佳邦科技股份有限公司
INPAQ TECHNOLOGY CO., LTD.

WCA1005CP Series
Data Sheet

Product Name	WCA1005CP Series
Series	Chip Inductor
Size	EIAJ 1005
Version	A1

製/修訂履歷表 Revision History

Version	Designed by	Description of Changes	Modify Date
A0	Jones Weng	New part Number	2023/5/18
A1	Hongyu Yi	1. 包裝紙帶 T 尺寸由 0.68±0.03 變為 0.75±0.05 2. 同比行業標准: 6N8 以下規格刪除 G 規	2024/08/02

1. SCOPE

1.1. Ceramic core wire wound construction.

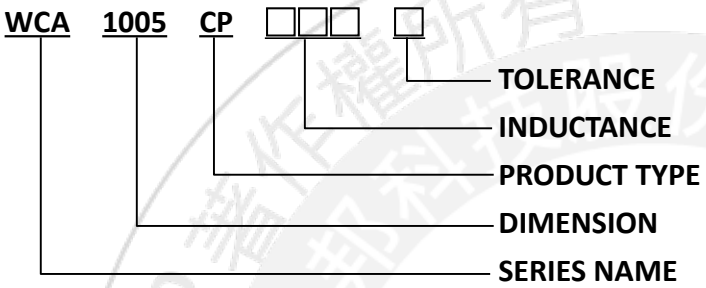
1.2. Component miniaturization is more suitable for SMT layout use.

1.3. Inductance values from 1.0 to 120 nH.

1.4. The Q value is better than multilayer technology.

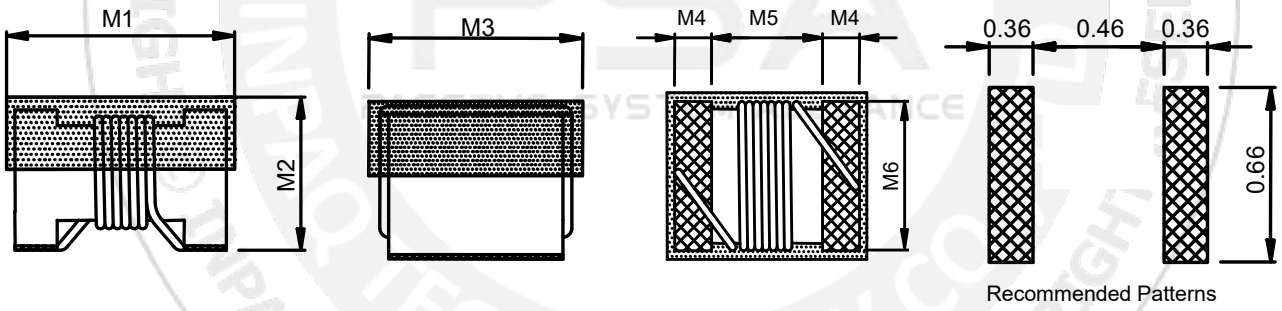
1.5. High reliability tests comply with AEC-Q200.

2. PART NUMBER IDENTIFICATION



3. MECHANICAL DIMENSION

UNIT: mm

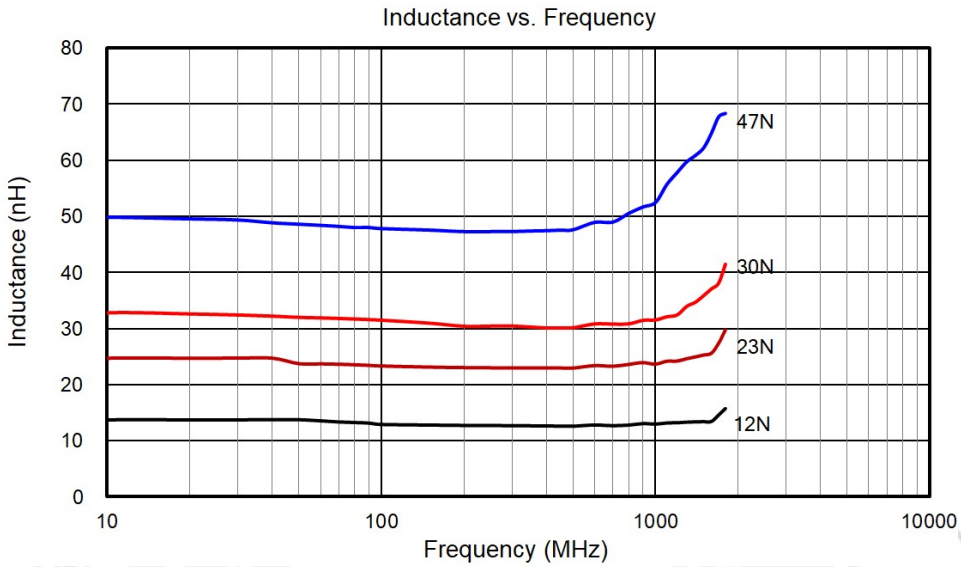


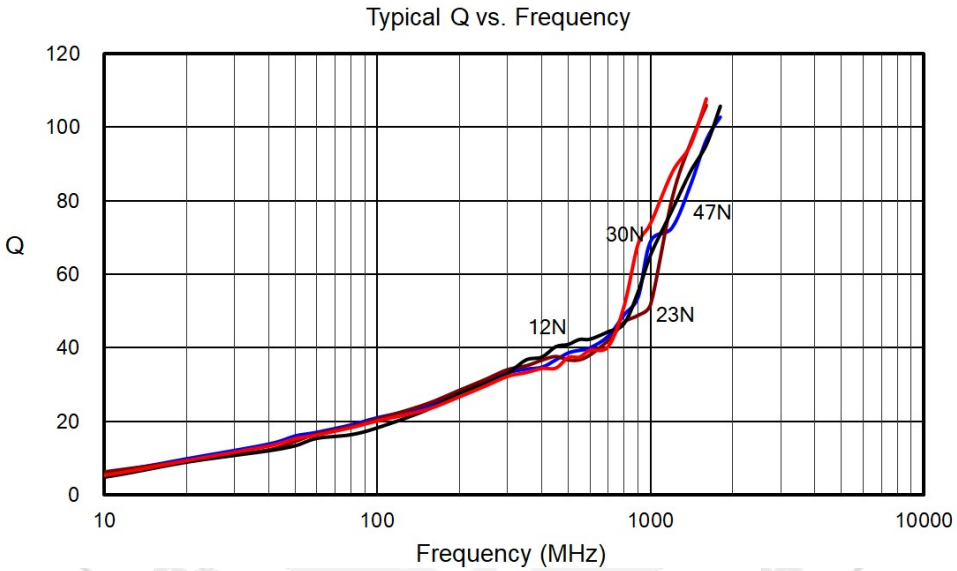
Series	M1	M2	M3	M4	M5	M6
WCA1005CP	1.19 MAX.	0.66 MAX.	0.64 MAX.	0.23±0.1	0.56±0.1	0.50±0.1

4. ELECTRICAL SPECIFICATION

Part number	Inductance (nH) @250MHz	Inductance Tolerance	Q MIN.	Inductance (TYP.) @900MHz	Q (TYP.) @900MHz	Inductance (TYP.) @1700MHz	Q (TYP.) @1700MHz	SRF (GHz) MIN.	DC Resistance (Ω) MAX.	Irms (mA)
WCA1005CP1N0□	1.0	C、D	16	1.02	75	1.02	70	12.70	0.045	1360
WCA1005CP1N2□	1.2	C、D	16	1.17	30	1.17	40	12.90	0.090	740
WCA1005CP1N8□	1.8	C、D	16	2.08	59	1.94	74	12.00	0.070	1040
WCA1005CP1N9□	1.9	C、D	16	1.72	65	1.74	80	11.30	0.070	1040
WCA1005CP2N0□	2.0	C、D	16	1.93	54	1.93	75	11.10	0.070	1040
WCA1005CP2N2□	2.2	C、D	19	2.19	55	2.23	82	10.80	0.070	960
WCA1005CP2N4□	2.4	C、D	15	2.24	51	2.27	70	10.50	0.068	790
WCA1005CP2N5□	2.5	C、D	15	2.37	33	2.38	53	10.40	0.150	660
WCA1005CP2N7□	2.7	C、D	16	2.58	42	2.60	61	10.40	0.120	640
WCA1005CP3N3□	3.3	C、D	19	3.10	65	3.12	80	7.00	0.066	840
WCA1005CP3N6□	3.6	C、D	19	3.56	45	3.62	71	6.80	0.066	840
WCA1005CP3N9□	3.9	C、D	19	3.89	50	4.14	72	6.00	0.066	840
WCA1005CP4N1□	4.1	C、D	18	3.89	50	4.14	72	6.00	0.066	700
WCA1005CP4N3□	4.3	C、D	18	4.19	40	4.30	71	6.00	0.091	700
WCA1005CP4N7□	4.7	C、D	15	4.78	47	4.59	62	4.70	0.130	640
WCA1005CP5N1□	5.1	C、D	20	5.16	52	5.19	76	4.80	0.083	800
WCA1005CP5N6□	5.6	J、K	20	5.20	48	5.28	75	4.80	0.083	760
WCA1005CP5N8□	5.8	J、K	20	5.60	48	5.63	74	4.80	0.083	760
WCA1005CP6N2□	6.2	J、K	20	6.15	50	6.20	73	4.80	0.083	760
WCA1005CP6N8□	6.8	G、J、K	20	6.73	65	6.95	70	4.80	0.083	680
WCA1005CP7N3□	7.3	G、J、K	20	7.25	58	7.47	71	4.80	0.260	680
WCA1005CP7N5□	7.5	G、J、K	22	7.91	60	8.22	85	4.80	0.100	680
WCA1005CP8N2□	8.2	G、J、K	22	8.53	64	8.81	88	4.40	0.100	680
WCA1005CP8N7□	8.7	G、J、K	18	8.78	54	9.21	73	4.10	0.200	480
WCA1005CP9N0□	9.0	G、J、K	22	9.07	65	9.53	83	4.16	0.100	680
WCA1005CP9N1□	9.1	G、J、K	22	9.27	63	8.61	73	4.16	0.100	680
WCA1005CP9N5□	9.5	G、J、K	18	9.64	62	9.93	56	4.00	0.200	480
WCA1005CP10N□	10	G、J、K	21	10.16	50	9.72	85	3.90	0.200	480
WCA1005CP11N□	11	G、J、K	24	10.89	53	11.46	77	3.68	0.120	640
WCA1005CP12N□	12	G、J、K	24	12.71	62	12.87	77	3.60	0.120	640
WCA1005CP13N□	13	G、J、K	24	13.4	51	14.63	57	3.45	0.210	440
WCA1005CP15N□	15	G、J、K	24	15.2	55	16.88	76	3.28	0.170	560
WCA1005CP16N□	16	G、J、K	24	16.43	45	18.79	49	3.10	0.220	560
WCA1005CP18N□	18	G、J、K	25	17.39	52	22.18	64	3.10	0.230	420
WCA1005CP19N□	19	G、J、K	24	19.51	60	21.85	72	3.04	0.200	480
WCA1005CP20N□	20	G、J、K	25	20.7	52	23.66	53	3.00	0.250	420
WCA1005CP22N□	22	G、J、K	25	22.33	57	26.54	53	2.80	0.300	400
WCA1005CP23N□	23	G、J、K	22	23.8	49	26.85	64	2.72	0.300	400
WCA1005CP24N□	24	G、J、K	25	25.59	59	31.06	56	2.70	0.300	400
WCA1005CP27N□	27	G、J、K	24	29.26	45	32.56	62	2.48	0.300	400
WCA1005CP30N□	30	G、J、K	25	31.9	45	40.38	41	2.35	0.300	400
WCA1005CP33N□	33	G、J、K	24	34.12	35	40.32	36	2.35	0.440	400
WCA1005CP36N□	36	G、J、K	24	39.5	45	48.4	53	2.32	0.440	320
WCA1005CP39N□	39	G、J、K	25	42.65	45	50.96	42	2.10	0.550	200
WCA1005CP40N□	40	G、J、K	24	39.0	44	47.41	35	2.24	0.440	320
WCA1005CP43N□	43	G、J、K	25	45.8	46	61.55	35	2.03	0.810	100
WCA1005CP47N□	47	G、J、K	20	52.85	42	-	-	2.10	0.830	150
WCA1005CP51N□	51	G、J、K	25	56.6	40	-	-	1.75	0.820	100
WCA1005CP56N□	56	G、J、K	22	58.59	40	-	-	1.76	0.970	100
WCA1005CP57N□	57	G、J、K	22	60.15	40	-	-	1.76	0.970	100
WCA1005CP62N□	62	G、J、K	22	64.95	40	-	-	1.76	1.620	100
WCA1005CP68N□	68	G、J、K	22	72.17	40	-	-	1.62	1.120	100
WCA1005CP72N□	72	G、J、K	20	-	-	-	-	1.26	2.000	30
WCA1005CP75N□	75	G、J、K	20	-	-	-	-	1.62	2.000	50
WCA1005CP82N□	82	G、J、K	20	-	-	-	-	1.26	1.550	50
WCA1005CP91N□	91	G、J、K	22	-	-	-	-	1.26	2.000	50
WCA1005CPR10□	100	G、J、K	20	-	-	-	-	1.16	2.000	30
WCA1005CPR12□	120	G、J、K	20	-	-	-	-	1.90	2.200	50

5. ELECTRICAL CURVE

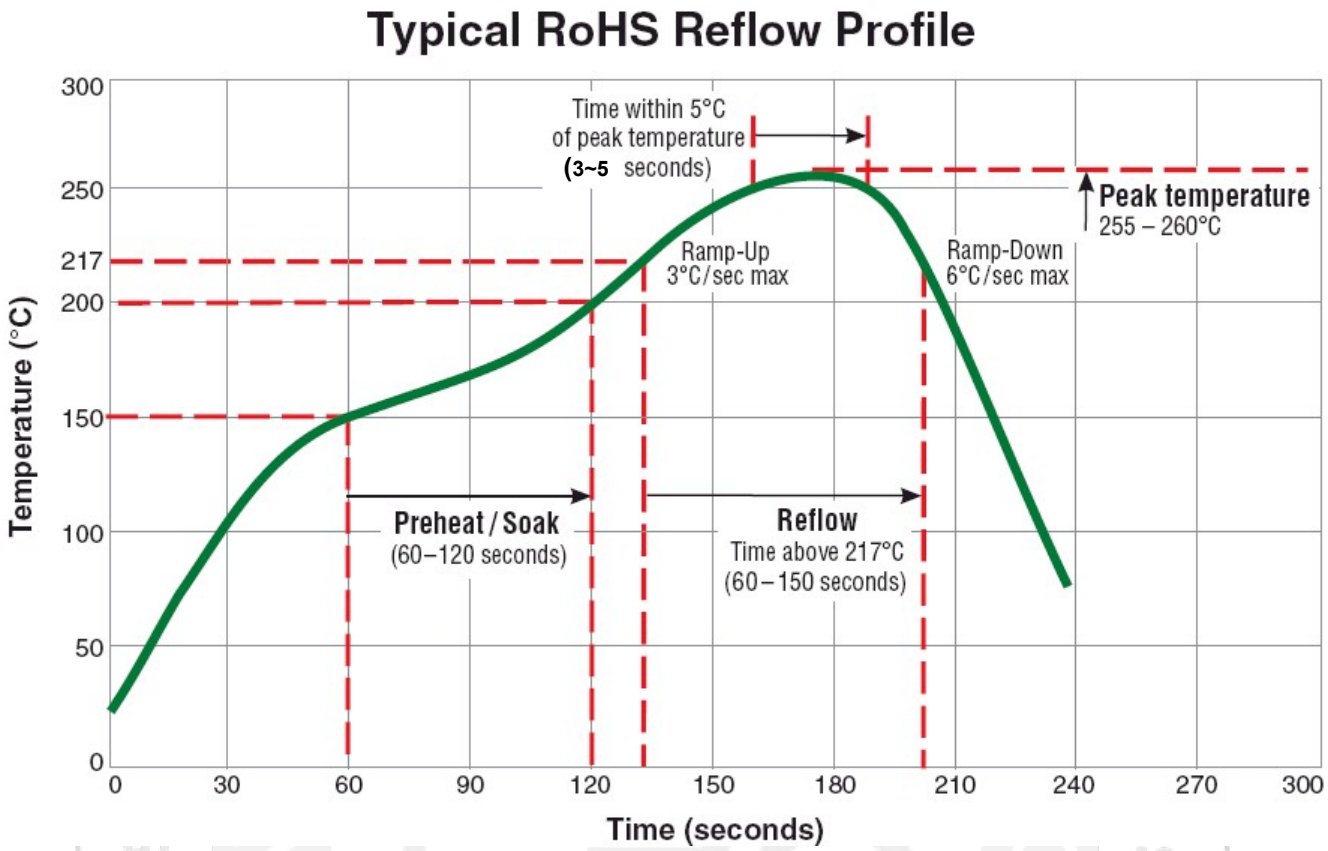




6. RELIABILITY PERFORMANCE

Test Item	Accept criteria	Test Condition	Standard Source
High Temperature Exposure (Storage)	1.Change from an initial value L:within±5% 2.no visible damage.	1000 hrs. at rated operating temperature (e.g. 125°C part can be stored for 1000 hrs. @ 125°C. Same applies for 105°C and 85°C. Unpowered. Measurement at 24±4 hours after test conclusion.	AEC-Q200 RevD Table 5
Temperature Cycling	1.Change from an initial value L:within±5% 2.no visible damage.	1000 cycles (-40°C to +125°C). Note: If 85°C part or 105°C part the 1000 cycles will be at that temperature. Measurement at 24±4 hours after test conclusion. 30min maximum dwell time at each temperature extreme. 1 min. maximum transition time.	AEC-Q200 RevD Table 5
Biased Humidity	1.Change from an initial value L:within±5% 2.no visible damage.	1000 hours 85°C/85%RH. Unpowered. Measurement at 24±4 hours after test conclusion.	AEC-Q200 RevD Table 5
Operational Life	1.Change from an initial value L:within±5% 2.no visible damage.	1000 hrs. @ 105°C. If 85°C or 125°C part will be tested at that temperature. Measurement at 24±4 hours after test conclusion.	AEC-Q200 RevD Table 5
Mechanical Shock	1.Change from an initial value L:within±5% 2.no visible damage.	Peak Value: 100g's, Duration: 6ms, Waveform: Half-sine Velocity Change: 12.3ft/sec.	MIL-STD-202 Method 213 Condition C
Vibration	1.Change from an initial value L:within±5% 2.no visible damage.	5g's for 20 minutes, 12 cycles each of 3 orientations. Note: Use 8"X5" PCB, .031" thick, 7 secure points on one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz.	AEC-Q200 RevD Table 5
Resistance to Soldering Heat	1.no visible damage.	Condition K: Reflow temp:250±5℃, Peak time: 30±5sec, Temp ramp: 1°C/s-4°C/s; time above 183°C, 90 s - 120 s, Cycles: 3.	MIL-STD-202 Method 210
ESD	1.Change from an initial value L:within±5% 2.no visible damage.	Passive Component Human Body Model (HBM) direct contact discharge 8KV.	AEC-Q200-002 Or ISO/DIS10605
Solder ability	1. Lead must have 95% above coverage.	SMD: a) Method B, 4hrs@155℃ dry heat, @235℃	AEC-Q200 RevD Table 5
Flammability	1.Meet UL-94 V0 or V1 request	V-0 or V-1 Acceptable.	UL-94
Board Flex	1.Change from an initial value L:within±5% 2.no visible damage.	100mmX40mm board mechanical means to apply a force which will bend the board (D) x = 2 mm minimum, applied forces shall be 60 (+ 5) Sec.	AEC-Q200-005
Terminal Strenh (SMD)	1.Component can't drop 2.no visible damage.	1.8Kg force, applied for 60 second.	AEC-Q200-006

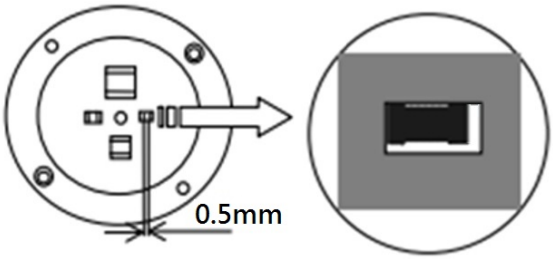
7. REFLOW CHART



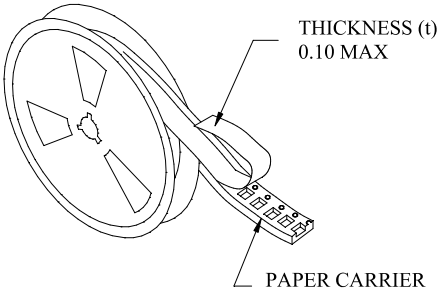
8. NOTE

- TOLERANCE：K:±10%、J:±5%、G:±2%、D:±0.5 nH、C:±0.2 nH
- INDUCTANCE AND Q MEASURED AN KEYSIGHT 4991B OR EQUIVALENT.
- SRF MEASURED USING AN KEYSIGHT 5071C NETWORK ANALYZER AND A INPAQ TEST FIXTURE OR EQUIVALENT.
- DC RESISTANCE MESASURED USING A MICRO-OHMMETER.
- CURRENT THAT CAUSES A 15°C TEMPERATURE RISE FROM 25°C AMBIENT.
- ELECTRICAL SPECIFICATIONS AT 25°C.
- OPERATING TEMPERATURE RANGE: -40°C to +125°C.
- STORAGE TEMPERATURE RANGE: COMPONENT: –40°C to +125°C.
  TAPE AND REEL PACKAGING: –40°C to +80°C.
- MEAN TIME BETWEEN FAILURES (MTBF) 1 BILLION HOURS.
- MOISTURE SENSITIVITY LEVEL (MSL) 1 (UNLIMITED FLOOR LIFE AT < 30°C / 85% RELATIVE HUMIDITY).
- GRAPHIC IS ONLY FOR DIMENSIONALLY APPLICATION.
- THIS IS A RoHS AND REACH COMPLLIANT PRODUCT WHOSE RELATED DOCUMENTSS ARE AVAILABLE ON REQUEST.
- TEST METHOD:

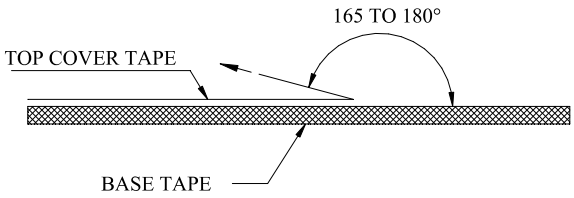
  POSITION COIL UNDER TEST AS SHOWN IN BELOW AND CONTACT COIL WITH EACH TERMINAL BY ADDING WEIGHT.

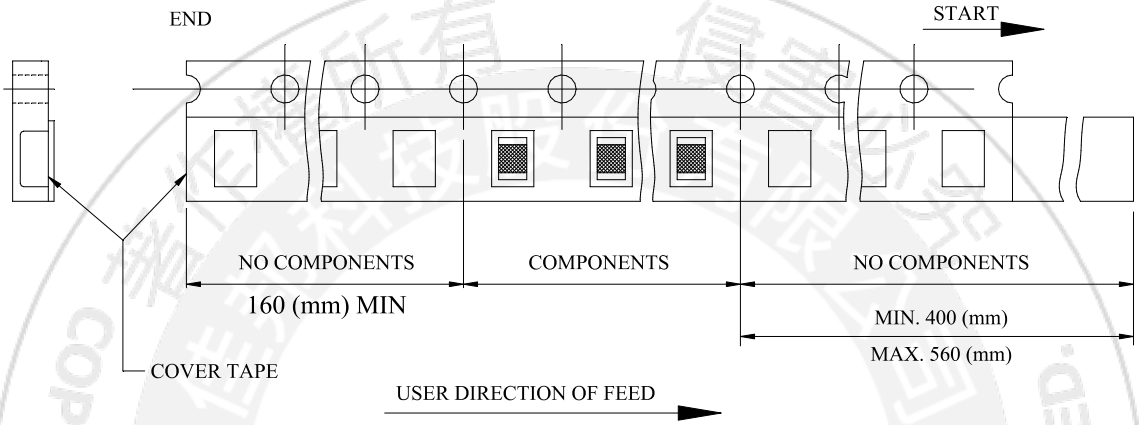


9. PACKING



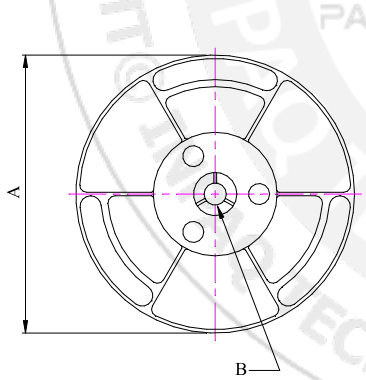
- THE FORCE FOR TEARING OFF COVER TAPE IS 10 TO 100 GRAMS IN THE ARROW DIRECTION.



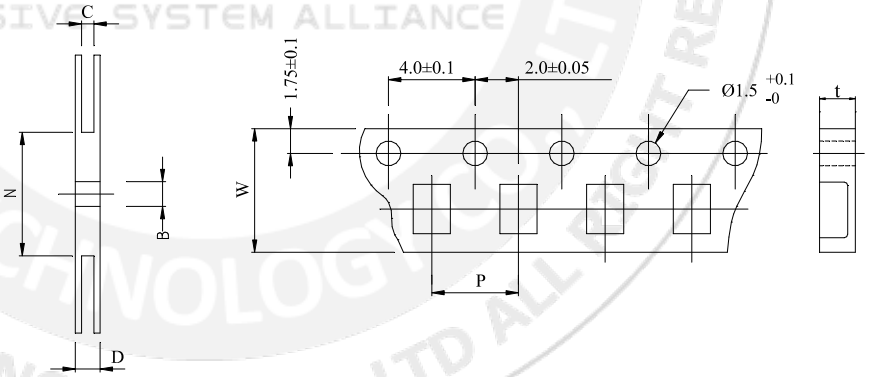


■ CARRIER TAPE REELS (mm)

MATERIAL:PAPER



■ DIMENSIONS OF CARRIER TAPE (mm)



UNIT: mm

	A	B	C	D	N	P	W	t
DIM.	178	13.0	8.4	14.4	50	2.0	8.0	0.75
TOL.	MAX.	+0.5–0.2	+2.0–0	MAX	MIN.	±0.1	±0.2	±0.05

Quantity : 4,000 Pcs/Reel