



**CAPACITOR  
COMPETENCE**  
*since 1958*

FILM CAPACITORS

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FILM CAPACITORS · SNUBBER

# CBB 161 IL SERIES

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**JIANGHAI EUROPE**  
Electronic Components GmbH



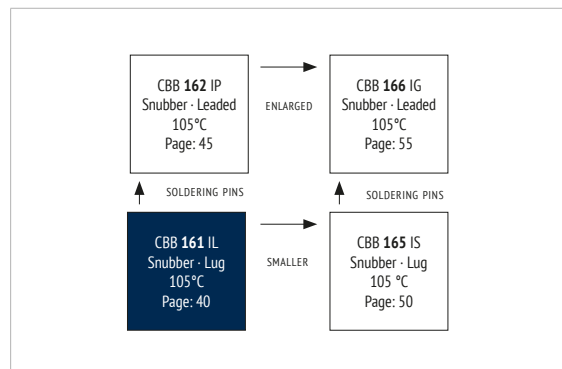
ENGINEERED SOLUTIONS

v2020.2

## 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) $\theta_{\text{hotspot}} = 85\text{-}105$ °C See Voltage Derating Diagram
Storage Temperature	-40 ~ +105 °C
Rated Voltage $U_{\text{RDC}}$	700 ~ 2.000 $V_{\text{DC}}$
Capacitance Range	0,2 ~ 7,5 $\mu\text{F}$
Capacitance Tolerance	$\pm 10$ % (K), $\pm 5$ % (J)
Voltage between Terminals $U_{\text{TT}}$	$1,5 \cdot U_{\text{RDC}}$ (20 °C, 10s)
Voltage between Terminals & Case $U_{\text{TC}}$	$3.000 V_{\text{AC}}$ (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 $R_{\text{I}}^{\text{C}}$	$\geq 30.000 \text{ M}\Omega \cdot \mu\text{F}$ (20 °C, 100 $V_{\text{DC}}$ , 1 min)
Max. Overvoltage	$1,1 \cdot U_{\text{RDC}}$ (30 % of time under load) $1,15 \cdot U_{\text{RDC}}$ (30 min. per day) $1,2 \cdot U_{\text{RDC}}$ (5 min. per day) $1,3 \cdot U_{\text{RDC}}$ (1 min. per day) $1,5 \cdot U_{\text{RDC}}$ (max. 30 ms, 100ms per day)
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](http://www.jianghai-europe.com)

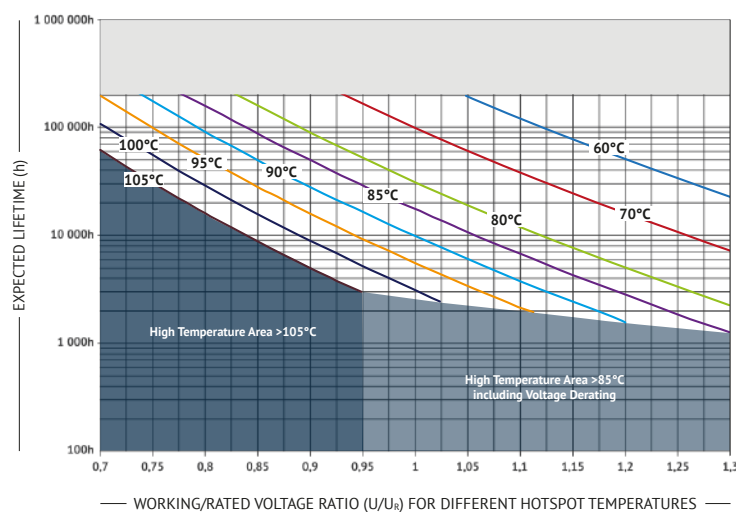
## APPROVALS

**UL94-V0:**

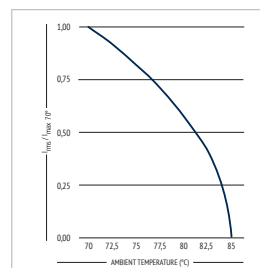
Plastic & Compound Mass

## LIFETIME

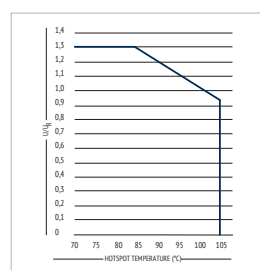
### END OF LIFE 3% CAPACITANCE LOSS

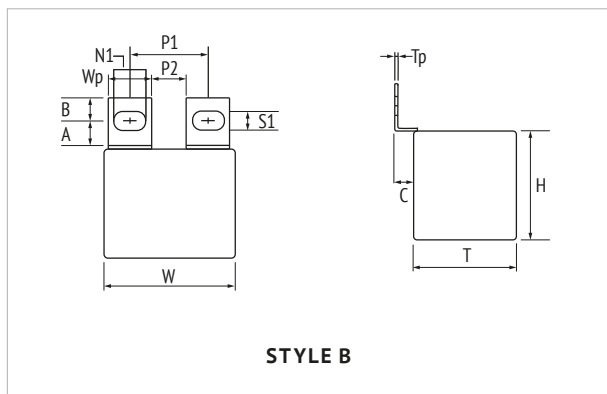
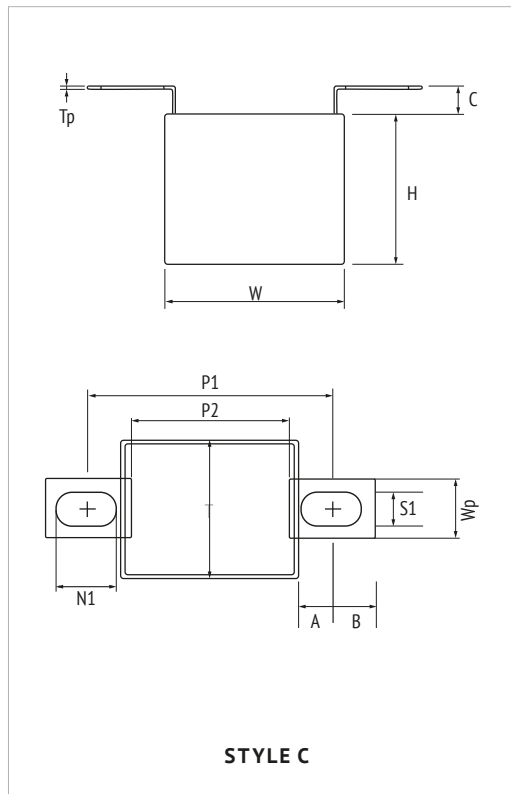
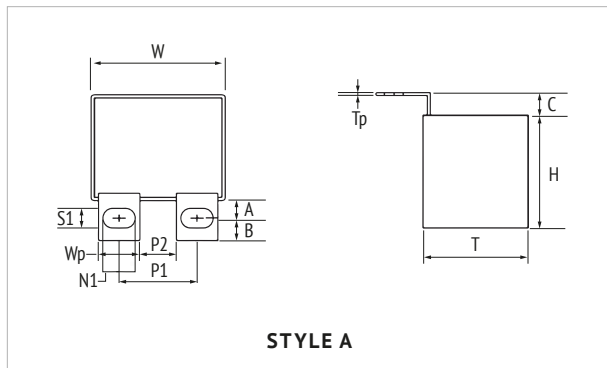


## CURRENT DERATING



## VOLTAGE DERATING



**■ DIMENSIONS**


Terminal Style	Length of Case $W \pm 1,0$ (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

## 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

BRAND: Jianghai

PRODUCT SERIES: CBB 161

CAPACITANCE, TOLERANCE AND RATED VOLTAGE: 1µF K 1200V

DATE CODE: G03F12

## 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 <sub>1</sub> (mm)	Gap P <sub>2</sub> (mm)	Width of plates W <sub>p</sub> (mm)	Hole Shape	For internal use
Film Cap. = FC	Square box = S	700 <b>2Q</b> 850 <b>K2</b> 1000 <b>3A</b> 1200 <b>3B</b> 1600 <b>3C</b> 2000 <b>3D</b>	CBB 161 = <b>IL</b>	0,22 <b>224</b> 0,33 <b>334</b> 0,47 <b>474</b> 0,68 <b>684</b> 0,82 <b>824</b> 1,0 <b>105</b> 1,2 <b>125</b> 1,5 <b>155</b> 2,0 <b>205</b> 2,2 <b>225</b> 2,5 <b>255</b> 3,0 <b>305</b> 3,3 <b>335</b> 4,0 <b>405</b> 4,7 <b>475</b> 5,0 <b>505</b> 6,0 <b>605</b> 6,8 <b>685</b> 10,0 <b>106</b>	+5% <b>J</b> +10% <b>K</b>	Style A <b>A</b> Style B <b>B</b> Style C <b>C</b>	42,5 x 28 x 24 <b>FA</b> 42,5 x 33 x 33 <b>FB</b> 42,5 x 35,5 x 33,5 <b>FC</b> 42,5 x 36 x 24 <b>FD</b> 42,5 x 43 x 42 <b>FE</b> 42,5 x 45 x 30 <b>FF</b> 57,5 x 43,5 x 29,5 <b>HG</b> 57,5 x 45 x 30 <b>HH</b> 57,5 x 45 x 35 <b>HJ</b> 57,5 x 45 x 45 <b>HK</b> 57,5 x 50 x 35 <b>HL</b> 57,5 x 55 x 40 <b>HM</b>	24 <b>24</b> 26 <b>26</b> 37 <b>37</b> 60 <b>60</b> 75 <b>75</b>	10 <b>10</b> 12 <b>12</b> 23 <b>23</b> 38 <b>38</b> 53 <b>53</b>	14 <b>14</b>	Circular M6 <b>0</b> Oval M6: 6,5x8,5 <b>1</b> Circular M8 <b>2</b> Oval M8: 8,5x10,5 <b>3</b> Oval M6: 6,5x10,5 <b>7</b> Oval 9x12 <b>5</b> Circular ø5,5 <b>A</b> Circular ø7,0 <b>C</b> Circular ø5,0 <b>E</b> Oval 8,5x14,5 <b>D</b>	

# CBB 161 IL SERIES

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### RATINGS

$U_{\text{RDC}}$ ≤85°C  (V)	$C_n$  (μF)	dV/dt 20°C  (V/μs)	$I^{(1)}$  (A)	$R_s$ 20°C 100kHz  (mΩ)	$L_s$ 20°C  (nH)	$I_{\text{max}}$ 70°C 100kHz  (A)	W ±1,0  (mm)	H ±1,0  (mm)	T ±1,0  (mm)	ORDER CODE  *#* to be defined, see ordering code table
700 V <sub>DC</sub> 420 V <sub>AC</sub> 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 <sub>DC</sub> 450 V <sub>AC</sub> 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	33	33	FCSK2IL804##FB###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	33	33	FCSK2IL155##FB###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 <sub>DC</sub> 500 V <sub>AC</sub> 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	33	33	FCS3AIL125##FB###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 <sub>DC</sub> 600 V <sub>AC</sub> 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	33	33	FCS3BIL604##FB###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	33	33	FCS3BIL804##FB###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

(1) Maximum permissible peak current

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### JIANGHAI EUROPE

Electronic Components GmbH



ENGINEERED SOLUTIONS

Customer specific adaptations needed? Please contact JIANGHAI Europe GmbH:  
TELEFON: +49 (0) 2151 652088-0 | E-MAIL: [INFO@JIANGHAI-EUROPE.COM](mailto:INFO@JIANGHAI-EUROPE.COM)

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