



Data Sheet

Customer:

Product: Multilayer Chip Beads – CBM Series

Sizes.: 0402/0603/0805/1204/1210/1808/1812

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Multilayer Chip Beads

Multilayer Chip Beads



■Features

CBM02/03/05 H material General current

- Monolithic inorganic material construction
- Closed magnetic circuit avoids crosstalk
- SMD Type & suitable for reflow and wave soldering
- Available in various sizes
- Excellent solderability and heat resistance
- High reliability
- With a sharp and frequency frequency impedance characteristics which can effectively filter high frequency noise without attenuating high frequency signal

CBM02/03 P material High current

- Combination of high frequency noise suppression with capability of handing high current
- The current rating up to 8 Amps with low DCR

CBM02/03/05/04/10/08 S/B material General current

- Monolithic inorganic material construction
- Closed magnetic circuit avoids crosstalk
- SMD Type & suitable for reflow and wave soldering
- Available in various sizes
- Excellent solderability and heat resistance
- High reliability
- Effectively filtering capability over a wide range of frequency

CBM02/03/05/04/10/08/12 S material High current

- Combination of high frequency noise suppression with capability of handing high current
- The current rating up to 6 Amps with low DCR

■Applications

CBM02/03/05 H material General current

- Filtering between analog and digital circuitry, clock generation circuitry, I/O interconnects, isolation between RF noisy circuits and logic devices susceptible to functional degradation, power supply filtering to prevent conducted RF energy from corrupting the power generation circuitry. Sharp impedance characteristics can effectively minimize attenuation, high frequency EMI prevention of LCD monitor, PDA, Computers, Computer peripherals, Cellular Equipment, Digital TV, Digital Cameras, Audio/Visual Equipment, DVD, Wireless Communication Devices, MP3.

CBM02/03 P material High current

- High current DC power lines
- Circuits where a stable ground is unavailable

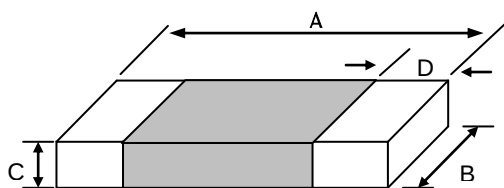
CBM02/03/05/04/10/08 S/B material General current

- Filtering between analog and digital circuitry, clock generation circuitry, I/O interconnects, isolation between RF noisy circuits and logic devices susceptible to functional degradation, power supply filtering to prevent conducted RF energy from corrupting the power generation circuitry, high frequency EMI prevention of computer, printers, VCRs, TVs and portable telephones

CBM02/03/05/04/10/08/12 S material High current

- High current DC power lines
- Circuits where a stable ground is unavailable

■Dimensions



Type	Size (Inch)	A (mm)	B (mm)	C (mm)	D (mm)
CBM02	0402	1.0±0.10	0.50±0.10	0.50±0.10	0.25±0.10
	0402 (for P Material)	1.0±0.05	0.50±0.05	0.50±0.05	0.25±0.10
CBM03	0603 (for P Material, ≤120Ω)	1.6±0.15	0.80±0.15	0.60±0.15	0.30±0.20
	0603	1.6±0.15	0.80±0.15	0.80±0.15	0.30±0.20
CBM05	0805	2.0±0.20	1.25±0.20	0.90±0.20	0.50±0.30
		2.0±0.20	1.25±0.20	1.25±0.20	0.50±0.30
CBM04	1204	3.2±0.20	1.60±0.20	1.10±0.20	0.50±0.30
CBM10	1210	3.2±0.20	2.50±0.20	1.30±0.20	0.50±0.30
CBM08	1808	4.5±0.25	1.60±0.20	1.60±0.20	0.60±0.40
CBM12	1812	4.5±0.25	3.20±0.25	1.50±0.25	0.60±0.40

Multilayer Chip Beads
■Part Numbering

CBM	03	Y	T	H	N	601
Product Type	Dimensions	Impedance Tolerance	Packaging Code	Material Code	Current	Impedance
	02: 0402 03: 0603 05: 0805 04: 1204 10: 1210 08: 1808 12: 1812	Y: ±25%	T: Taping Reel	H: H material S: S material P: P material B: B material	N: General current H: High current	700: 70Ω 121: 120Ω 102: 1000Ω

■Standard Electrical Specifications(for General Signal Line Use)
CBM02(100505) / B material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM02YTNB102	1000	±25%	100	1.00	200
CBM02YTNB102-1	1000	±25%	100	1.00	300
CBM02YTNB152	1500	±25%	100	1.50	150
CBM02YTNB182	1800	±25%	100	1.50	150

CBM02(100505) / H material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM02YTHN220-1	22	±25%	100	0.35	300
CBM02YTHN470-2	47	±25%	100	0.40	300
CBM02YTHN750	75	±25%	100	0.40	300
CBM02YTHN121	120	±25%	100	0.55	300
CBM02YTHN221-1	220	±25%	100	0.60	200

CBM03(160808) / H material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM03YTHN200-1	20	±25%	100	0.25	500
CBM03YTHN750	75	±25%	100	0.35	500
CBM03YTHN800	80	±25%	100	0.35	500
CBM03YTHN121-1	120	±25%	100	0.45	200
CBM03YTHN301-1	300	±25%	100	0.45	200
CBM03YTHN601-1	600	±25%	100	0.50	200

CBM05(201209) / H material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM05YTHN121-1	120	±25%	100	0.25	200
CBM05YTHN221	220	±25%	100	0.25	200
CBM05YTHN301	300	±25%	100	0.25	200
CBM05YTHN601-1	600	±25%	100	0.35	200

CBM02(100505) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM02YTSN100	10	±25%	100	0.10	500
CBM02YTSN200	20	±25%	100	0.20	300
CBM02YTSN300	30	±25%	100	0.10	800
CBM02YTSN600	60	±25%	100	0.15	800
CBM02YTSN700	70	±25%	100	0.25	700
CBM02YTSN800	80	±25%	100	0.12	800

Multilayer Chip Beads

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM02YTSN101	100	±25%	100	0.25	500
CBM02YTSN121-1	120	±25%	100	0.19	600
CBM02YTSN221	220	±25%	100	0.30	700
CBM02YTSN241	240	±25%	100	0.40	400
CBM02YTSN301	300	±25%	100	0.40	800
CBM02YTSN601	600	±25%	100	0.50	500
CBM02YTSN102	1000	±25%	100	1.50	300

■Standard Electrical Specifications(for General Signal Line Use)

CBM03(160808) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM03YTSN100	10	±25%	100	0.05	600
CBM03YTSN300	30	±25%	100	0.08	600
CBM03YTSN600	60	±25%	100	0.10	600
CBM03YTSN800	80	±25%	100	0.10	600
CBM03YTSN101	100	±25%	100	0.15	600
CBM03YTSN121	120	±25%	100	0.10	800
CBM03YTSN181	180	±25%	100	0.30	600
CBM03YTSN221	220	±25%	100	0.25	700
CBM03YTSN301-1	300	±25%	100	0.35	600
CBM03YTSN471	470	±25%	100	0.35	500
CBM03YTSN601	600	±25%	100	0.40	600
CBM03YTSN102	1000	±25%	100	0.50	600
CBM03YTSN152	1500	±25%	100	0.60	500
CBM03YTSN182	1800	±25%	100	0.70	300
CBM03YTSN182-1	1800	±25%	100	0.70	200
CBM03YTSN202	2000	±25%	100	0.70	100
CBM03YTSN222	2200	±25%	100	0.70	200
CBM03YTSN252	2500	±25%	100	0.70	200

CBM05(201209) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM05YTSN300	30	±25%	100	0.05	800
CBM05YTSN400	40	±25%	100	0.05	800
CBM05YTSN600	60	±25%	100	0.15	800
CBM05YTSN800	80	±25%	100	0.15	800
CBM05YTSN121	120	±25%	100	0.15	800
CBM05YTSN151	150	±25%	100	0.15	800
CBM05YTSN301	300	±25%	100	0.20	700
CBM05YTSN601	600	±25%	100	0.20	700
CBM05YTSN601-1	600	±25%	100	0.30	500
CBM05YTSN102	1000	±25%	100	0.35	500
CBM05YTSN152	1500	±25%	100	0.40	500
CBM05YTSN202	2000	±25%	100	0.30	500

CBM04(321611) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM04YTSN500	50	±25%	100	0.08	800
CBM04YTSN700	70	±25%	100	0.10	800
CBM04YTSN121	120	±25%	100	0.15	800
CBM04YTSN601	600	±25%	100	0.30	500
CBM04YTSN102	1000	±25%	100	0.40	500
CBM04YTSN122	1200	±25%	100	0.40	500
CBM04YTSN152	1500	±25%	50	0.50	200
CBM04YTSN202	2000	±25%	30	0.50	200

Multilayer Chip Beads

CBM10(322513) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM10YTSN900	90	±25%	100	0.30	800

CBM08(451616) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM08YTSN800	80	±25%	100	0.10	800

Standard Electrical Specifications(For High Current Line Use)

CBM02(100505) / P material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)	
					85℃	125℃
CBM02YTPH330	33	±25%	100	0.022	3000	1700
CBM02YTPH600	60	±25%	100	0.032	2500	1400
CBM02YTPH800	80	±25%	100	0.038	2300	1300
CBM02YTPH121	120	±25%	100	0.055	2000	1100
CBM02YTPH181	180	±25%	100	0.090	1500	800
CBM02YTPH221	220	±25%	100	0.100	1400	800
CBM02YTPH331	330	±25%	100	0.150	1200	700
CBM02YTPH471	470	±25%	100	0.200	1000	600
CBM02YTPH601	600	±25%	100	0.230	900	500

CBM03(160808) / P material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)	
					85℃	125℃
CBM03YTPH220	22	±25%	100	0.004	8000	5000
CBM03YTPH220-1	22	±25%	100	0.007	6000	4000
CBM03YTPH260	26	±25%	100	0.007	6000	4000
CBM03YTPH300	30	±25%	100	0.007	6000	4000
CBM03YTPH300-1	30	±25%	100	0.010	5000	3000
CBM03YTPH700	70	±25%	100	0.022	3500	2000
CBM03YTPH101	100	±25%	100	0.030	3000	1900
CBM03YTPH121	120	±25%	100	0.030	3000	1900
CBM03YTPH221	220	±25%	100	0.050	2200	1500
CBM03YTPH331	330	±25%	100	0.080	1700	1200
CBM03YTPH471	470	±25%	100	0.130	1500	1000
CBM03YTPH601	600	±25%	100	0.150	1300	1000

CBM02(100505) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM02YTSH100	10	±25%	100	0.09	2000
CBM02YTSH330	33	±25%	100	0.04	3000
CBM02YTSH600	60	±25%	100	0.07	2500
CBM02YTSH121	120	±25%	100	0.15	1500

CBM03(160808) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM03YTSH330	33	±25%	100	0.04	3000
CBM03YTSH800	80	±25%	100	0.04	3000
CBM03YTSH121	120	±25%	100	0.09	2000

Multilayer Chip Beads

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM03YTSH331	330	±25%	100	0.09	2000
CBM03YTSH471	470	±25%	100	0.20	1000
CBM03YTSH471-1	470	±25%	100	0.15	1500
CBM03YTSH601	600	±25%	100	0.09	2000

■ Standard Electrical Specifications(For High Current Line Use)

CBM05(201209) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM05YTSH220	22	±25%	100	0.015	6000
CBM05YTSH300	30	±25%	100	0.04	3000
CBM05YTSH310	31	±25%	100	0.015	6000
CBM05YTSH400	40	±25%	100	0.03	4000
CBM05YTSH600	60	±25%	100	0.04	3000
CBM05YTSH600-1	60	±25%	100	0.02	5000
CBM05YTSH800	80	±25%	100	0.04	3000
CBM05YTSH800-1	80	±25%	100	0.02	5000
CBM05YTSH121	120	±25%	100	0.04	3000
CBM05YTSH121-1	120	±25%	100	0.02	5000
CBM05YTSH181	180	±25%	100	0.03	4000
CBM05YTSH221	220	±25%	100	0.09	2000
CBM05YTSH301	300	±25%	100	0.09	2000
CBM05YTSH331	330	±25%	100	0.09	2000
CBM05YTSH331-1	330	±25%	100	0.07	2500
CBM05YTSH421	420	±25%	100	0.20	1000
*CBM05YTSH102-1	1000	±25%	100	0.09	2000
CBM05YTSH152	1500	±25%	100	0.30	1000

■ "★" : The thickness 1.25±0.20mm

CBM04(321611) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM04YTSH300	30	±25%	100	0.015	6000
CBM04YTSH380	38	±25%	100	0.02	5000
CBM04YTSH500	50	±25%	100	0.04	3000
CBM04YTSH500-1	50	±25%	100	0.015	6000
CBM04YTSH800	80	±25%	100	0.03	4000
CBM04YTSH121	120	±25%	100	0.015	6000
CBM04YTSH501	500	±25%	100	0.04	3000
CBM04YTSH122	1200	±25%	100	0.20	1000

CBM10(322513) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM10YTSH102	1000	±25%	50	0.09	2000

CBM08(451616) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM08YTSH600	60	±25%	100	0.015	6000
CBM08YTSH181	180	±25%	100	0.02	3500

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CBM12(453215) / S material

Part No.	Impedance (Ω)	Tolerance	Test Freq. (MHz)	DCR (Ω) max.	Rated Current (mA)
CBM12YTSH121	120	±25%	100	0.015	6000
CBM12YTSH681	680	±25%	100	0.03	4000
CBM12YTSH132	1300	±25%	60	0.04	3000

■ Test Level : 250 mV

■ Test Instruments :

Agilent E4991a/b Rf Impedance / Material Analyzer or Equivalent

Hp4338a/b Milliohm meter

Agilent E5071c Ena Series Network Analyzer

Hp6632b System Dc Power Supply

■ Environmental Characteristics

Item	Specification	Test Methods
Thermal Shock	No mechanical damage Impedance value should be within ±20% of the initial value	Temperature : -40 ~ +85°C (S material_ High current) Temperature : -55 ~ +125°C Cycle : 100 cycles Dwell time : 30minutes Measurement : at ambient temperature 24 hrs after test completion
Operational Life	No mechanical damage Impedance value should be within ±20% of the initial value	Temperature : 125±5°C Test time : 1000 hrs Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion
Rated Current Test	Apply current : full rated current / 5min	Temperature rise should be less than 25°C Temperature rise should be less than 40°C (High current)
Biased Humidity	No mechanical damage Impedance value should be within ±20% of the initial value	Temperature : 40±2°C Humidity : 90 ~ 95% RH Test time : 1000 hrs Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion
Solderability	More than 95% of terminal electrode should be covered with new solder No mechanical damage	Solder temperature : 235±5°C Flux : Rosin DIP time : 5±1 sec
Resistance to Solder Heat	More than 95% of terminal electrode should be covered with new solder No mechanical damage Impedance value should be within ±20% of the initial value	Solder temperature : 260±5°C Flux : Rosin DIP time : 10±1 sec
Adhesive Test	No mechanical damage Soldering the products on PCB after the pulling test force > 5 N	Reflow temperature : 245°C It shall be Soldered on the substrate applying direction parallel to the substrate Apply force(F) : 5 N Test time : 10 sec
Steam Aging Test	More than 95% of terminal electrode should be covered with new solder	Temperature : 93°C Test time : 4 hrs(CBM02) Others : 8 hrs Solder temperature : 235±5°C Flux : Rosin DIP time : 5±1 sec

■ Operating Temperature: -55°C ~ 125°C

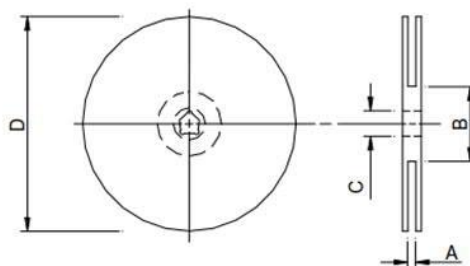
■ Storage Temperature: < 40°C ; Humidity 70%RH

■ Shelf life: 1 years Max

Multilayer Chip Beads

■ Packaging

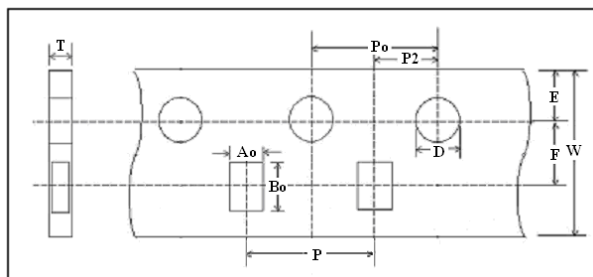
Reel Specifications & Packaging Quantity



Type	Packaging Quantity		Reel Diameter	A (mm)	B (mm)	C (mm)	D (mm)
CBM02	Paper	10K	7 inch	10.0±1.5	50 or more	13.2±1.0	178.0±2.0
CBM03	Paper	4K	7 inch	10.0±1.5	50 or more	13.2±1.0	178.0±2.0
CBM05	Paper	4K	7 inch	10.0±1.5	50 or more	13.2±1.0	178.0±2.0
	*Plastic	3K					
CBM04	Plastic	3K	7 inch	10.0±1.5	50 or more	13.2±1.0	178.0±2.0
CBM10	Plastic	2K	7 inch	10.0±1.5	50 or more	13.2±1.0	178.0±2.0
CBM08	Plastic	2K	7 inch	10.0±1.5	50 or more	13.2±1.0	178.0±2.0
CBM12	Plastic	1K	7 inch	10.0±1.5	50 or more	13.2±1.0	178.0±2.0

■** : Product thickness: 1.25±0.20mm

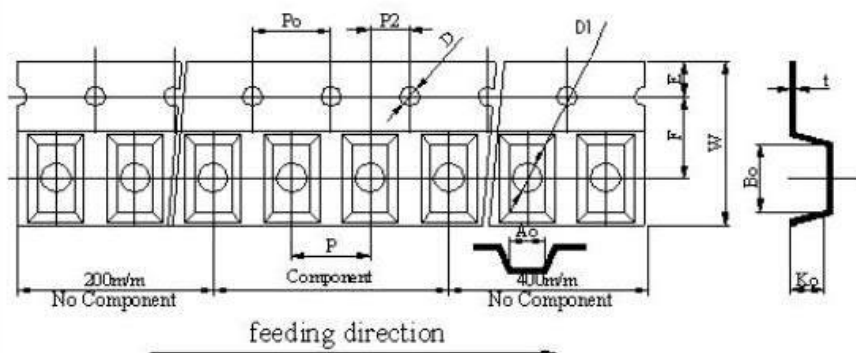
Paper Tape Specifications



Type	W (mm)	P (mm)	E (mm)	F (mm)	D (mm)	P0 (mm)	P2 (mm)	A0 (mm)	B0 (mm)	T (mm)
CBM02	8.0±0.1	2.0±0.05	1.75±0.05	3.5±0.05	1.55±0.05	4.0±0.1	2.0±0.05	0.62±0.03	1.12±0.03	0.6±0.03
CBM03	8.0±0.1	4.0±0.1	1.75±0.1	3.5±0.1	1.56±0.1	4.0±0.1	2.0±0.1	1.05±0.05 *0.97±0.05	1.85±0.05 *1.80±0.05	0.95±0.05 *0.75±0.05
CBM05	8.0±0.1	4.0±0.1	1.75±0.1	3.5±0.1	1.56±0.1	4.0±0.1	2.0±0.1	1.5±0.05	2.3±0.05	0.95±0.05

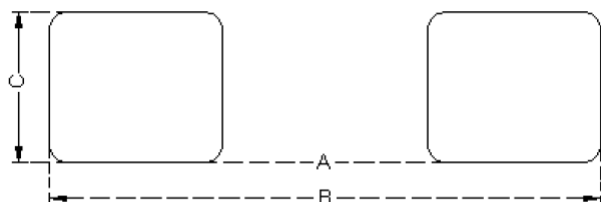
■** : Product thickness: 0.60±0.15mm

Plastic Tape Specifications



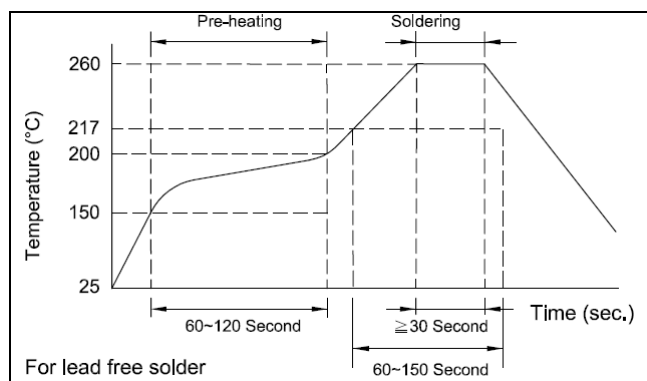
Type	W (mm)	P (mm)	E (mm)	F (mm)	D (mm)	D1 (mm)	P0 (mm)	P2 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	t (mm)
CBM05	7.9~8.3	4.0±0.1	1.75±0.1	3.5±0.05	1.5±0.05	0.95~1.2	4.0±0.1	2.0±0.05	1.42±0.1	2.26±0.1	1.3±0.1	0.23±0.1
CBM04	7.9~8.3	4.0±0.1	1.75±0.1	3.5±0.05	1.55±0.05	0.95~1.2	4.0±0.1	2.0±0.05	1.85±0.1	3.43±0.1	1.22±0.1	0.25±0.1
CBM10	7.7~8.3	4.0±0.1	1.75±0.1	3.5±0.05	1.55±0.05	0.95~1.2	4.0±0.1	2.0±0.05	2.57±0.1	3.4±0.1	1.32±0.1	0.25±0.1
CBM08	11.7~12.3	4.0±0.1	1.75±0.1	5.5±0.05	1.55±0.05	1.5~1.75	4.0±0.1	2.0±0.05	1.83±0.1	4.85±0.1	1.83±0.1	0.29±0.1
CBM12	12.0±0.1	8.0±0.1	1.75±0.1	5.5±0.05	1.55±0.05	1.5~1.75	4.0±0.1	2.0±0.05	3.66±0.1	4.95±0.1	1.83±0.1	0.23±0.1

Recommend Land Pattern



Type	A (mm)	B (mm)	C (mm)
CBM02	0.4	1.2~1.4	0.5
CBM03	0.7	1.8~2.0	0.7
CBM05	1.2	3.0~4.0	1.0
CBM04	2.0	4.2~5.2	1.2
CBM10	2.0	4.2~5.2	3.4
CBM08	3.0	5.5~6.5	1.2
CBM12	3.0	5.5~6.5	4.22

■Soldering Condition



REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A5	Apr 15 ,2025		-Add Shelf life.
			-Remove the specifications of full-size A/K/I materials.
			-Add specifications for General Current: CBM02 B material, CBM02/03/05 H material, and CBM02/03/05/04/10/08 S material.
Version A6	Oct 17 ,2025		-Add specifications for High Current: CBM02/03 P material and CBM02/03/05/04/10/08/12 S material.
			-Modify the content of Environmental Characteristics.
			-Modify the packaging specifications for full-size materials.