

Thin Film Binary MOS Capacitors



Product may not be to scale

The CBA MOS capacitor chips each contain four different capacitors in binary increments allowing the user many choices in value selection. Two versions of CBA capacitors are available: one with a total capacitance of 3.75 pF and one with a total capacitance of 15 pF.

These chips are manufactured using Vishay Electro-Films (EFI) sophisticated Thin Film equipment and manufacturing technology. The CBAs are 100 % electrically tested and visually inspected to MIL-STD-883.

FEATURES

- Wire bondable
- User value selection
- Four capacitors with common connection
- Capacitance range: 0.25 pF to 15 pF in binary increments
- Dielectric: Silicon dioxide
- Chip size: 0.019" x 0.030"
- 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

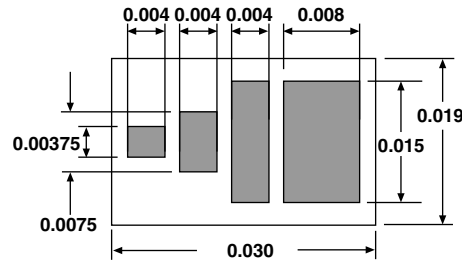
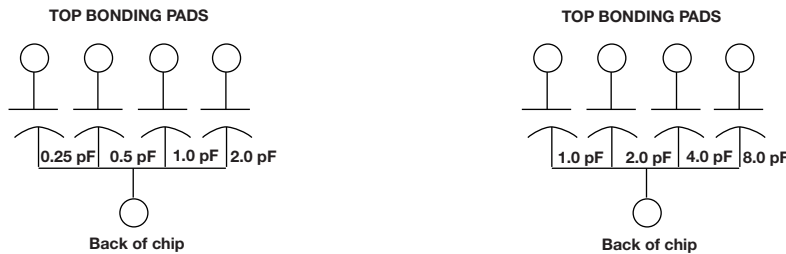
Vishay EFI CBA binary MOS multi-value capacitor chips are designed for hybrid packages in which microwave circuits are to be trimmed. This is done on the CBA chips by selecting the bonding pad for the required capacitance and wire-bonding by conventional techniques.

WV (DC) VALUES AND TOLERANCES

CAPACITOR MODEL	CBA 3.75 pF	CBA 15 pF	UNIT
Case Size	0203	0203	
Total Capacitance	3.75	15	pF
Capacitance Values	0.25, 0.50, 1.0, 2.0	1.0, 2.0, 4.0, 8.0	pF
Tolerance	± 25	± 10	%
DC Working Voltage	100	30	V

STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	VALUE	UNIT
Capacitance Range	0.25 to 15	pF
Maximum Working Voltage	100	V
Peak Voltage at + 25 °C	1.5 x working voltage	
Dissipation Factor, 1 kHz, 1 V _{RMS} , + 25 °C	0.1 max. MOS	%
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 + 150	°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	0.019" x 0.030" ± 0.002" (0.48 mm x 0.75 mm ± 0.05 mm)
Chip Thickness	0.010" ± 0.003" (0.25 mm ± 0.08 mm)
Chip Substrate Material	Semiconductor silicon
Dielectric	Silicon dioxide (MOS)
Bonding Pads	10 kÅ minimum aluminum
Backing	3 kÅ minimum gold

GLOBAL PART NUMBER INFORMATION													
Global Part Number: CBA3750CMAHWS													
Global Part Number Description: CBA 3.75 pF 20 % Al H WS													
	C	B	A	3	7	5	0	C	M	A	H	W	S
MODEL	CAPACITANCE (pF)		CAPACITANCE MULTIPLIER CODE		TOLERANCE CODE		TERMINATION		VISUAL CLASS		PACKAGING CODE		
CBA	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.

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.