

### 0201 Series Thin Film Chip Inductor

#### 1. Scope

This specification applies to 0.6mm x 0.3mm (0201) size, fixed thin film chip inductor rectangular type.

#### 2. Type Designation

CML0306 — \* \* \* — \* — NH

(1) (2) (3) (4)

Where (1) Product Type

CML : fixed thin film chip inductor

(2) Nominal inductance value : three digits of number, refer to Table 1.

The nominal inductance value shell is represented by two significant figures and a code "N" representing the unit.

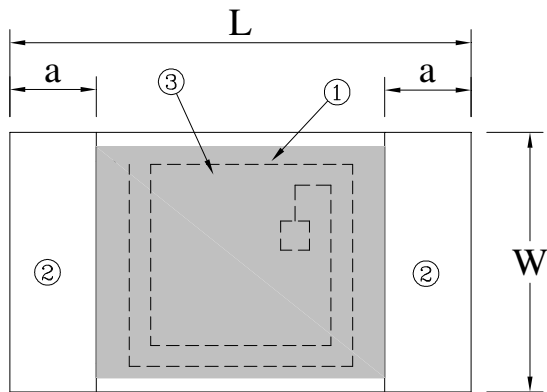
(3) Tolerance

B :  $\pm 0.1\text{nH}$  ; C :  $\pm 0.2\text{nH}$  ; S :  $\pm 0.3\text{nH}$

H :  $\pm 3\%$  ; J :  $\pm 5\%$

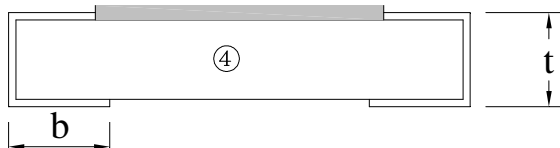
(4) NH = Sn plating ( Lead free / Halogen free)

#### 3. Construction and Physical Dimensions



Code Letter	Dimensions
L	$0.61 \pm 0.05$
W	$0.31 \pm 0.05$
t	$0.28 \pm 0.05$
a	$0.08 \pm 0.05$
b	$0.09 \pm 0.05$

Unit : mm



Note :

- ① Coil : Cu
- ② Electrode : plating  
Sn plating (Lead free)
- ③ Protective Coat : Epoxy Resin coating
- ④ Substrate : Alumina ceramic

### 4. Specifications

**Table 1 Electric Specification Characteristics**

Inductance	Tolerance	Q	LQ Meas. Freq.	Self Resonance Freq.	DC Resistance	Rated Current
(nH)		min.	(MHz)	(MHz)min.	( $\Omega$ )max.	(mA)
CML0306-0N6	$\pm 0.1\text{nH}$	---	100	6000	0.10	900
CML0306-0N7		---		6000	0.10	850
CML0306-0N8		---		6000	0.10	850
CML0306-0N9		---		6000	0.10	800
CML0306-1N0		5		6000	0.10	800
CML0306-1N1		5		6000	0.10	800
CML0306-1N2		5		6000	0.10	800
CML0306-1N3		5		6000	0.12	650
CML0306-1N4		5		6000	0.13	650
CML0306-1N5		5		6000	0.16	650
CML0306-1N6		5		6000	0.16	650
CML0306-1N7		5		6000	0.20	650
CML0306-1N8		5		6000	0.20	650
CML0306-1N9		4		6000	0.20	620
CML0306-2N0		4		6000	0.20	620
CML0306-2N1		4		6000	0.20	620
CML0306-2N2		4		6000	0.20	620
CML0306-2N3		4		6000	0.20	500
CML0306-2N4		4		6000	0.20	500
CML0306-2N5	4	6000	0.20	500		
CML0306-2N6	4	6000	0.20	500		
CML0306-2N7	4	6000	0.23	500		
CML0306-2N8	4	6000	0.25	500		
CML0306-2N9	4	6000	0.25	500		
CML0306-3N0	4	6000	0.30	450		
CML0306-3N1	4	6000	0.30	450		
CML0306-3N2	4	6000	0.30	450		
CML0306-3N3	4	6000	0.30	450		
CML0306-3N4	4	6000	0.32	450		
CML0306-3N5	4	6000	0.32	450		
CML0306-3N6	4	6000	0.32	400		
CML0306-3N7	4	6000	0.40	400		
CML0306-3N8	4	6000	0.40	350		
CML0306-3N9	4	6000	0.40	350		

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CML0306-4N3	± 3%	4	100	6000	0.40	300	
CML0306-4N7		4		6000	0.45	280	
CML0306-5N1		4		6000	0.50	270	
CML0306-5N3		4		6000	0.55	260	
CML0306-5N6		4		6000	0.55	260	
CML0306-6N2		4		6000	0.60	250	
CML0306-6N8		4		5500	0.70	230	
CML0306-7N5		± 5%		4	5000	1.10	180
CML0306-8N2				4	5000	1.20	180
CML0306-9N1				4	4500	1.20	180
CML0306-10N				4	4500	1.30	180
CML0306-12N				4	3700	1.30	180
CML0306-15N				4	3700	1.50	180
CML0306-18N				4	3100	1.70	160
CML0306-22N				4	2800	2.55	120

- **Operating Temperature Range**

4-1 Operating Temperature Range : -40 to 85°C

4-2 Storage Temperature Range : -40 to 85°C

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● L, Q vs Frequency Typical Characteristics Table

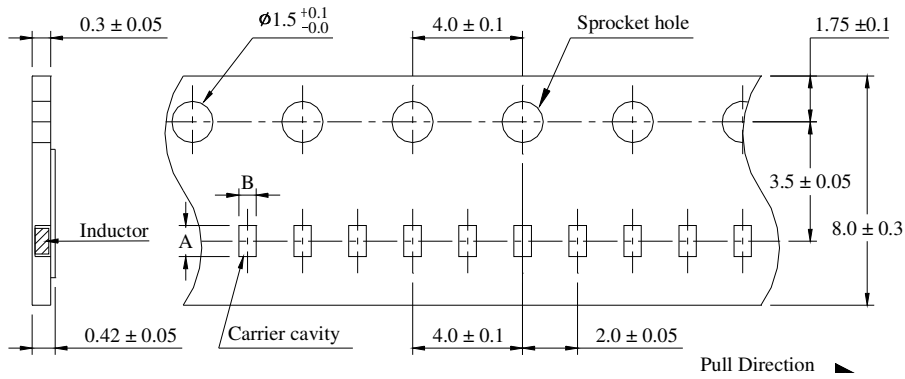
Part Number	Inductance ( nH )				Q			
	500MHz	800MHz	1.8GHz	2.4GHz	500MHz	800MHz	1.8GHz	2.4GHz
CML0306-0N6	0.6	0.6	0.6	0.6	30min	50min	75min	77min
CML0306-0N7	0.7	0.7	0.7	0.7	30min	50min	70min	77min
CML0306-0N8	0.8	0.8	0.8	0.8	30min	50min	70min	77min
CML0306-0N9	0.9	0.9	0.9	0.9	30min	50min	70min	77min
CML0306-1N0	1.0	1.0	1.0	1.0	25	31	56	62
CML0306-1N2	1.2	1.2	1.2	1.2	25	31	55	60
CML0306-1N5	1.5	1.4	1.4	1.4	24	31	53	58
CML0306-1N8	1.8	1.8	1.8	1.8	24	31	51	58
CML0306-2N0	1.9	1.9	1.9	1.9	24	30	50	57
CML0306-2N2	2.1	2.1	2.1	2.1	23	29	49	56
CML0306-2N4	2.3	2.3	2.2	2.2	22	28	47	53
CML0306-2N7	2.7	2.6	2.6	2.6	21	28	45	47
CML0306-3N0	2.9	2.9	2.8	2.8	20	25	42	48
CML0306-3N3	3.1	3.1	3.1	3.1	18	23	37	41
CML0306-3N6	3.4	3.3	3.3	3.3	18	23	35	39
CML0306-3N9	3.7	3.7	3.7	3.7	20	25	39	44
CML0306-4N3	4.1	4.1	4.1	4.1	19	24	38	42
CML0306-4N7	4.5	4.5	4.5	4.7	17	22	33	36
CML0306-5N1	4.8	4.8	4.8	5.0	17	21	31	33
CML0306-5N3	5.2	5.2	5.4	5.7	17	22	31	32
CML0306-5N6	5.5	5.4	5.5	5.7	17	22	33	36
CML0306-6N2	5.9	5.9	6.0	6.2	17	21	31	33
CML0306-6N8	6.6	6.6	6.7	7.0	18	23	33	35
CML0306-8N2	7.9	7.9	8.2	8.8	15	19	24	23
CML0306-9N1	8.7	8.7	9.1	9.8	14	18	24	23
CML0306-10N	9.5	9.5	10.4	11.6	15	18	22	20
CML0306-12N	11.5	11.6	13.6	16.4	13	16	18	16
CML0306-15N	14.4	14.6	17.9	---	13	16	17	---
CML0306-18N	18	18	24	---	13	15	15	---
CML0306-22N	21.5	22.2	---	---	12	14	---	---

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### 5. Packaging

#### 5-1 Dimensions

##### 5-1-1 Tape Packaging Dimensions



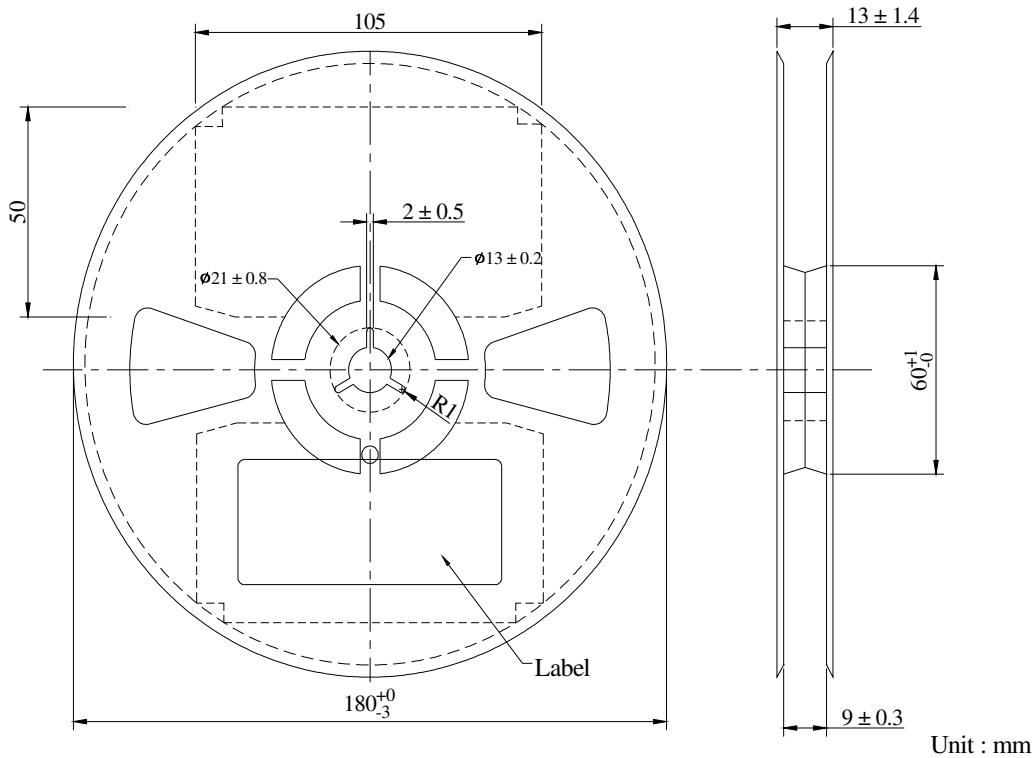
※ “Bottom less type” of tape is used.

※ Pre-empted holes : 150 holes (or 30cm) or more

Code Letter	A	B
Dimension	$0.70 \pm 0.03$	$0.43 \pm 0.03$

Unit : mm

##### 5-1-2 Reel Dimensions



Plastic Reel Thickness : 0.5mm

Plastic Reel : Correspond with EIAJ RRV08B

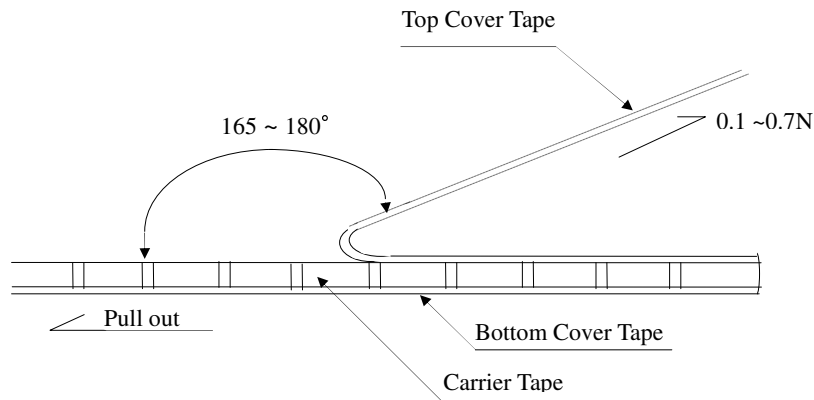
Unit : mm

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### 5-2 Peel Strength of Top Cover Tape

The peel speed shall be about 300 mm/minute

The peel strength of top cover tape shall be between 0.1 to 0.7N.



### 5-3 Quantity per Reel

10,000 pieces / reel

### 5-4 Label Marking

The following items shall be marked on the reel.

- (1) Manufactures parts number
- (2) Quantity
- (3) Manufacturing date code
- (4) Manufacturer's name
- (5) The country of origin
- (6) Shipping number
- (7) Identification showing lead-free products.

## 6. Precautions

### 6-1 Storage

- (1) The product shall be stored in a room where temperature and humidity must be controlled. (temperature: 5-35°C, humidity : 45-85% RH).  
However, humidity keeps it low, as it is possible.
- (2) The product shall be stored as direct sunshine doesn't hit on it.
- (3) The product shall be stored with on moisture, dust, a material that will make solderability inferior, and a harmful gas (hydrogen chloride, sulfurous acid gas, and hydrogen sulfide).
- (4) The product shall be stored as tape packaging condition.

### 6-2 Term for use

- (1) The term for use is within one year from the shipping day of the product.
- (2) If the product has been left unused for more than one year after delivered, check solderability before use.

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### 6-3 Chip mounting

- (1) When chip are mounted on PC board, protective coat of the product must not be scratched. If it will be scratched, it will make characteristic inferior.
- (2) In case that product will be soldered by soldering iron, heating shall be done on the land, and soldering iron must not hit on the product itself.
- (3) In case that resin coating or resin seal will be made for a PC board after chip mounting, do washing and drying it enough before coating or sealing. If ion bear or moisture will be sealed in resin coating, it will make characteristic inferior.
- (4) For resinous use, it is necessary to set up enough the curing conditions. As it gets improper for the condition, changes of a resistance value are large and are a case.
- (5) According to shape, material, and pressure of clamping in chip mounting machine, there is the case that crack will be appeared on the product.  
Control a shock energy for clamping the product under  $7 \times 10^{-4}$  J .  
With a shock energy around clamping that says here, it is suited to a potential energy, in case that iron block of 25 g is dropped naturally to the product placed on iron plate for the height of 2.8mm.
- (6) The glue to fix the product on the PC board around chip mounting, it is needed high insulation resistance and great performance or moisture. And it is needed that these characteristics are not inferno in using temperature range and a hot spot temperature to be acting.