

Specification for Approval

Date: 2024/1/1

Customer:

BYTEK P/N: FCDP SERIES

CUSTOMER P/N:

DESCRIPTION:

QUANTITY: pcs

REMARK:

Customer Approval Feedback

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Multilayer Chip Ferrite Power Inductor

FCDP SERIES

- 1.Features
- 1.Monolithic inorganic material construction.

2.Closed magnetic circuit avoids crosstalk.

3.S.M.T. type.

4.Suitable for flow and reflow soldering.

5.Shapes and dimensions follow E.I.A. spec.

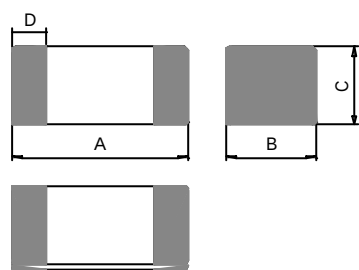
6.Available in various sizes.

7.Excellent solderability and heat resistance.

8.High reliability.

9.This component is compliant with RoHS legislation and also support lead-free soldering.

2.Dimensions



单位Unit: mm (inch)

Size	A	B	C	D
160808	1.6±0.20 (0.063±0.008)	0.8±0.20 (0.031±0.008)	0.8±0.20 (0.031±0.008)	0.3±0.2 (0.01±0.008)
201209	2.0±0.20 (0.079±0.008)	1.2±0.20 (0.047±0.008)	0.9±0.20 (0.035±0.008)	0.5±0.3 (0.020±0.012)
252009	2.5±0.20 (0.098±0.008)	2.0±0.20 (0.079±0.008)	0.9±0.20 (0.035±0.008)	0.5±0.3 (0.020±0.012)
321609	3.2±0.20 (0.126±0.008)	1.6±0.20 (0.063±0.008)	0.9±0.20 (0.035±0.008)	0.5±0.3 (0.020±0.012)

3. Part Numbering

FCDP

160808

A

-

1R0

M

-

02

A

B

C

D

E

F

A: Series

B: Dimension

C: Material

D: Inductance

E: Inductance Tolerance

F: code

L x W

1R0=1.0uH

K=± 10%, J=± 5%, M=± 20%

4. Specification

Part NO		Tolerance (%)	Inductance (μH)	RDC (Ω) max	Test frequency (MHz)	Test voltage (mV)	SRF (MHz) min	Rated current (mA)max
FCDP160808A-47NM-02		±20	0.047	0.12	1	50	260	150
FCDP160808A-56NM-02		±20	0.056	0.12	1	50	260	150
FCDP160808A-68NM-02		±20	0.068	0.12	1	50	250	150
FCDP160808A-82NM-02		±20	0.082	0.12	1	50	245	150
FCDP160808A-R10M-02		±20	0.10	0.15	1	50	240	150
FCDP160808A-R12M-02		±20	0.12	0.20	1	50	205	150
FCDP160808A-R15M-02		±20	0.15	0.20	1	50	180	150
FCDP160808A-R18M-02		±20	0.18	0.20	1	50	165	150
FCDP160808A-R22M-02		±20	0.22	0.25	1	50	150	150
FCDP160808A-R27M-02		±20	0.27	0.30	1	50	136	100
FCDP160808A-R33M-02		±20	0.33	0.30	1	50	125	100
FCDP160808A-R39M-02		±20	0.39	0.35	1	50	110	100
FCDP160808A-R47M-02		±20	0.47	0.45	1	50	105	100
FCDP160808A-R56M-02		±20	0.56	0.45	1	50	95	100
FCDP160808A-R68M-02		±20	0.68	0.55	1	50	90	100
FCDP160808A-R82M-02		±20	0.82	0.60	1	50	85	100
FCDP160808A-1R0M-02		±20	1.0	0.30	1	50	75	150
FCDP160808A-1R2M-02		±20	1.2	0.30	1	50	65	150
FCDP160808A-1R5M-02		±20	1.5	0.35	1	50	60	120
FCDP160808A-1R8M-02		±20	1.8	0.40	1	50	55	120
FCDP160808A-2R2M-02		±20	2.2	0.50	1	50	50	120
FCDP160808A-2R7M-02		±20	2.7	0.60	1	50	45	100
FCDP160808A-3R3M-02		±20	3.3	0.65	1	50	40	100
FCDP160808A-3R9M-02		±20	3.9	0.70	1	50	35	80
FCDP160808A-4R7M-02		±20	4.7	0.75	1	50	33	80
FCDP160808A-5R6M-02		±20	5.6	0.90	1	50	22	60
FCDP160808A-6R8M-02		±20	6.8	0.90	1	50	20	60
FCDP160808A-8R2M-02		±20	8.2	1.05	1	50	18	60
FCDP160808A-100M-02		±20	10	1.15	1	50	17	60
FCDP160808A-120M-02		±20	12	1.25	1	50	15	60

Part NO		Tolerance (%)	Inductance (μ H)	RDC (Ω) max	Test frequency (MHz)	Test voltage (mV)	SRF (MHz) min	Rated current (mA)max
FCDP201209A-47NM-02		± 20	0.047	0.15	1	50	320	350
FCDP201209A-56NM-02		± 20	0.056	0.15	1	50	320	350
FCDP201209A-68NM-02		± 20	0.068	0.20	1	50	280	350
FCDP201209A-82NM-02		± 20	0.082	0.20	1	50	280	350
FCDP201209A-R10M-02		± 20	0.10	0.20	1	50	235	350
FCDP201209A-R12M-02		± 20	0.12	0.20	1	50	220	350
FCDP201209A-R15M-02		± 20	0.15	0.20	1	50	200	350
FCDP201209A-R18M-02		± 20	0.18	0.25	1	50	185	300
FCDP201209A-R22M-02		± 20	0.22	0.25	1	50	170	300
FCDP201209A-R27M-02		± 20	0.27	0.25	1	50	150	300
FCDP201209A-R33M-02		± 20	0.33	0.25	1	50	145	300
FCDP201209A-R39M-02		± 20	0.39	0.30	1	50	135	250
FCDP201209A-R47M-02		± 20	0.47	0.30	1	50	125	250
FCDP201209A-R56M-02		± 20	0.56	0.36	1	50	115	200
FCDP201209A-R68M-02		± 20	0.68	0.36	1	50	105	200
FCDP201209A-R82M-02		± 20	0.82	0.36	1	50	100	200
FCDP201209A-1R0M-02		± 20	1.0	0.26	1	50	75	220
FCDP201209A-1R2M-02		± 20	1.2	0.26	1	50	65	220
FCDP201209A-1R5M-02		± 20	1.5	0.30	1	50	60	180
FCDP201209A-1R8M-02		± 20	1.8	0.30	1	50	55	180
FCDP201209A-2R2M-02		± 20	2.2	0.36	1	50	50	150
FCDP201209A-2R7M-02		± 20	2.7	0.36	1	50	45	150
FCDP201209A-3R3M-02		± 20	3.3	0.40	1	50	41	120
FCDP201209A-3R9M-02		± 20	3.9	0.40	1	50	38	120
FCDP201209A-4R7M-02		± 20	4.7	0.40	1	50	35	120
FCDP201209A-5R6M-02		± 20	5.6	0.60	1	50	32	100
FCDP201209A-6R8M-02		± 20	6.8	0.60	1	50	29	100
FCDP201209A-8R2M-02		± 20	8.2	0.65	1	50	26	100
FCDP201209A-100M-02		± 20	10	0.65	1	50	24	100
FCDP201209A-120M-02		± 20	12	0.65	1	50	22	100
FCDP201209A-150M-02		± 20	15	0.75	1	50	19	50
FCDP201209A-180M-02		± 20	18	0.75	1	50	18	50
FCDP201209A-220M-02		± 20	22	0.75	1	50	16	50

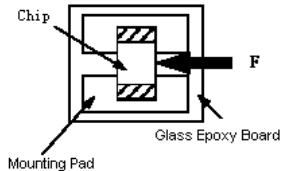
Part NO		Tolerance (%)	Inductance (μH)	RDC (Ω) max	Test frequency (MHz)	Test voltage (mV)	SRF (MHz) min	Rated current (mA)max
FCDP321609A-47NM-02		±20	0.047	0.15	1	50	320	450
FCDP321609A-56NM-02		±20	0.056	0.15	1	50	320	450
FCDP321609A-68NM-02		±20	0.068	0.20	1	50	280	450
FCDP321609A-82NM-02		±20	0.082	0.20	1	50	280	450
FCDP321609A-R10M-02		±20	0.10	0.20	1	50	235	350
FCDP321609A-R12M-02		±20	0.12	0.20	1	50	220	350
FCDP321609A-R15M-02		±20	0.15	0.20	1	50	200	350
FCDP321609A-R18M-02		±20	0.18	0.20	1	50	185	350
FCDP321609A-R22M-02		±20	0.22	0.20	1	50	170	350
FCDP321609A-R27M-02		±20	0.27	0.20	1	50	150	350
FCDP321609A-R33M-02		±20	0.33	0.20	1	50	145	350
FCDP321609A-R39M-02		±20	0.39	0.30	1	50	135	220
FCDP321609A-R47M-02		±20	0.47	0.30	1	50	125	220
FCDP321609A-R56M-02		±20	0.56	0.30	1	50	115	220
FCDP321609A-R68M-02		±20	0.68	0.30	1	50	105	220
FCDP321609A-R82M-02		±20	0.82	0.30	1	50	100	220
FCDP321609A-1R0M-02		±20	1.0	0.20	1	50	75	250
FCDP321609A-1R2M-02		±20	1.2	0.20	1	50	65	250
FCDP321609A-1R5M-02		±20	1.5	0.25	1	50	60	250
FCDP321609A-1R8M-02		±20	1.8	0.25	1	50	55	250
FCDP321609A-2R2M-02		±20	2.2	0.30	1	50	50	200
FCDP321609A-2R7M-02		±20	2.7	0.30	1	50	45	200
FCDP321609A-3R3M-02		±20	3.3	0.30	1	50	41	200
FCDP321609A-3R9M-02		±20	3.9	0.35	1	50	38	150
FCDP321609A-4R7M-02		±20	4.7	0.35	1	50	35	150
FCDP321609A-5R6M-02		±20	5.6	0.50	1	50	32	100
FCDP321609A-6R8M-02		±20	6.8	0.50	1	50	29	100
FCDP321609A-8R2M-02		±20	8.2	0.50	1	50	26	100
FCDP321609A-100M-02		±20	10	0.50	1	50	24	100
FCDP321609A-120M-02		±20	12	0.60	1	50	22	100
FCDP321609A-150M-02		±20	15	0.80	1	50	19	50
FCDP321609A-180M-02		±20	18	0.80	1	50	18	50
FCDP321609A-220M-02		±20	22	1.00	1	50	16	50
FCDP321609A-270M-02		±20	27	1.00	1	50	14	50

Part NO		Tolerance (%)	Inductance (μ H)	RDC (Ω) max	Test frequency (MHz)	Test voltage (mV)	SRF (MHz) min	Rated current (mA)max
FCDP201209B-47NM-02		± 20	0.047	0.10	1	50	280	1100
FCDP201209B-56NM-02		± 20	0.056	0.10	1	50	280	1100
FCDP201209B-68NM-02		± 20	0.068	0.15	1	50	250	1100
FCDP201209B-82NM-02		± 20	0.082	0.15	1	50	250	1100
FCDP201209B-R10M-02		± 20	0.10	0.15	1	50	210	1100
FCDP201209B-R12M-02		± 20	0.12	0.15	1	50	200	1100
FCDP201209B-R15M-02		± 20	0.15	0.15	1	50	175	1100
FCDP201209B-R18M-02		± 20	0.18	0.15	1	50	160	1100
FCDP201209B-R22M-02		± 20	0.22	0.15	1	50	150	1100
FCDP201209B-R27M-02		± 20	0.27	0.15	1	50	130	1100
FCDP201209B-R33M-02		± 20	0.33	0.15	1	50	120	1100
FCDP201209B-R39M-02		± 20	0.39	0.15	1	50	110	1100
FCDP201209B-R47M-02		± 20	0.47	0.15	1	50	100	1100
FCDP201209B-R56M-02		± 20	0.56	0.36	1	50	100	800
FCDP201209B-R68M-02		± 20	0.68	0.36	1	50	95	800
FCDP201209B-R82M-02		± 20	0.82	0.36	1	50	90	800
FCDP201209B-1R0M-02		± 20	1.0	0.24	1	50	75	800
FCDP201209B-1R2M-02		± 20	1.2	0.24	1	50	65	800
FCDP201209B-1R5M-02		± 20	1.5	0.30	1	50	60	700
FCDP201209B-1R8M-02		± 20	1.8	0.36	1	50	55	600
FCDP201209B-2R2M-02		± 20	2.2	0.36	1	50	50	600
FCDP201209B-2R7M-02		± 20	2.7	0.36	1	50	45	600
FCDP201209B-3R3M-02		± 20	3.3	0.40	1	50	41	350
FCDP201209B-3R9M-02		± 20	3.9	0.40	1	50	38	350
FCDP201209B-4R7M-02		± 20	4.7	0.40	1	50	35	350
FCDP201209B-5R6M-02		± 20	5.6	0.50	1	50	32	250
FCDP201209B-6R8M-02		± 20	6.8	0.50	1	50	29	250
FCDP201209B-8R2M-02		± 20	8.2	0.56	1	50	26	250
FCDP201209B-100M-02		± 20	10	0.56	1	50	24	250
FCDP201209B-120M-02		± 20	12	0.56	1	50	22	250
FCDP201209B-150M-02		± 20	15	0.65	1	50	19	100

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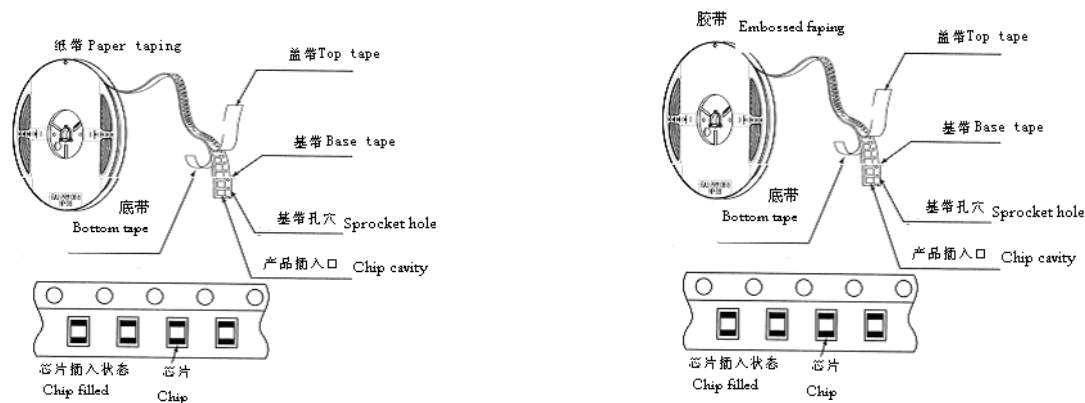
5. Reliability and Test Condition

No.	Items	Requirements	Test Methods and Remarks
1	Operating Temperature Range	-40℃~+85℃	including the IRMS for surface of the products
2	Solder ability	At least 95% of terminal electrode should be covered with solder	Preheating temperature:120 to 150 Preheating time: 60s Solder 96.5%Sn/3.0%Ag/0.5%Cu of the Sn solder. Solder temperature: 245±5 Immersion tin depth:10mm Duration : 5±1s Dip performance to a flux of about:3 ~ 5 s
3	Resistance to Soldering	At least 95% of terminal electrode should be covered with solder. No mechanical damage. Inductance : Q value change(ferrite): within ±30%	Preheating temperature: 120℃ to 150℃ Preheating time: 60s Solder 96.5%Sn/3.0%Ag/0.5%Cu of the Sn solder. Solder temperature: 260℃±5℃ Immersion tin depth:10mm Duration : 10±1s Dip performance to a flux of about:3 ~ 5 s
4	Adhesion of electrode	The termination and body should be no damage.	Applied force: 5N force for 1005 and 1608 series; 10N force for 2012、3216 series; 15N force for 3225、4532 series; Keep time : 10±1S 
5	Low temperature resistance	No mechanical damage. Inductance change: within ±20%	Temperature:-40±2℃ +24 Testing time:1000 ⁻⁰ _h

No.	Items	Requirements	Test Methods and Remarks
6	Bending strength	No mechanical damage	Testing board: glass epoxy-resin substrate For 1 mm/s compression speed, curvature: 2mm, hold time 30 s.
7	Vibration	No mechanical damage. Inductance change: within $\pm 10\%$ Q value change(ferrite): within $\pm 30\%$	Amplitude modulation: 1.5mm Test time: A period of 2h in each of 3 mutually perpendicular directions. Frequency range: 10Hz to 55Hz to 10Hz for 1min.
8	High temperature resistance	No mechanical damage. Inductance change: within $\pm 10\%$ Q value change(ferrite): within $\pm 30\%$	Testing time: $1000 \begin{smallmatrix} +24h \\ -0 \end{smallmatrix}$ Temperature: $85 \pm 2^\circ\text{C}$
9	Static Humidity	No mechanical damage. Inductance change: within $\pm 20\%$	Humidity: 90% to 95% RH Temperature: $60^\circ\text{C} \pm 2^\circ\text{C} + \begin{smallmatrix} 24 \\ -0 \end{smallmatrix} \text{h}$ Testing time: $1000 \begin{smallmatrix} +24h \\ -0 \end{smallmatrix}$
10	High temperature load	No mechanical damage. Inductance change: within $\pm 20\%$	impose current: at room Testing time: $1000 \begin{smallmatrix} +24h \\ -0 \end{smallmatrix}$ Temperature: $85 \pm 2^\circ\text{C}$
11	Temperature Shock	No mechanical damage. Inductance change: within $\pm 10\%$ Q value change(ferrite): within $\pm 30\%$	Temperature: -40°C for $30 \pm 3\text{min}$ $+85^\circ\text{C}$ for $30 \pm 3\text{min}$ Number of cycles: 32

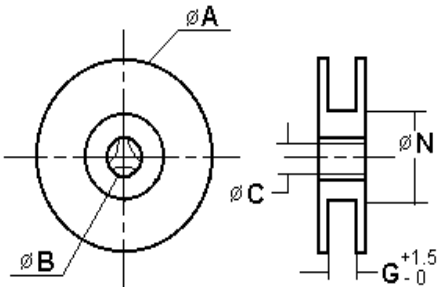
6. Packaging

6-1 Taping drawings

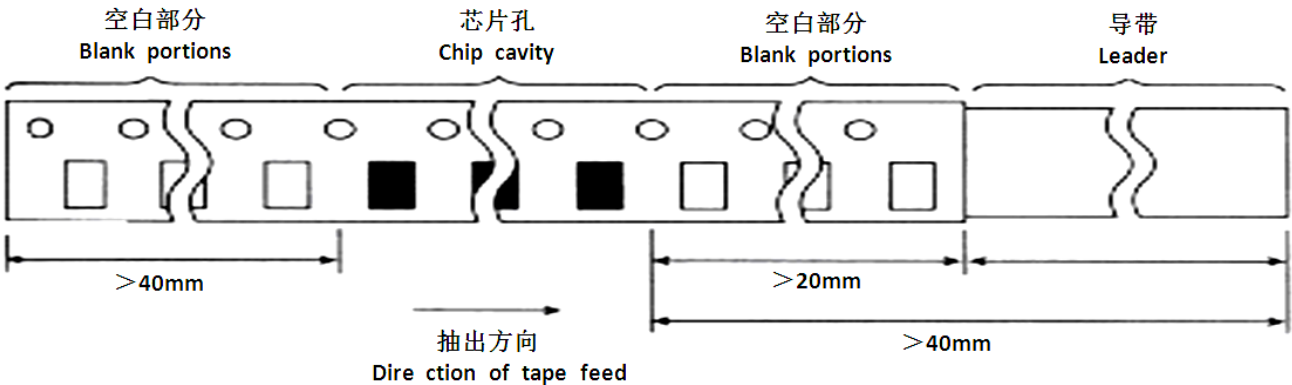


6-2 Reel dimensions (Unit: mm)

序号 No.	A		C	N	G
CF-8	178±2.0	22.0±2.0	12.5±1.5	57±2.0	8

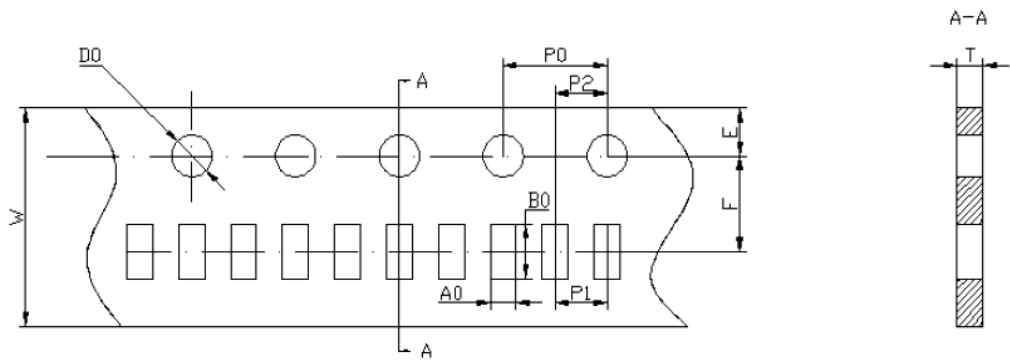


6-3 Leader and blank portion



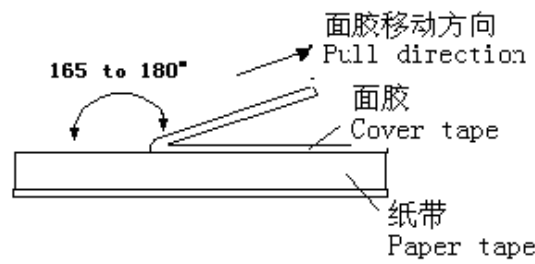
6-4 Taping dimensions (Unit: mm)

Paper tape



Part NO.	A0	B0	W	F	E	P1	P2	P0	D0	T
160808	1.10±0.2	1.90±0.2	8.0±0.2	3.5±0.1	1.75±0.2	4.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.95±0.1
201209	1.50±0.2	2.30±0.2	8.0±0.2	3.5±0.1	1.75±0.2	4.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.95±0.1
321609	1.90±0.2	3.50±0.2	8.0±0.2	3.5±0.1	1.75±0.2	4.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.95±0.1

6-5 Peeling off force



Peeling force should be 0.1~0.7N pulling in the direction of arrow.
 Speed of peeling off: 300mm/min.
 The cover bond should not be damaged and bond the tape when it peeled off.

6-6.Packaging number (Unit: Pcs)

SIZE	321609	252009	201209	160808
REEL	4000	3000	4000	4000
BOX	40000	30000	40000	40000
CASE	240000	180000	240000	240000