BE3
	0,15	1500	225	26,5	17	8,5	22,5	-	0,8	FCS3AIP154##B32200BE3
	0,18	1500	270	26,5	17	8,5	22,5	-	0,8	FCS3AIP184##B32200BE3
	0,22	1500	330	26,5	19	10	22,5	-	0,8	FCS3AIP224##B42200BE3
	0,27	1500	405	26,5	20	11	22,5	-	0,8	FCS3AIP274##B52200BE3
	0,33	1500	495	26,5	20	11	22,5	-	0,8	FCS3AIP334##B52200BE3
	0,39	1500	585	26,5	23	13	22,5	-	0,8	FCS3AIP394##B62200BE3
	0,47	900	423	32	22	13	27,5	-5,1/10,2/12,7	0,8	FCS3AIP474##I172##BE3
	0,56	900	504	32	22	13	27,5	-5,1/10,2/12,7	0,8	FCS3AIP564##I172##BE3
	0,68	900	612	32	24,5	13	27,5	-5,1/10,2/12,7	0,8	FCS3AIP684##I182##BE3
	0,82	900	738	32	28	14	27,5	-5,1/10,2/12,7	0,8	FCS3AIP824##I1C27##BE3
	1,0	900	900	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCS3AIP105##IF27##BE3
	1,2	900	1080	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCS3AIP125##IF27##BE3
1,5	900	1350	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCS3AIP155##I127##BE3	
1,8	900	1620	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCS3AIP185##I127##BE3	
1200 V_{DC} 600 V_{AC} 3B	0,0012	4800	5,8	13	9	4	10	-	0,6	FCS3BIP122##C21000AE3
	0,0015	4800	7,2	13	9	4	10	-	0,6	FCS3BIP152##C21000AE3
	0,0018	4800	8,6	13	9	4	10	-	0,6	FCS3BIP182##C21000AE3
	0,0022	4800	10,6	13	9	4	10	-	0,6	FCS3BIP222##C21000AE3
	0,0027	4800	13,0	13	9	4	10	-	0,6	FCS3BIP272##C21000AE3
	0,0033	4800	15,8	13	9	4	10	-	0,6	FCS3BIP332##C21000AE3
	0,0039	4800	18,7	13	11	5	10	-	0,6	FCS3BIP392##C41000AE3
	0,0047	4800	22,6	13	11	5	10	-	0,6	FCS3BIP472##C41000AE3
	0,0056	4800	26,9	13	11	5	10	-	0,6	FCS3BIP562##C41000AE3
	0,0068	4800	32,6	13	11	5	10	-	0,6	FCS3BIP682##C41000AE3
	0,0082	4800	39,4	13	11	5	10	-	0,6	FCS3BIP822##C41000AE3
	0,010	3300	33,0	18	11	5	15	-	0,8	FCS3BIP103##E21500BE3
	0,012	3300	39,6	18	11	5	15	-	0,8	FCS3BIP123##E21500BE3
	0,015	3300	49,5	18	11	5	15	-	0,8	FCS3BIP153##E21500BE3
	0,018	3300	59,4	18	11	5	15	-	0,8	FCS3BIP183##E21500BE3
	0,020	3300	66,0	18	11	5	15	-	0,8	FCS3BIP203##E21500BE3
	0,022	3300	72,6	18	12	6	15	-	0,8	FCS3BIP223##E51500BE3
	0,027	3300	89,1	18	13,5	7,5	15	-	0,8	FCS3BIP273##E71500BE3
	0,033	3300	109	18	13,5	7,5	15	-	0,8	FCS3BIP333##E71500BE3
	0,039	3300	129	18	14,5	8,5	15	-	0,8	FCS3BIP393##E81500BE3
	0,047	2200	103	26,5	16,5	7	22,5	-	0,8	FCS3BIP473##B22200BE3
	0,056	2200	123	26,5	16,5	7	22,5	-	0,8	FCS3BIP563##B22200BE3
	0,068	2200	150	26,5	17	8,5	22,5	-	0,8	FCS3BIP683##B32200BE3
	0,082	2200	180	26,5	19	10	22,5	-	0,8	FCS3BIP823##B42200BE3
	0,10	2200	220	26,5	19	10	22,5	-	0,8	FCS3BIP104##B42200BE3
	0,12	2200	264	26,5	20	11	22,5	-	0,8	FCS3BIP124##B52200BE3
	0,15	2200	330	26,5	23	13	22,5	-	0,8	FCS3BIP154##B62200BE3
	0,18	1000	180	32	20	11	27,5	-5,1/10,2/12,7	0,8	FCS3BIP184##I427##BE3
	0,22	1000	220	32	22	13	27,5	-5,1/10,2/12,7	0,8	FCS3BIP224##I172##BE3
	0,27	1000	270	32	24,5	13	27,5	-5,1/10,2/12,7	0,8	FCS3BIP274##I182##BE3
	0,33	1000	330	32	28	14	27,5	-5,1/10,2/12,7	0,8	FCS3BIP334##I1C27##BE3
	0,39	1000	390	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCS3BIP394##IF27##BE3
0,56	1000	560	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCS3BIP564##I127##BE3	
0,68	1000	680	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCS3BIP684##I127##BE3	
1600 V_{DC} 650 V_{AC} 3C	0,0056	6000	33,6	18	11	5	15	-	0,8	FCS3CIP562##E21500BE3
	0,0068	6000	40,8	18	11	5	15	-	0,8	FCS3CIP682##E21500BE3
	0,0082	6000	49,2	18	11	5	15	-	0,8	FCS3CIP822##E21500BE3
	0,010	6000	60,0	18	11	5	15	-	0,8	FCS3CIP103##E21500BE3
	0,012	6000	72,0	18	12	6	15	-	0,8	FCS3CIP123##E51500BE3
	0,015	6000	90,0	18	12	6	15	-	0,8	FCS3CIP153##E51500BE3
	0,018	6000	108	18	13,5	7,5	15	-	0,8	FCS3CIP183##E71500BE3
	0,022	6000	132	18	13,5	7,5	15	-	0,8	FCS3CIP223##E71500BE3
	0,027	6000	162	18	14,5	8,5	15	-	0,8	FCS3CIP273##E81500BE3
	0,033	6000	198	18	14,5	8,5	15	-	0,8	FCS3CIP333##E81500BE3
	0,039	3000	117	26,5	16,5	7	22,5	-	0,8	FCS3CIP393##B22200BE3

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(1) Maximum permissible peak current



U_R	C_R	dV/dt	$\hat{I}^{(1)}$	W	H	T	P_1	P_2	ϕd	ORDER CODE
$\leq 85^\circ C$				+1/-1,5	+1/-1,5	+1/-1,5	$\pm 0,5$	$\pm 0,5$	$\pm 0,05$	"#" to be defined, see ordering code table
(V)	(μF)	(V/ μF)	(A)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
1600 V_{DC} 650 V_{AC} 3C	0,047	3000	141	26,5	16,5	7	22,5	-	0,8	FCS3CIP473##B22200BE3
	0,056	3000	168	26,5	17	8,5	22,5	-	0,8	FCS3CIP563##B32200BE3
	0,068	3000	204	26,5	19	10	22,5	-	0,8	FCS3CIP683##B42200BE3
	0,082	3000	246	26,5	19	10	22,5	-	0,8	FCS3CIP823##B42200BE3
	0,10	3000	300	26,5	20	11	22,5	-	0,8	FCS3CIP104##B52200BE3
	0,12	2000	240	32	22	13	27,5	-5,1/10,2/12,7	0,8	FCS3CIP124##I727##BE3
	0,15	2000	300	32	24,5	13	27,5	-5,1/10,2/12,7	0,8	FCS3CIP154##I827##BE3
	0,18	2000	360	32	28	14	27,5	-5,1/10,2/12,7	0,8	FCS3CIP184##IC27##BE3
	0,22	2000	440	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCS3CIP224##IF27##BE3
	0,27	2000	540	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCS3CIP274##IF27##BE3
	0,33	2000	660	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCS3CIP334##IF27##BE3
	0,39	2000	780	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCS3CIP394##II27##BE3
	0,47	2000	940	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCS3CIP474##II27##BE3
	2000 V_{DC} 700 V_{AC} 3D	0,0010	9500	9,5	18	11	5	15	-	0,8
0,0012		9500	11,4	18	11	5	15	-	0,8	FCS3DIP122##E21500BE3
0,0015		9500	14,3	18	11	5	15	-	0,8	FCS3DIP152##E21500BE3
0,0018		9500	17,1	18	11	5	15	-	0,8	FCS3DIP182##E21500BE3
0,0022		9500	20,9	18	11	5	15	-	0,8	FCS3DIP222##E21500BE3
0,0027		9500	25,7	18	11	5	15	-	0,8	FCS3DIP272##E21500BE3
0,0033		9500	31,4	18	11	5	15	-	0,8	FCS3DIP332##E21500BE3
0,0039		9500	37,1	18	11	5	15	-	0,8	FCS3DIP392##E21500BE3
0,0047		9500	44,7	18	11	5	15	-	0,8	FCS3DIP472##E21500BE3
0,0056		9500	53,2	18	12	6	15	-	0,8	FCS3DIP562##E51500BE3
0,0068		9500	64,6	18	12	6	15	-	0,8	FCS3DIP682##E51500BE3
0,0082		9500	77,9	18	12	6	15	-	0,8	FCS3DIP822##E51500BE3
0,010		9500	95,0	18	13,5	7,5	15	-	0,8	FCS3DIP103##E71500BE3
0,012		9500	114	18	14,5	8,5	15	-	0,8	FCS3DIP123##E81500BE3
0,015		9500	143	18	14,5	8,5	15	-	0,8	FCS3DIP153##E81500BE3
0,018		9500	171	18	16	10	15	-	0,8	FCS3DIP183##EC1500BE3
0,022		3500	77,0	26,5	16,5	7	22,5	-	0,8	FCS3DIP223##B22200BE3
0,027		3500	94,5	26,5	16,5	7	22,5	-	0,8	FCS3DIP273##B22200BE3
0,033		3500	116	26,5	17	8,5	22,5	-	0,8	FCS3DIP333##B32200BE3
0,039		3500	137	26,5	19	10	22,5	-	0,8	FCS3DIP393##B42200BE3
0,047		3500	165	26,5	19	10	22,5	-	0,8	FCS3DIP473##B42200BE3
0,056		3500	196	26,5	20	11	22,5	-	0,8	FCS3DIP563##B52200BE3
0,068		2500	170	32	22	13	27,5	-5,1/10,2/12,7	0,8	FCS3DIP683##I727##BE3
0,082		2500	205	32	24,5	13	27,5	-5,1/10,2/12,7	0,8	FCS3DIP823##I827##BE3
0,10		2500	250	32	28	14	27,5	-5,1/10,2/12,7	0,8	FCS3DIP104##IC27##BE3
0,12		2500	300	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCS3DIP124##IF27##BE3
0,15		2500	375	32	33	18	27,5	-5,1/10,2/12,7	0,8	FCS3DIP154##IF27##BE3
0,18		2500	450	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCS3DIP184##II27##BE3
0,22		2500	550	32	37	22	27,5	-5,1/10,2/12,7	0,8	FCS3DIP224##II27##BE3

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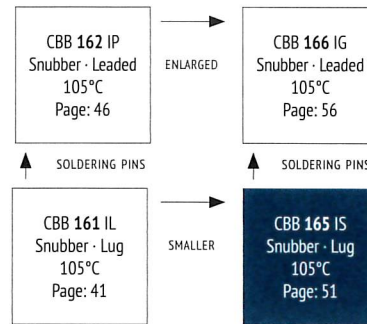
(1) Maximum permissible peak current



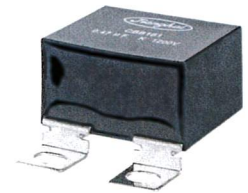
FEATURES

- Very low dissipation factor
- High peak pulse capability
- Plates for direct IGBT connection
- Self-healing
- 105°C

OVERVIEW



PRODUCT



APPLICATIONS

- High pulse and high frequency circuits

CHARACTERISTICS

ITEM	CHARACTERISTICS
Climatic Category	40/105/56 (IEC 61071)
Operating Temperature	-40 ~ +105 °C ($\Theta_{\text{hotspot}} \leq 105$ °C) $\Theta_{\text{hotspot}} = 85\text{--}105$ °C: See Voltage Derating Diagram
Storage Temperature	-40 ~ +105 °C
Rated Voltage U_{RDC}	850 ~ 3.000 V _{DC}
Capacitance Range	0,4 ~ 8,0 μF
Capacitance Tolerance	± 10 % (K), ± 5 % (J)
Voltage between Terminals U_{TT}	$1,5 \cdot U_{\text{RDC}}$ (20 °C, 10s)
Voltage between Terminals & Case U_{TC}	3.000 V _{AC} (20 °C, 50 Hz, 10s)
Capacitor Dissipation Factor $\tan \delta$	$\leq 5 \cdot 10^{-4}$ (20 °C, 1 kHz)
Dielectric Dissipation Factor $\tan \delta_0$	$\leq 2 \cdot 10^{-4}$ (20 °C, 1 kHz)
Series Inductance $L_{\text{S (typ.)}}$	≤ 20 nH (20 °C)
Insulation Resistance R_i °C	≥ 10.000 M $\Omega \cdot \mu\text{F}$ (20 °C, 100 V _{DC} , 1 min)
Max. Overvoltage	Please see IEC 61071
Life Time Expectancy	≥ 100.000 h, failure rate ≤ 100 FIT (70°C)
Reference Standard	IEC 61071:2007

ENVIRONMENTAL

The products are RoHS, WEEE and REAcH compliant.

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

APPROVALS

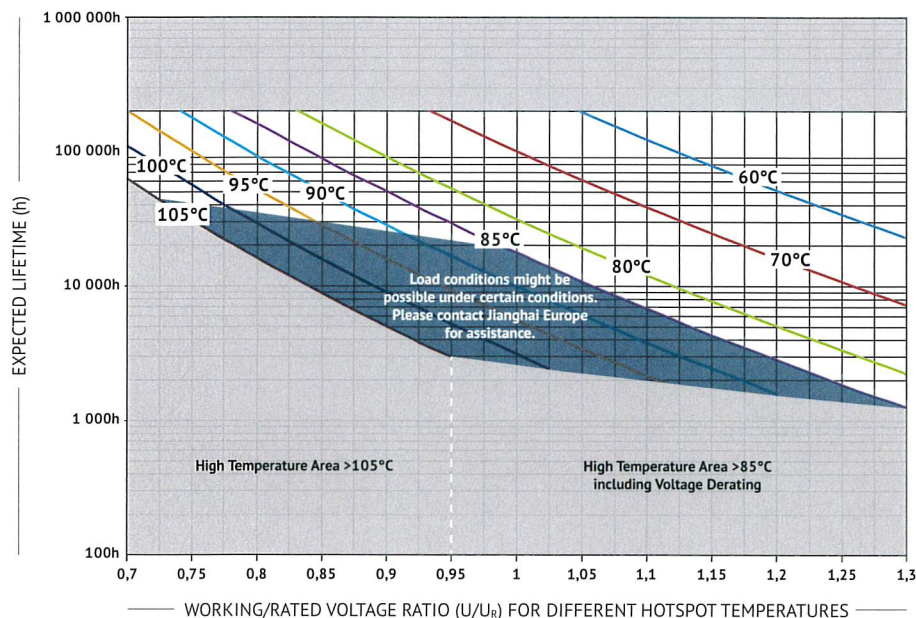
UL94-V0:

Plastic & Compound Mass

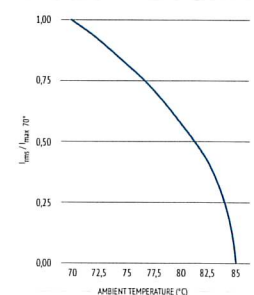
SNUBBER

LIFETIME

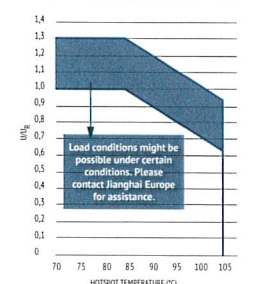
END OF LIFE 3% CAPACITANCE LOSS



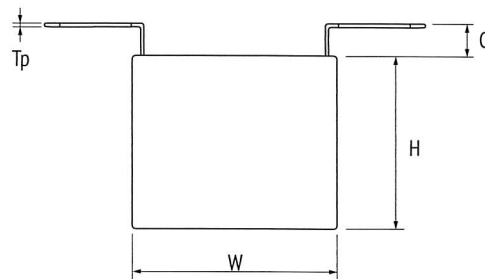
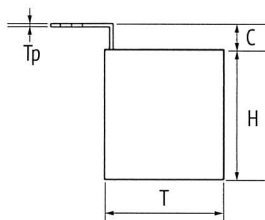
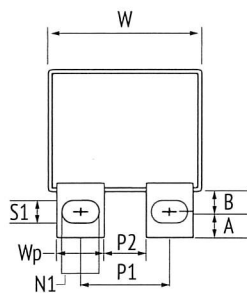
CURRENT DERATING



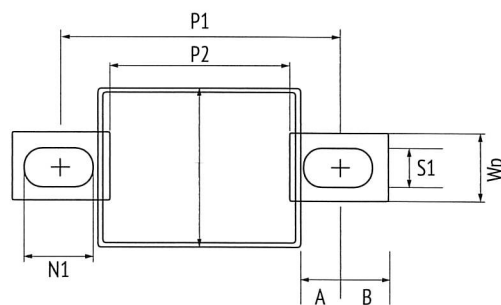
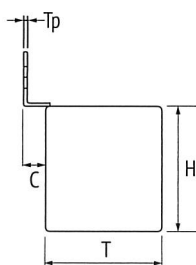
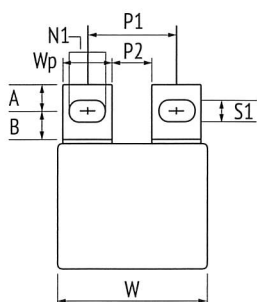
VOLTAGE DERATING



DIMENSIONS



STYLE A



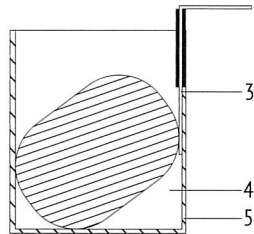
STYLE B

STYLE C

Terminal Style	Length of Case $W \pm 1/-1,5$ (mm)	Mounting Hole Pitch $P1 \pm 0,5$ (mm)	Gap between Terminals $P2 \pm 0,5$ (mm)	Width Terminal Plate $Wp \pm 0,3$ (mm)	Thickness Terminal $Tp \pm 0,1$ (mm)	Distance of Terminal $C \pm 1$ (mm)	Width of Hole $S1 \pm 0,1$ (mm)	Length of Hole $N1 \pm 0,3$ (mm)	Position of Hole $A \pm 0,2$ (mm)	Distance of Hole $B \pm 0,2$ (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

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INTERNAL CONSTRUCTION



MARKING



CBB 165
1µF K 1200V
G05F45

BRAND
PRODUCT SERIES
CAPACITANCE, TOLERANCE AND RATED VOLTAGE
DATE CODE

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

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ORDER CODE

FC	S	3B	IL	105	K	A	FA	60	12	16	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 W _p (mm)	Hole Shape	For internal use											
Film Cap. = FC	Square box = S	630	2J	CBB 165 = IS	0,22	224	±5%	J	Style A	A	42,5 x 28 x 24	FA	24	24	10	10	14	14	Circular M6	0			
		700	2Q		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
		850	K2		0,47	474	Style C	C	42,5 x 35,5 x 33,5				FC	37	37	23	23					Circular M8	2
		1000	3A		0,68	684		42,5 x 36 x 24	FD	60	60	38	38							Oval M8: 8,5x10,5	3		
		1200	3B		0,82	824	42,5 x 43 x 42	FE	75	75	53	53								Oval M6: 6,5x10,5	7		
		1600	3C		1,0	105	42,5 x 45 x 30	FF													Oval 9x12	5	
		2000	3D		1,2	125	57,5 x 43,5 x 29,5	HG													Circular ø5,5	A	
		2500	3E		1,5	155	57,5 x 45 x 30	HH													Circular ø7,0	C	
		3000	3F		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)	$\bar{i}^{(1)}$ (A)	ESR _{op} 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
850 V_{DC} 450 V _{AC} K2	1,20	375	450	10	≤20	11,8	42,5	28	24	FCSK2IS125##FA###14#E3
	2,00	375	750	9	≤20	15,6	42,5	36	24	FCSK2IS205##FD###14#E3
	2,50	375	937	8	≤20	17,6	42,5	35,5	33,5	FCSK2IS255##FC###14#E3
	2,80	375	1050	7	≤20	19,8	42,5	35,5	33,5	FCSK2IS285##FC###14#E3
	3,30	375	1237	6	≤20	21,5	42,5	45	30	FCSK2IS335##FF###14#E3
	4,00	375	1500	5	≤20	24,0	42,5	43	42	FCSK2IS405##FE###14#E3
	4,50	225	1012	5	≤20	24,0	57,5	43,5	29,5	FCSK2IS455##HG###14#E3
	4,80	225	1080	4	≤20	25,0	57,5	45	30	FCSK2IS485##HH###14#E3
	5,50	225	1237	4	≤20	25,0	57,5	45	35	FCSK2IS555##HJ###14#E3
	8,00	225	1800	3	≤20	29,0	57,5	55	40	FCSK2IS805##HM###14#E3
1000 V_{DC} 500 V _{AC} 3A	1,00	425	425	10	≤20	11,6	42,5	28	24	FCS3AIS105##FA###14#E3
	1,50	425	637	9	≤20	15,5	42,5	36	24	FCS3AIS155##FD###14#E3
	1,80	425	765	8	≤20	17,5	42,5	35,5	33,5	FCS3AIS185##FC###14#E3
	2,00	425	850	7	≤20	18,8	42,5	35,5	33,5	FCS3AIS205##FC###14#E3
	2,50	425	1062	6	≤20	21,0	42,5	45	30	FCS3AIS255##FF###14#E3
	3,00	425	1275	5	≤20	23,0	42,5	43	42	FCS3AIS305##FE###14#E3
	3,30	250	825	6	≤20	23,0	57,5	43,5	29,5	FCS3AIS335##HG###14#E3
	3,50	250	875	5	≤20	24,0	57,5	45	30	FCS3AIS355##HH###14#E3
	4,20	250	1050	5	≤20	24,0	57,5	45	35	FCS3AIS425##HJ###14#E3
	6,00	250	1500	4	≤20	28,0	57,5	55	40	FCS3AIS605##HM###14#E3
1200 V_{DC} 600 V _{AC} 3B	0,68	475	323	10	≤20	11,5	42,5	28	24	FCS3BIS684##FA###14#E3
	1,00	475	475	10	≤20	15,4	42,5	36	24	FCS3BIS105##FD###14#E3
	1,30	475	617	8	≤20	18,6	42,5	35,5	33,5	FCS3BIS135##FC###14#E3
	1,60	475	760	7	≤20	20,6	42,5	45	30	FCS3BIS165##FF###14#E3
	2,00	475	950	7	≤20	22,0	42,5	43	42	FCS3BIS205##FE###14#E3
	2,20	300	660	6	≤20	22,0	57,5	43,5	29,5	FCS3BIS225##HG###14#E3
	2,50	300	750	6	≤20	23,0	57,5	45	30	FCS3BIS255##HH###14#E3
	2,80	300	840	6	≤20	24,0	57,5	45	35	FCS3BIS285##HJ###14#E3
	3,30	300	990	5	≤20	24,0	57,5	50	35	FCS3BIS335##HL###14#E3
	4,00	300	1200	5	≤20	26,0	57,5	55	40	FCS3BIS405##HM###14#E3
1600 V_{DC} 650 V _{AC} 3C	0,45	625	281	11	≤20	11,4	42,5	28	24	FCS3CIS454##FA###14#E3
	0,60	625	375	10	≤20	15,2	42,5	36	24	FCS3CIS604##FD###14#E3
	0,70	625	437	10	≤20	17,0	42,5	35,5	33,5	FCS3CIS704##FC###14#E3
	0,85	625	531	9	≤20	18,4	42,5	35,5	33,5	FCS3CIS854##FC###14#E3
	1,00	625	625	8	≤20	20,5	42,5	45	30	FCS3CIS105##FF###14#E3
	1,30	625	812	7	≤20	21,0	42,5	43	42	FCS3CIS135##FE###14#E3
	1,50	375	562	6	≤20	22,0	57,5	43,5	29,5	FCS3CIS155##HG###14#E3
	1,60	375	600	6	≤20	22,0	57,5	45	30	FCS3CIS165##HH###14#E3
	1,80	375	675	5	≤20	23,0	57,5	45	35	FCS3CIS185##HJ###14#E3
	2,50	375	937	4	≤20	25,0	57,5	55	40	FCS3CIS255##HM###14#E3
2000 V_{DC} 700 V _{AC} 3D	1,00	425	425	5	≤20	22,0	57,5	43,5	29,5	FCS3DIS105##HG###14#E3
	1,10	425	467	5	≤20	23,0	57,5	45	30	FCS3DIS115##HH###14#E3
	1,30	425	552	4	≤20	23,0	57,5	45	35	FCS3DIS135##HJ###14#E3
	1,50	425	637	4	≤20	24,0	57,5	50	35	FCS3DIS155##HL###14#E3
	1,90	425	807	3	≤20	25,0	57,5	55	40	FCS3DIS195##HM###14#E3
2500 V_{DC} 725 V _{AC} 3E	0,55	600	330	5	≤20	21,0	57,5	43,5	29,5	FCS3EIS554##HG###14#E3
	0,60	600	360	5	≤20	21,0	57,5	45	30	FCS3EIS604##HH###14#E3
	0,75	600	450	4	≤20	23,0	57,5	45	35	FCS3EIS754##HJ###14#E3
	0,80	600	480	4	≤20	23,0	57,5	50	35	FCS3EIS804##HL###14#E3
	1,00	600	600	3	≤20	25,0	57,5	55	40	FCS3EIS105##HM###14#E3

SNUBBER

(1) Maximum permissible peak current





U_R	C_R	dV/dt	$\hat{i}^{(1)}$	ESR_{typ}	L_s	I_{max}	W	H	T	ORDER CODE
$\leq 85^\circ C$		$20^\circ C$		$20^\circ C$	$20^\circ C$	$70^\circ C$	+1/-1,5	+1/-1,5	+1/-1,5	*#* to be defined, see ordering code table
(V)	(μF)	(V/ μS)	(A)	(m Ω)	(nH)	(A)	(mm)	(mm)	(mm)	
3000 V _{DC} 750 V _{AC} 3L	0,40	600	240	6	≤ 20	21,0	57,5	43,5	29,5	FCS3LIS404##HG####14#E3
	0,40	600	240	6	≤ 20	21,0	57,5	45	30	FCS3LIS404##HH####14#E3
	0,50	600	300	5	≤ 20	22,0	57,5	45	35	FCS3LIS504##HJ####14#E3
	0,55	600	330	5	≤ 20	23,0	57,5	50	35	FCS3LIS554##HL####14#E3
	0,65	600	390	4	≤ 20	23,0	57,5	45	45	FCS3LIS654##HK####14#E3
	0,70	600	420	4	≤ 20	24,0	57,5	55	40	FCS3LIS704##HM####14#E3

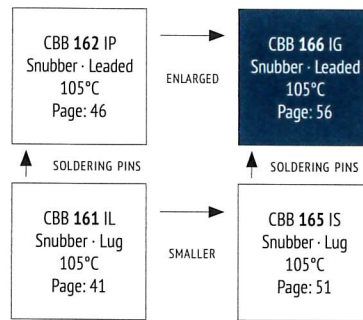
(1) Maximum permissible peak current

SNUBBER

FEATURES

- Very low dissipation factor
- Highest peak pulse capability
- Design for Snubber Application
- Self-healing
- Soldering Terminal

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 ($\Theta_{\text{hotspot}} \leq 105$ °C) $\Theta_{\text{hotspot}} = 85-105$ °C: See Voltage Derating Diagram
Storage Temperature	-40 ~ +105 °C
Rated Voltage U_{RDC}	850 ~ 2.000 V_{DC}
Capacitance Range	0,033 ~ 5,0 μF
Capacitance Tolerance	± 10 % (K), ± 5 % (J)
Voltage between Terminals U_{TT}	$1,5 \cdot U_{\text{RDC}}$ (20 °C, 10s)
Voltage between Terminals & Case U_{TC}	$\geq 3.000 V_{\text{AC}}$ (20 °C, 50 Hz, 10s)
Capacitor Dissipation Factor $\tan \delta$	$\leq 1 \cdot 10^{-3}$ (20 °C, 1 kHz)
Dielectric Dissipation Factor $\tan \delta_0$	$\leq 2 \cdot 10^{-4}$ (20 °C, 1 kHz)
Insulation Resistance $R \cdot ^\circ\text{C}$	$\geq 10.000 \text{ M}\Omega \cdot \mu\text{F}$ (20 °C, 100 V_{DC} , 1 min)
Max. Overvoltage	Please see IEC 61071
Life Time Expectancy	$\geq 100.000\text{h}$, failure rate ≤ 100 FIT (70 °C)
Reference Standard	IEC 61071:2007

ENVIRONMENTAL

The products are RoHS, WEEE and REAcH compliant.

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

APPROVALS

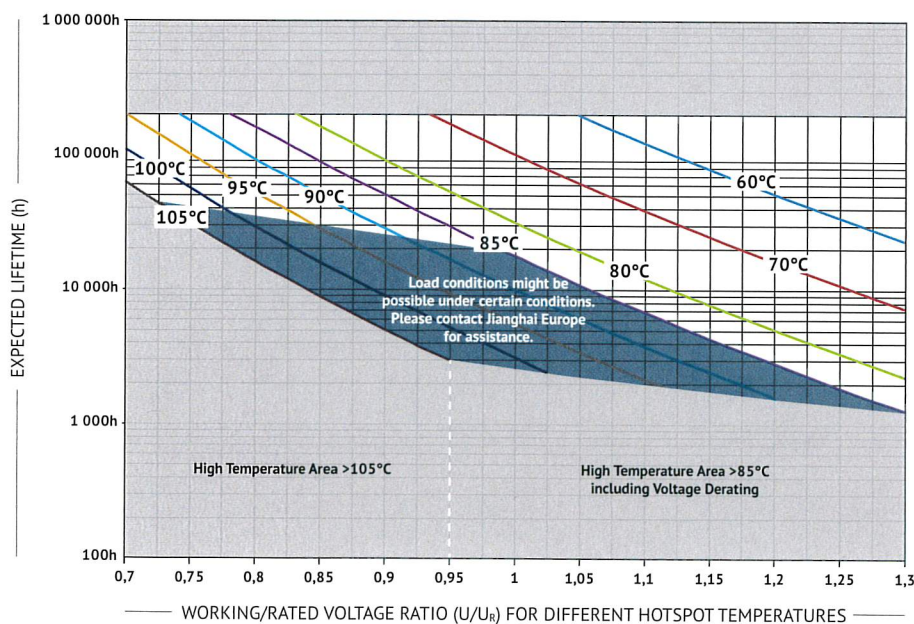
UL94-V0:

Plastic & Compound Mass

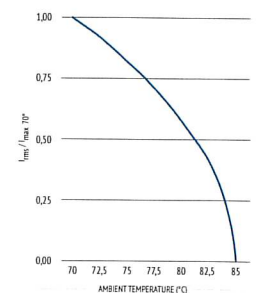
SNUBBER

LIFETIME

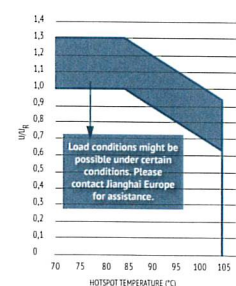
END OF LIFE 3% CAPACITANCE LOSS



CURRENT DERATING

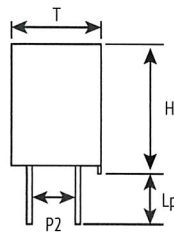
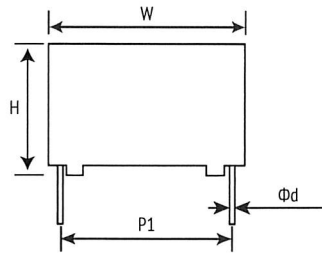


VOLTAGE DERATING

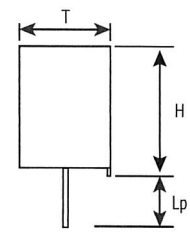
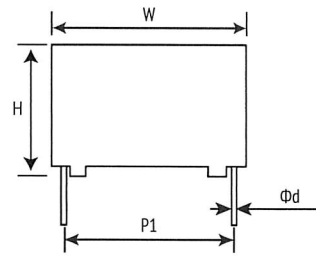


DIMENSIONS

4 PIN TYPE

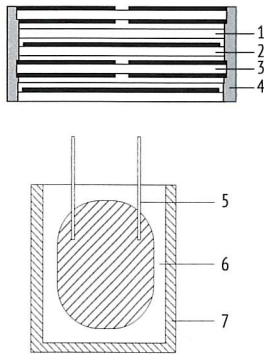


2 PIN TYPE



Lp = 5,0 ±1mm · other styles on request

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



CBB 166
1μF J 1200V
J08F15

BRAND

PRODUCT SERIES

CAPACITANCE, TOLERANCE AND RATED VOLTAGE

DATE CODE

SNUBBER

ORDER CODE

FC	S	3B	IG	105	K	A	FA	37	20	C	E3					
Capacitor type	Product shape	DC rated voltage code (V)	Series code	Capacitance Code (μF)	Capacitance tolerance	Pin Style (mm)	Dimension Code (mm) W x H x T ±1,0 ±1,0 ±1,0	Pitch P ₁ (mm)	Pitch P ₂ (mm)	Leadwire Diameter Ød	For internal use					
Film Cap. = FC	Square box = S	850	K2	CBB 166 = IG	0,033	333	±5%	J	4 Pin Lp = 8mm	K 32 x 20 x 11	I4 27,5	27 10,2	10 0,6	A		
		1000	3A		0,68	684	±10%	K	4 Pin Lp = 5mm	A 32 x 22 x 13	I7 37,5	37 20,3	20 0,8	B		
		1200	3B		0,82	824			4 Pin Lp = 4,5mm	L 32 x 24,5 x 13	I8 52,5	52 -	00 1,0	C		
		1600	3C		1,0	105			4 Pin Lp = 4mm	S 32 x 28 x 14	IC			1,2	D	
		2000	3D		1,2	125			4 Pin Lp = 3,5mm	J 32 x 33 x 18	IF			0,5	E	
					2,0	205			2 Pin long leads (~ 20mm)	C 32 x 37 x 22	II					
					5,0	505			2 Pin Lp = 5mm	B 42,5 x 37 x 28	F1					
									2 Pin Lp = 4,5mm	T 42,5 x 40 x 20	F2					
									2 Pin Lp = 4,0mm	M 42,5 x 32 x 19	F5					
									2 Pin Lp = 3,5mm	U 42,5 x 44 x 24	F9					
									2 Pin Lp = 3,2mm	V 42,5 x 45 x 30	FF					
										57,5 x 45 x 30	HH					
										57,5 x 50 x 35	HL					

