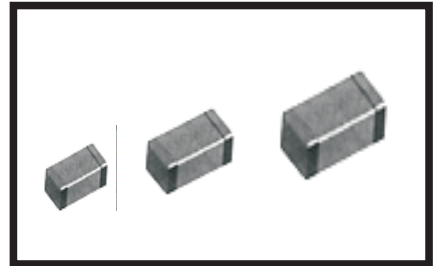


# 叠层片式高频电感 CHIP HIGH FREQUENCY INDUCTORS

## 叠层片式高频电感 CHIP HIGH FREQUENCY INDUCTORS

OPERATING TEMP.	1005	-55~125°C
	1608	-40~+85°C
	2012	



### 特征 FEATURES

- 高自谐振频率。
- 叠层独石结构，具有高可靠性。
- 优良的焊接性和耐焊性，适合于回流焊和波峰焊。
- High self-resonant frequency.
- Multilayer monolithic construction yields high reliability
- Excellent solderability and heat resistance for either wave or reflow soldering.

### 应用 APPLICATIONS

- 移动电话、寻呼机、PHS和PDA
- 各种高频回路
- 抑制各种高频杂波
- Portable telephone、Pagers、PHS and PDA
- Miscellaneous high-frequency circuits
- EMI countermeasure in high frequency circuits

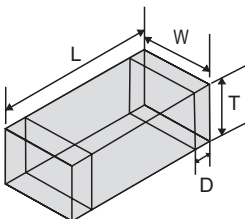
### 产品规格型号的表示方法 ORDERING CODE

VHF      201209      H      47N      J      T  
①            ②            ③            ④            ⑤            ⑥

① 产品代号 Product Code		② 规格尺寸(L×W×T)(mm) Dimensions		③ 材料 Material Code	④ 感量(nH) Inductance		⑤ 误差 Tolerance		⑥ 包装方式 Packaging Style	
VHF	叠层片式 高频电感  Very High Frequency Inductors	100505	1.0×0.5×0.5	H	1N0	1.0	S	±0.3nH	T	卷带盘装 Tape&Reel
		160808	1.6×0.8×0.8		10N	10	D	±0.5nH		
		201209	2.0×1.2×0.9		R10	100	J	±5%	B	散装 Bulk
					N=0.0(nH) R=0.0(μH)		K	±10%		
							M	±20%		

### 外形尺寸 SHAPE AND DIMENSIONS

unit: mm(inch)



Part No.	L	W	T	D
100505	1.0±0.15 (0.040±0.006)	0.5±0.15 (0.020±0.006)	0.5±0.15 (0.020±0.006)	0.25±0.10 (0.010±0.004)
160808	1.6±0.2 (0.063±0.008)	0.8±0.2 (0.031±0.008)	0.8±0.2 (0.031±0.008)	0.3±0.2 (0.01±0.008)
201209	2.0±0.2 (0.079±0.008)	1.2±0.2 (0.047±0.008)	0.9±0.2 (0.035±0.008)	0.5±0.3 (0.020±0.012)

**• 電性能參數 ELECTRICAL CHARACTERISTICS**
**1005型TYPE**

Part No.	Inductance (nH)	Q (Min)	Test Fre. (MHz)	Q Frequency (MHz)					SRF (MHz)Min	DC R ( $\Omega$ )Max	I <sub>r</sub> (mA) Max
				100	300	500	800	1000			
VHF100505H1N0S	1.0	7	100	8	20	26	34	38	6000	0.17	300
VHF100505H1N2S	1.2	7	100	8	20	26	34	38	6000	0.17	300
VHF100505H1N5S	1.5	7	100	8	20	26	34	38	6000	0.18	300
VHF100505H1N8S	1.8	7	100	8	18	24	30	35	6000	0.19	300
VHF100505H2N2S	2.2	7	100	8	17	24	29	35	6000	0.21	300
VHF100505H2N7S	2.7	7	100	8	17	23	29	34	5500	0.22	300
VHF100505H3N3S	3.3	7	100	8	17	23	28	34	5500	0.25	300
VHF100505H3N9S	3.9	7	100	8	17	23	28	33	5200	0.25	300
VHF100505H4N7S	4.7	7	100	8	17	23	28	33	4800	0.30	300
VHF100505H5N6S	5.6	7	100	8	17	22	28	33	4600	0.30	300
VHF100505H6N8J	6.8	7	100	8	17	22	27	33	4000	0.37	250
VHF100505H8N2J	8.2	7	100	10	16	22	28	32	3600	0.45	250
VHF100505H10NJ	10	7	100	10	17	22	30	32	3200	0.47	250
VHF100505H12NJ	12	8	100	11	17	24	31	34	2800	0.55	250
VHF100505H15NJ	15	8	100	11	18	24	30	33	2500	0.70	250
VHF100505H18NJ	18	8	100	11	18	24	30	32	2200	0.70	200
VHF100505H22NJ	22	8	100	11	18	24	30	31	2000	0.90	200
VHF100505H27NJ	27	8	100	11	18	23	27	29	1600	1.00	200
VHF100505H33NJ	33	8	100	11	18	22	25	25	1300	1.10	200
VHF100505H39NJ	39	8	100	11	18	22	24	23	1200	1.30	150
VHF100505H47NJ	47	8	100	11	18	21	23	21	1000	1.40	150

**1608型TYPE**

Part No.	Inductance (nH)	Q (Min)	Test Fre. (MHz)	Q Frequency (MHz)					SRF (MHz)Min	DC R ( $\Omega$ )Max	I <sub>r</sub> (mA) Max
				100	300	500	800	1000			
VHF160808H1N0S	1.0	8	100	14	20	30	35	50	10000	0.05	500
VHF160808H1N2S	1.2	8	100	14	20	30	35	50	10000	0.10	500
VHF160808H1N5S	1.5	8	100	14	22	37	38	68	10000	0.10	400
VHF160808H1N8S	1.8	8	100	14	21	33	35	61	9800	0.12	400
VHF160808H2N2S	2.2	8	100	14	26	40	39	60	7600	0.20	400
VHF160808H2N7S	2.7	8	100	12	23	27	37	47	7000	0.20	400
VHF160808H3N3S	3.3	8	100	12	23	27	36	47	6200	0.20	400
VHF160808H3N9S	3.9	8	100	12	25	28	38	47	5600	0.25	400
VHF160808H4N7S	4.7	8	100	12	26	30	38	49	4800	0.30	400
VHF160808H5N6S	5.6	8	100	12	26	29	35	34	4600	0.30	400
VHF160808H6N8S	6.8	8	100	12	23	27	35	40	4200	0.35	400
VHF160808H8N2J	8.2	8	100	12	22	26	33	39	3600	0.35	400
VHF160808H10NJ	10	8	100	13	25	31	38	45	3200	0.40	300
VHF160808H12NJ	12	8	100	13	24	28	35	39	2800	0.40	300
VHF160808H15NJ	15	8	100	13	22	27	34	40	2600	0.45	300
VHF160808H18NJ	18	8	100	13	24	28	35	38	2400	0.60	300
VHF160808H22NJ	22	8	100	15	27	32	38	43	2000	0.60	300
VHF160808H27NJ	27	8	100	14	26	29	36	44	1900	0.80	300
VHF160808H33NJ	33	8	100	14	26	29	35	34	1600	0.80	300
VHF160808H39NJ	39	8	100	14	22	25	28	28	1400	1.00	300
VHF160808H47NJ	47	8	100	15	25	29	30	25	1200	1.00	200
VHF160808H56NJ	56	8	100	17	28	31	31	25	1000	1.00	200
VHF160808H68NJ	68	8	100	17	22	24	25	15	900	1.00	200
VHF160808H82NJ	82	8	100	17	23	24	22	13	800	1.00	200
VHF160808HR10J	100	8	100	17	25	27	24	17	700	1.40	200
VHF160808HR12J	120	8	50	15	24	23			600	1.60	150
VHF160808HR15J	150	8	50	13	19				500	1.80	150

2012型TYPE

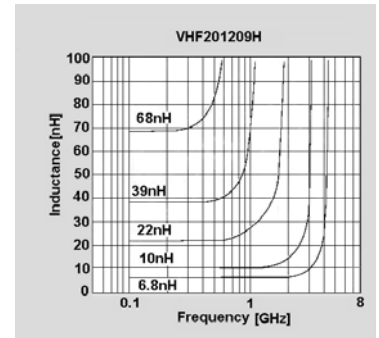
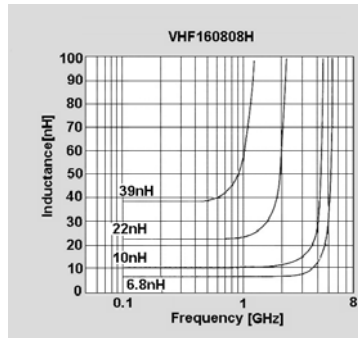
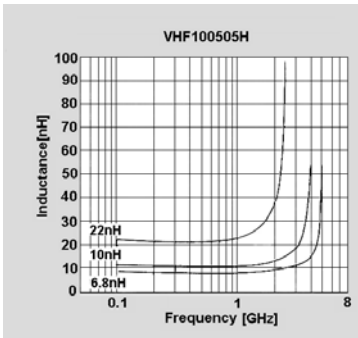
Part No.	Inductance (nH)	Q (Min)	Test Fre. (MHz)	Q Frequency (MHz)					SRF (MHz)Min	DC R ( $\Omega$ )Max	Ir(mA) Max
				100	300	500	800	1000			
VHF201209H1N5S	1.5	8	100	10	23	46	54	85	6000	0.10	600
VHF201209H1N8S	1.8	8	100	13	24	46	55	85	6000	0.10	600
VHF201209H2N2S	2.2	8	100	13	25	46	53	85	6000	0.10	600
VHF201209H2N7S	2.7	8	100	13	25	42	45	76	6000	0.10	600
VHF201209H3N3S	3.3	8	100	15	28	48	52	85	6000	0.13	600
VHF201209H3N9S	3.9	8	100	15	28	49	55	85	5400	0.15	600
VHF201209H4N7S	4.7	8	100	15	28	48	53	85	4500	0.20	400
VHF201209H5N6S	5.6	8	100	16	30	44	45	78	4000	0.23	400
VHF201209H6N8S	6.8	8	100	16	30	40	45	69	3650	0.25	400
VHF201209H8N2J	8.2	8	100	16	28	42	45	69	3000	0.28	400
VHF201209H10NJ	10	8	100	16	28	43	45	71	2500	0.30	300
VHF201209H12NJ	12	8	100	16	28	43	45	50	2450	0.35	300
VHF201209H15NJ	15	8	100	18	30	43	43	56	2000	0.40	300
VHF201209H18NJ	18	8	100	18	26	40	42	59	1750	0.45	300
VHF201209H22NJ	22	8	100	17	31	45	45	59	1700	0.50	300
VHF201209H27NJ	27	8	100	17	31	45	45	54	1550	0.55	300
VHF201209H33NJ	33	8	100	18	27	41	40	44	1350	0.60	300
VHF201209H39NJ	39	8	100	19	31	42	31	20	1300	0.70	300
VHF201209H47NJ	47	8	100	20	24	33	31	29	1200	0.80	300
VHF201209H56NJ	56	8	100	21	34	43	35	25	1150	0.80	300
VHF201209H68NJ	68	8	100	19	28	37	29		1000	0.85	300
VHF201209H82NJ	82	8	100	19	29	30	27		850	0.90	300
VHF201209HR10J	100	8	100	13	27	36			600	1.00	300
VHF201209HR12J	120	8	100	19	27				500	1.20	300
VHF201209HR15K	150	8	100	19	27				500	1.50	300
VHF201209HR18K	180	8	100	19	25				400	1.80	300
VHF201209HR22K	220	8	100	19	22				350	1.80	300

I nductance tolerance S :0.3nH, D:0.5nH, J: 5 %, K: 1 0%,M: 2 0%

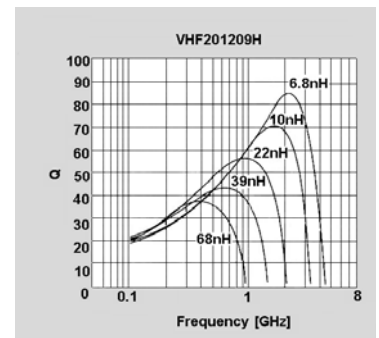
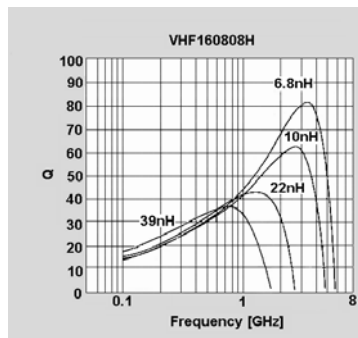
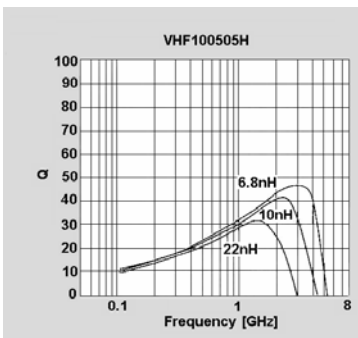
□感量公差Inductance tolerance ( S:  $\pm 0.3$ nH, D:  $\pm 0.5$ nH, J:  $\pm 5\%$ , K:  $\pm 10\%$ , M:  $\pm 20\%$ )

## 特性曲綫 CHARACTERISTICS CURVES

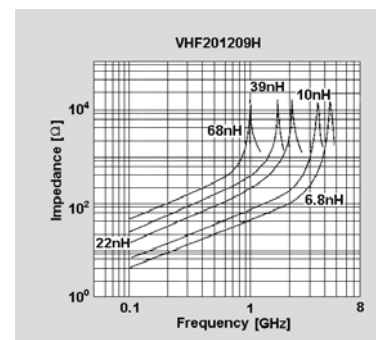
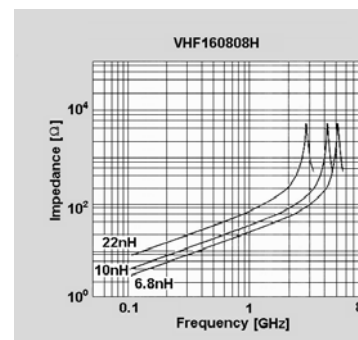
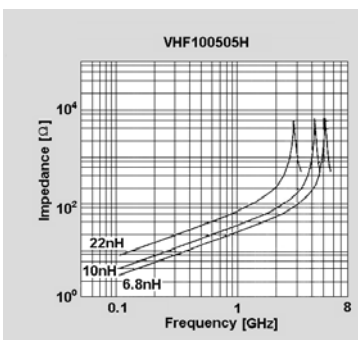
### ■ 電感量頻率特性 Inductance VS. Frequency



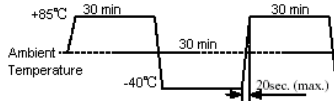
### ■ Q值頻率特性 Q Value VS. Frequency

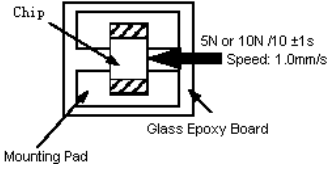
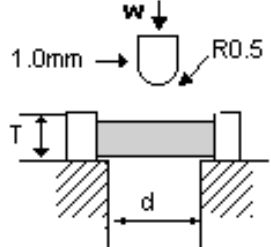


### ■ 阻抗頻率特性 Impedance VS. Frequency



■ 可靠性測試  
RELIABILITY TESTING

Type	Item	Specified value	Test methods
1	Operating temperature range	-40 to +125°C	
2	Storage temperature range	-10 to +40°C	
3	Solderability	At least 90% of terminal electrode is covered by new solder	Solder temperature: 230±5°C Duration: 4±1S Preheating temperature: 120 to 150°C Preheating time: 60S immersion into the colophony flux for 3 to 5 sec. Flux: immersion into methanol solution with colophony for 3 to 5 sec. Immersion speed: 25mm/sec
4	Resistance to soldering	Appearance: No significant abnormality. At least 75% of terminal electrode is covered by new solder Impedance change: within ±20% Inductor change: within ±10%	Solder temperature: 260±5°C Duration: 10±0.5S Preheating temperature: 120 to 150°C Preheating time: 60S immersion into the colophony flux for 3 to 5 sec. Flux: immersion into methanol solution with colophony for 3 to 5 sec. Immersion speed: 25mm/sec
5	Thermal shock	Appearance: No significant abnormality. Impedance change: within ±30% Inductor change: within ±10% Q value change(ferrite):within ±30% Q value change(ceramic):within ±20%	Temperature: -40°C for 30±3min +85°C for 30±3min Transforming interval :max 20 sec Number of cycles: 32 
6	Loading at low temperature	Appearance: No significant abnormality. Impedance change: within ±20% Inductor change: within ±10%	Temperature: -55±2°C Duration: 500 <sup>+24</sup> <sub>-0</sub> hrs
7	Loading at high temperature	Appearance: No significant abnormality. Impedance change: within ±30% Inductor change: within ±10% Q value change(ferrite):within ±30% Q value change(ceramic):within ±20%	Temperature: 85±2°C Duration: 1000 <sup>+24</sup> <sub>-0</sub> hrs Applied current: Rated current
8	Loading under Damp Heat	Appearance: No significant abnormality. Impedance change: within ±30% Inductor change : within ±10% Q value change(ferrite):within ±30% Q value change(ceramic):within ±20%	Temperature: 55±2°C Duration: 500 <sup>+24</sup> <sub>-0</sub> hrs Humidity: 90 to 95%RH Applied current: Rated current

Type	Item	Specified value	Test methods								
9	Vibration	Appearance: No significant abnormality. Impedance change: within $\pm 30\%$ Inductor change: within $\pm 10\%$ Q value change (ferrite): within $\pm 30\%$ Q value change (ceramic): within $\pm 20\%$	Amplitude: 1.5mm Directions: 2hrs each in X Y Z direction Frequency range: 10 to 55 to 10Hz (min) Aookued firce: 5N force for 1005 and 1608 series. 10N force for 2012、3216、3225、4516、4532 series. Keep time: $10 \pm 1S$								
10	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、3225、4516、4532series. Keep time : $10 \pm 1S$ 								
11	Resistance to pressure of substrate	The body shall not be damaged by forces applied on the right. <table border="1" data-bbox="454 1209 949 1288"> <tbody> <tr> <td>d</td> <td>1.3</td> <td>1.3</td> <td>2.0</td> </tr> <tr> <td>w</td> <td>2.0</td> <td>3.0</td> <td>4.0</td> </tr> </tbody> </table>	d	1.3	1.3	2.0	w	2.0	3.0	4.0	
d	1.3	1.3	2.0								
w	2.0	3.0	4.0								

Note: When there are questions concerning, measurement shall be made after  $24 \pm 2$ hrs of recovery under the standard condition.

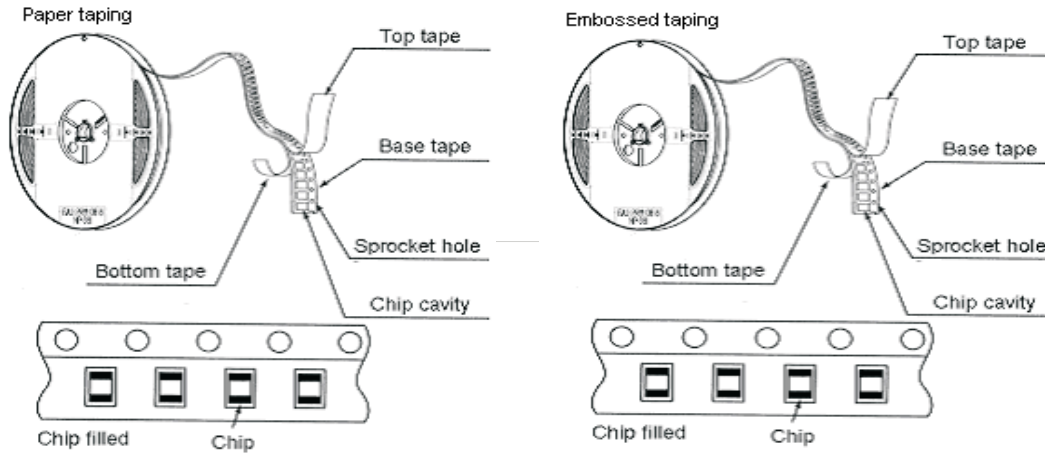
## 包裝PACKAGING

(VHF、CMI、CBG、CBW、CBH、CBY、CBA、CBM SERIES)

### STANDAE QUANTITY

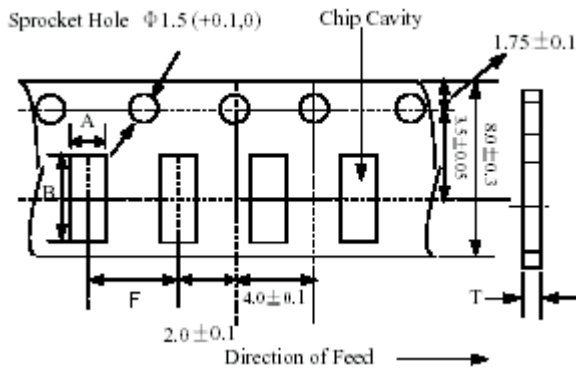
Type	1000505	160808	201209	321609	321611	322513	451616	453215	321609 (磁珠排)
Quantity(pcs)	10000	4000	4000	4000	3000	3000	5000	3000	3000

### TAPING DRAWINGS



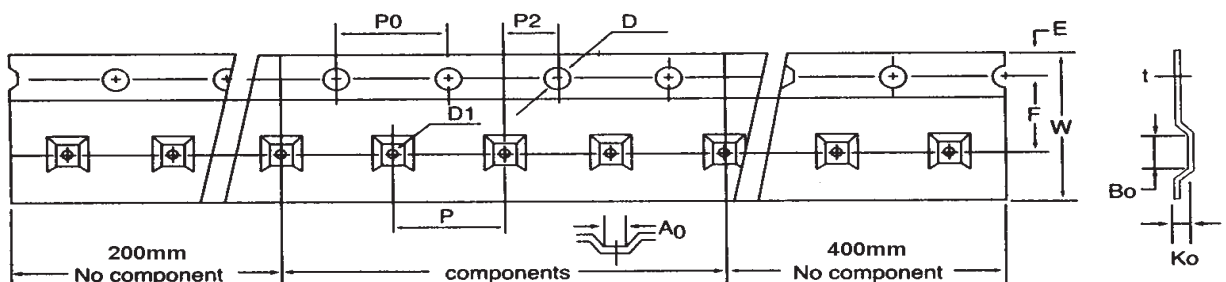
### TAPING DIMENSIONS (UNIT: mm)

#### Paper tape



Part NO.	A	B	F	T
100505	$0.65 \pm 0.1$	$1.15 \pm 0.1$	$2.0 \pm 0.05$	0.62max
160808	$1.1 \pm 0.1$	$1.9 \pm 0.1$	$4.0 \pm 0.05$	1.1max
201209	$1.5 \pm 0.1$	$2.3 \pm 0.1$	$4.0 \pm 0.05$	1.1max
321609	$1.9 \pm 0.1$	$3.5 \pm 0.1$	$4.0 \pm 0.05$	0.97max

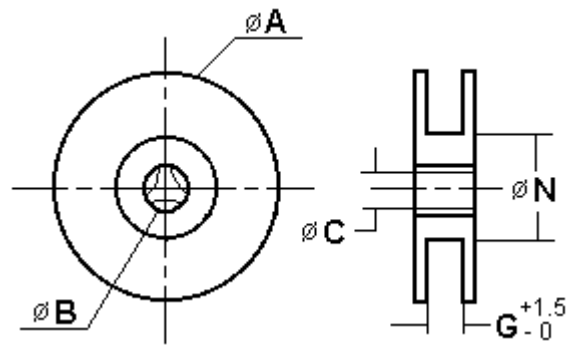
#### Embossed tape



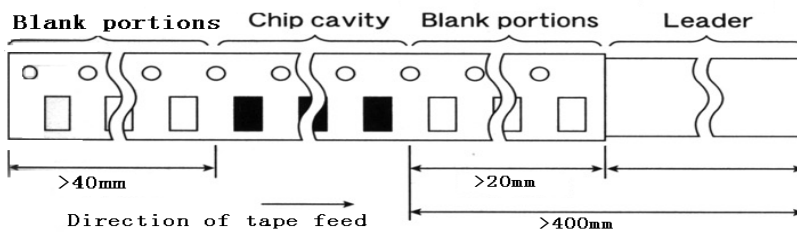
	2012	3216	3225	4516	4532	3216(磁珠排)
W	8.1+/-0.2	8.1+/-0.2	8.1+/-0.2	12.0+/-0.2	12.0+/-0.2	8.1+/-0.2
P	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	8.0+/-0.10	4.0+/-0.10
E	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10
F	3.50+/-0.10	3.50+/-0.10	3.50+/-0.10	5.50+/-0.10	5.50+/-0.10	3.50+/-0.10
D	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05
D1	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>	1.50 <sup>+0.25</sup> <sub>-0</sub>
P <sub>0</sub>	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10	4.0+/-0.10
P <sub>0</sub> 10	40.0+/-0.20	40.0+/-0.20	40.0+/-0.20	40.0+/-0.20	40.0+/-0.20	40.0+/-0.20
P2	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05	2.0+/-0.05
A <sub>0</sub>	1.52+/-0.10	1.90+/-0.10	2.80+/-0.10	1.93+/-0.10	3.66+/-0.10	1.90+/-0.10
B <sub>0</sub>	2.41+/-0.10	3.51+/-0.10	3.50+/-0.10	4.95+/-0.10	4.95+/-0.10	3.51+/-0.10
t	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10	0.23+/-0.10
K <sub>0</sub>	1.35+/-0.10	1.27+/-0.10	1.55+/-0.10	1.85+/-0.10	1.74+/-0.10	1.10+/-0.10

• REEL DIMENSIONS(UNIT:mm)

	A	B	C	N	G
CF-8	178±2.0	22±2.0	12.5±1.5	57±2.0	8
CF-12	330±2.0	22±2.0	12.5±1.5	98±2.0	12



• LEADER AND BLANK PORTION



• PEELING OFF FORCE : 0.05 to 0.7N in the direction show below.

