

Thin Film Binary MOS Capacitors



Product may not be to scale

The CBB and CBC MOS capacitor chips each contain five different capacitors in binary increments allowing the user many choices in value selection.

These chips are manufactured using Vishay Electro-Films (EFI) sophisticated Thin Film equipment and manufacturing technology. The CBB and CBCs are 100 % electrically tested and visually inspected to MIL-STD-883, method 2032, class H or K.

FEATURES

- Wire bondable
- User value selection
- Five capacitors on a 0.019" x 0.048" (CBB) or 0.044" x 0.044" (CBC) chip
- Case size: 0402, 0404
- Capacitance range: up to 93 pF in binary increments
- Dielectric: silicon dioxide
- Low dielectric loss
- Substrate: silicon with gold backing
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

APPLICATIONS

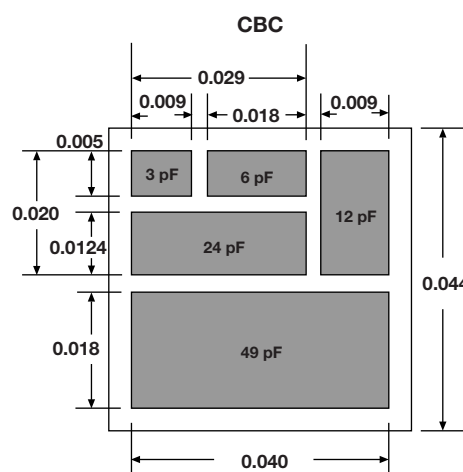
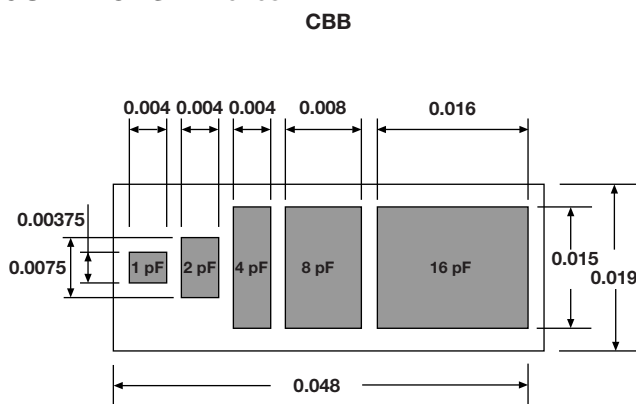
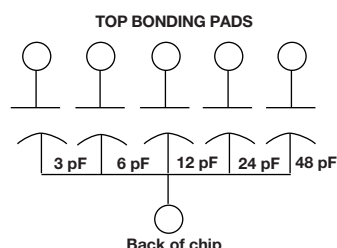
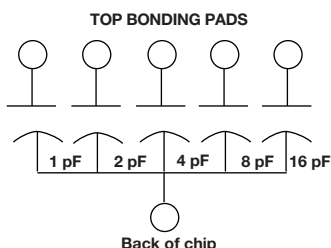
Vishay EFI CBB and CBC binary MOS multi-value capacitor chips are designed to be a useful device for trimming hybrid circuits by adding or subtracting capacitance, using normal wire-bonding techniques.

WV (DC) VALUES AND TOLERANCES

CAPACITOR MODEL	CBB	CBC	UNIT
Case Size	0402	0404	
Total Capacitance	Up to 31	Up to 93	pF
Capacitance Values (31 pF / 93 pF)	1, 2, 4, 8, 16	3, 6, 12, 24, 48	pF
Tolerance	± 10	± 10	%
DC Working Voltage	75	75	V

STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	VALUE	UNIT
Capacitance Range, CBB	Up to 31	pF
Capacitance Range, CBC	Up to 93	pF
Maximum Working Voltage	75	V
Peak Voltage at +25 °C	1.5 x working voltage	
Dissipation Factor, 1 kHz, 1 V _{RMS} , +25 °C	0.1 %	%
Q at 1 mHz, 50 mV _{RMS} , +25 °C	1000 min.	
TCC, -55 °C to +150 °C	+ 15 ± 25	ppm/°C
Insulation Resistance at Working Voltage, +25 °C	10 ⁹ min.	Ω
Operating Temperature Range	-55 to +15	°C
Thermal Shock	± 0.25 + 0.25 pF max. ΔC/C	%
Moisture Resistance, MIL-STD-202, Method 106	± 1.0 + 0.25 pF max. ΔC/C	%
Short Time Overload, +25 °C, 5 s; 1.5 x Working Voltage	± 0.25 + 0.25 pF max. ΔC/C	%
High Temperature Exposure: 100 h at +150 °C Ambient	± 0.25 + 0.25 pF max.	%
Life, MIL-STD-202, Method 108, Condition D, +125 °C Ambient, 1000 h at Working Voltage	± 2.0 + 0.25 pF max. ΔC/C	%

CONFIGURATIONS in inches

SCHEMATIC

MECHANICAL SPECIFICATIONS

PARAMETER	VALUE
Chip Size, CBB	0.019" x 0.048" $\pm$ 0.002" (0.48 mm x 1.2 mm $\pm$ 0.05 mm)
Chip Size, CBC	0.044" x 0.044" $\pm$ 0.002" (1.1 mm x 1.1 mm $\pm$ 0.05 mm)
Chip Thickness	0.010" $\pm$ 0.002" (0.254 mm $\pm$ 0.05 mm)
Chip Substrate Material	Semiconductor silicon
Dielectric	Silicon dioxide (MOS)
Bonding Pads	10 kÅ minimum aluminum (Au optional)
Backing	3 kÅ minimum gold

GLOBAL PART NUMBER INFORMATION

Global Part Number: CBB3100BLGKWS

Global Part Number Description: CBB 31 pF 25 % Au K WS

MODEL	SIZE	CAPACITANCE (pF)	CAPACITANCE MULTIPLIER CODE	TOLERANCE CODE	TERMINATION	VISUAL CLASS	PACKAGING CODE
CB Binary Capacitor	B = 19 x 48 C = 44 x 44	First 4 digits are significant figures of capacitance	C = 0.001 B = 0.01	K = 10 % M = 20 % L = 25 %	G = Au A = Al	H = class H K = class K	WS = Waffle pack, 100 min., 1 mult.



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.