PSA 佳邦科技股份有限公司
INPAQ TECHNOLOGY CO., LTD.

WCA1608CP Series
Data Sheet

Product Name	WCA1608CP Series
Series	Chip Inductor
Size	EIAJ 1608
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	同比行業標准: 6N8 以下規格刪除 G 規	2024/08/09

1. SCOPE

1.1. Ceramic core wire wound construction.

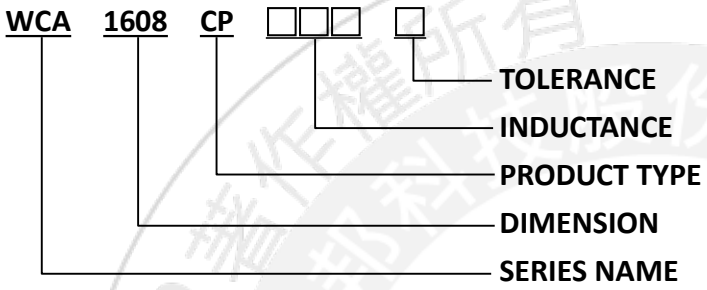
1.2. Excellent inductance accuracy.

1.3. Inductance values from 1.6 to 470 nH.

1.4. Exceptional Q and high SRF special for high frequency applications.

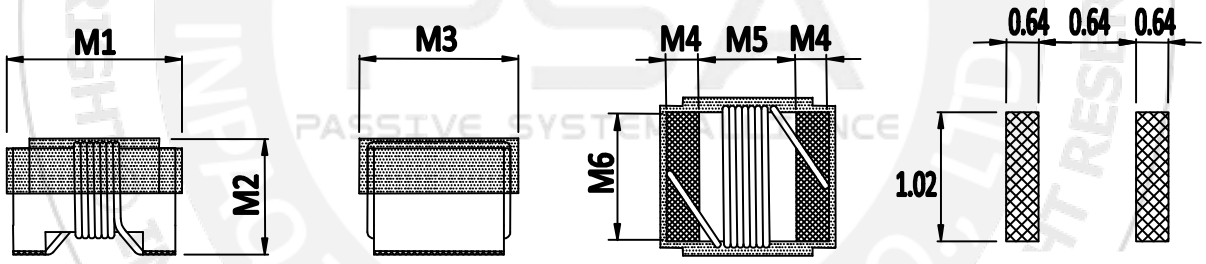
1.5. High reliability tests comply with AEC-Q200.

2. PART NUMBER IDENTIFICATION



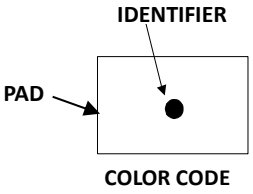
3. MECHANICAL DIMENSIONS

UNIT: mm



Series	M1	M2	M3	M4	M5	M6
WCA1608CP	1.8 MAX.	1.02 MAX.	1.12 MAX.	0.28±0.1	0.96±0.1	0.76±0.1

4. MARKING



Marking Direction: PAD is on the left and right, the color code is centered.
Example: WCA1608CP1N8□
MARKING: BROWN
MARK COLOR CODE IN COMPOSITE ELECTRICAL SPECIFICATION.

5. ELECTRICAL SPECIFICATION

Part number	Inductance (nH)	Inductance Tolerance	Q MIN.	Test Frequency (MHz)	SRF (MHz) MIN.	DC Resistance (Ω) MAX.	Irms (mA)	COLOR CODE
WCA1608CP1N6□	1.6	K,J	24	250	12500	0.030	700	BLACK
WCA1608CP1N8□	1.8	K,J	16	250	12500	0.045	700	BROWN
WCA1608CP2N1□	2.1	K,J	20	250	5800	0.050	700	RED
WCA1608CP2N2□	2.2	K,J	20	250	5800	0.100	700	ORANGE
WCA1608CP3N3□	3.3	K,J	20	250	5500	0.070	700	VIOLET
WCA1608CP3N6□	3.6	K,J	22	250	5900	0.063	700	RED
WCA1608CP3N9□	3.9	K,J	22	250	6900	0.080	700	ORANGE
WCA1608CP4N3□	4.3	K,J	22	250	5900	0.063	700	YELLOW
WCA1608CP4N7□	4.7	K,J	20	250	5800	0.116	700	GREEN
WCA1608CP5N1□	5.1	K,J	20	250	5700	0.140	700	BLUE
WCA1608CP5N6□	5.6	K,J	15	250	5800	0.150	700	GRAY
WCA1608CP6N1□	6.1	K,J	25	250	5800	0.110	700	WHITE
WCA1608CP6N3□	6.3	J	25	250	5800	0.110	700	GRAY
WCA1608CP6N8□	6.8	K,J,G	27	250	5800	0.110	700	VIOLET
WCA1608CP7N2□	7.2	K,J,G	28	250	4800	0.106	700	BLACK
WCA1608CP7N5□	7.5	K,J,G	28	250	4800	0.106	700	GRAY
WCA1608CP8N2□	8.2	K,J,G	25	250	5800	0.120	700	BLACK
WCA1608CP8N4□	8.4	K,J,G	28	250	4600	0.109	700	RED
WCA1608CP8N5□	8.5	K,J,G	28	250	4600	0.109	700	RED
WCA1608CP8N7□	8.7	J,G	28	250	4600	0.109	700	WHITE
WCA1608CP9N5□	9.5	J,G	28	250	5400	0.135	700	BLACK
WCA1608CP10N□	10	J,G	31	250	4800	0.130	700	BROWN
WCA1608CP11N□	11	J,G	33	250	4000	0.086	700	RED
WCA1608CP12N□	12	J,G	35	250	4000	0.130	700	ORANGE
WCA1608CP13N□	13	J,G	35	250	4000	0.15	700	YELLOW
WCA1608CP14N□	14	J,G	35	250	4000	0.170	700	BROWN
WCA1608CP15N□	15	J,G	35	250	4000	0.170	700	YELLOW
WCA1608CP16N□	16	J,G	34	250	3300	0.104	700	GREEN
WCA1608CP18N□	18	J,G	35	250	3100	0.170	700	BLUE
WCA1608CP20N□	20	J,G	40	250	3000	0.170	700	GREEN
WCA1608CP22N□	22	J,G	38	250	3000	0.190	700	VIOLET
WCA1608CP24N□	24	J,G	37	250	2650	0.135	700	GRAY
WCA1608CP27N□	27	J,G	40	250	2800	0.220	600	WHITE
WCA1608CP30N□	30	J,G	37	250	2250	0.220	600	BLACK
WCA1608CP33N□	33	J,G	40	250	2300	0.220	600	BROWN
WCA1608CP36N□	36	J,G	38	250	2080	0.250	600	RED
WCA1608CP39N□	39	J,G	40	250	2200	0.250	600	ORANGE
WCA1608CP43N□	43	J,G	39	250	2000	0.280	600	YELLOW
WCA1608CP47N□	47	J,G	38	200	2000	0.280	600	GREEN
WCA1608CP51N□	51	J,G	35	200	1900	0.270	600	BROWN
WCA1608CP56N□	56	J,G	38	200	1900	0.310	600	BLUE
WCA1608CP62N□	62	J,G	37	200	1800	0.340	600	GRAY
WCA1608CP68N□	68	J,G	37	200	1700	0.340	600	VIOLET
WCA1608CP72N□	72	J,G	34	150	1700	0.490	400	GRAY
WCA1608CP75N□	75	J,G	34	150	1700	0.52	400	BLUE
WCA1608CP82N□	82	J,G	34	150	1700	0.540	400	WHITE
WCA1608CP91N□	91	J,G	30	150	1700	0.500	400	BROWN
WCA1608CPR10□	100	J,G	34	150	1400	0.580	400	BLACK
WCA1608CPR11□	110	J,G	32	150	1350	0.610	300	BROWN

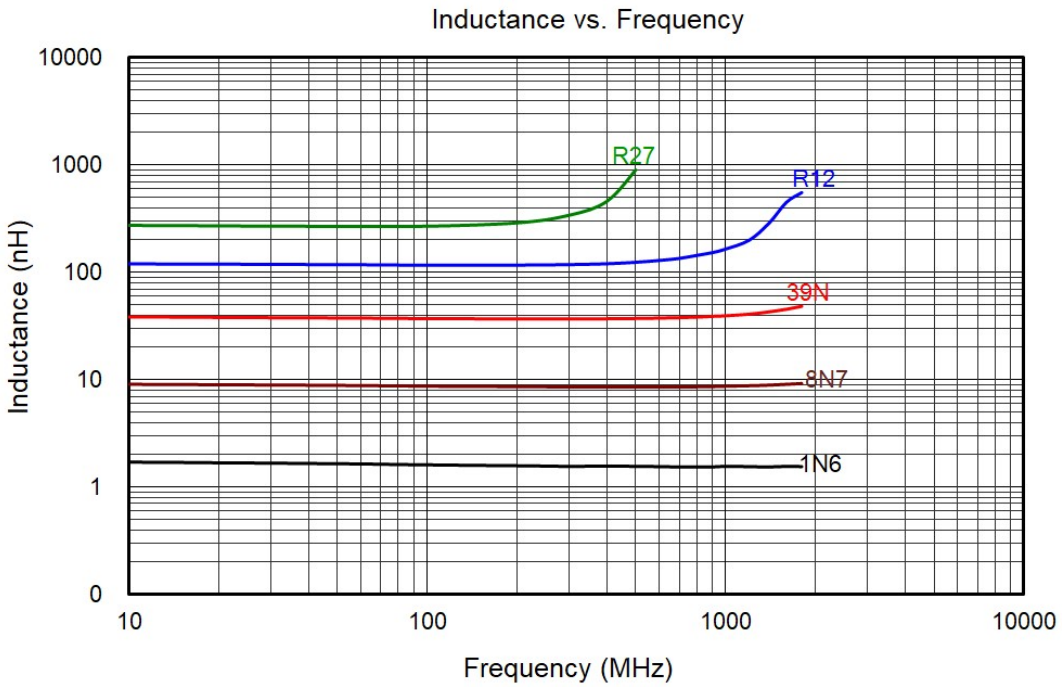
Part number	Inductance (nH)	Inductance Tolerance	Q MIN.	Test Frequency (MHz)	SRF (MHz) MIN.	DC Resistance (Ω) MAX.	Irms (mA)	COLOR CODE
WCA1608CPR12□	120	J,G	32	150	1300	0.650	300	RED
WCA1608CPR13□	130	J,G	30	150	1400	0.720	300	WHITE
WCA1608CPR15□	150	J,G	28	150	990	0.920	280	ORANGE
WCA1608CPR16□	160	J,G	25	100	1300	1.400	280	BROWN
WCA1608CPR18□	180	J,G	25	100	990	1.250	240	YELLOW
WCA1608CPR20□	200	J,G	25	100	990	1.980	200	RED
WCA1608CPR22□	220	J,G	25	100	900	1.900	200	GREEN
WCA1608CPR26□	260	J,G	25	100	1000	2.000	200	VIOLET
WCA1608CPR27□	270	J,G	24	100	900	2.300	170	BLUE
WCA1608CPR33□	330	J,G	24	100	900	3.90	185	VIOLET
WCA1608CPR39□	390	J,G	25	100	900	4.35	100	GRAY
WCA1608CPR43□	430	J,G	25	100	900	5.000	100	GRAY
WCA1608CPR47□	470	J,G	25	100	600	5.500	80	WHITE

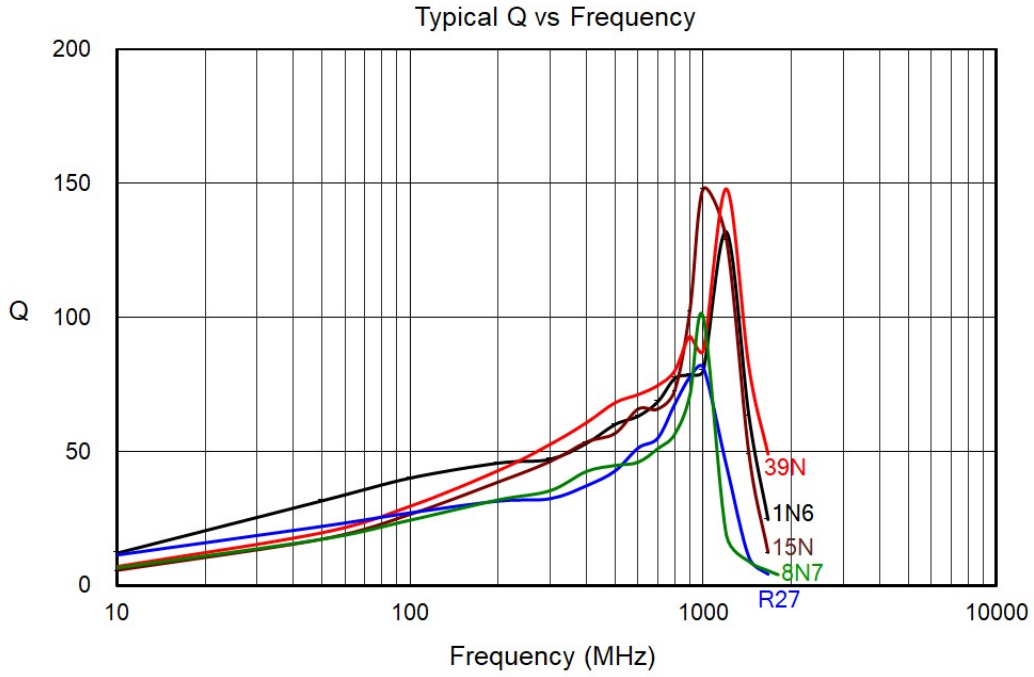
NOTE:

1. □Tolerance: K:±10%、J:±5%、G:±2%

2. MSL: Level 1

6. ELECTRICAL CURVE

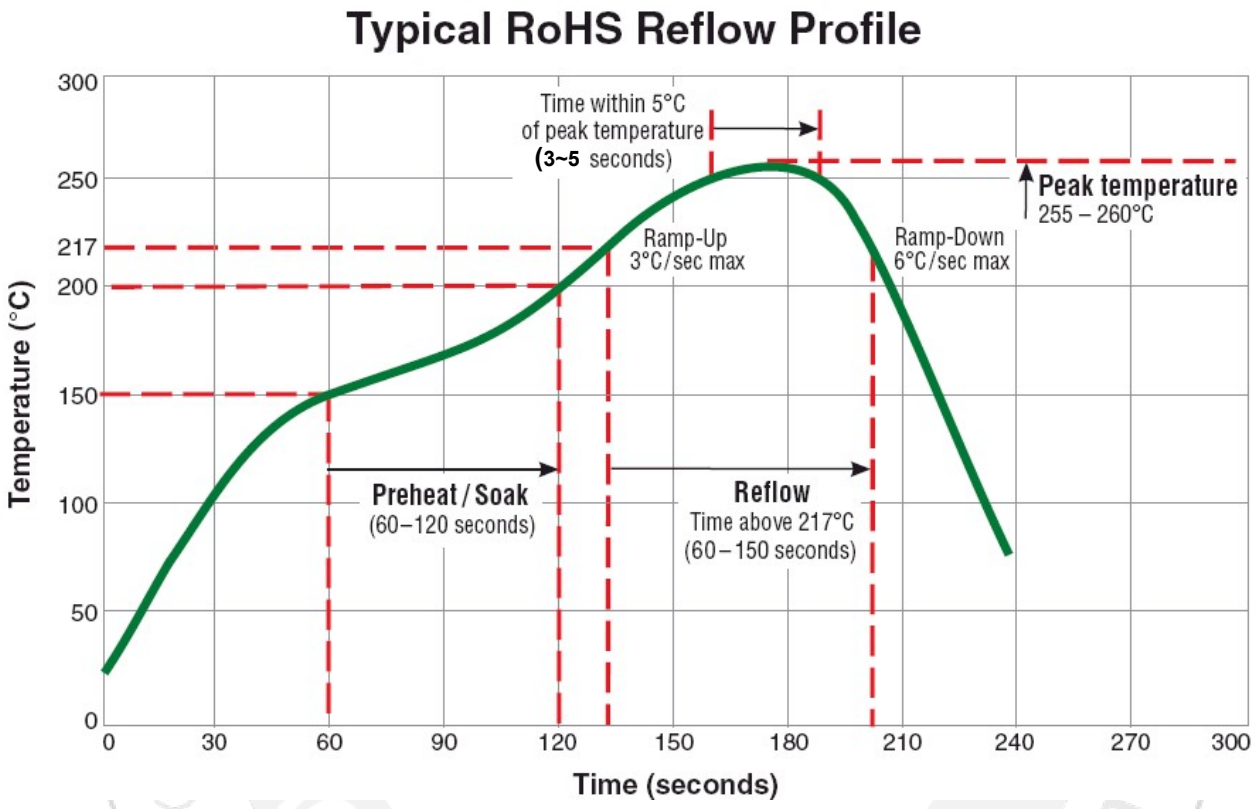




7. RELIABILITY PERFORMANCE

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

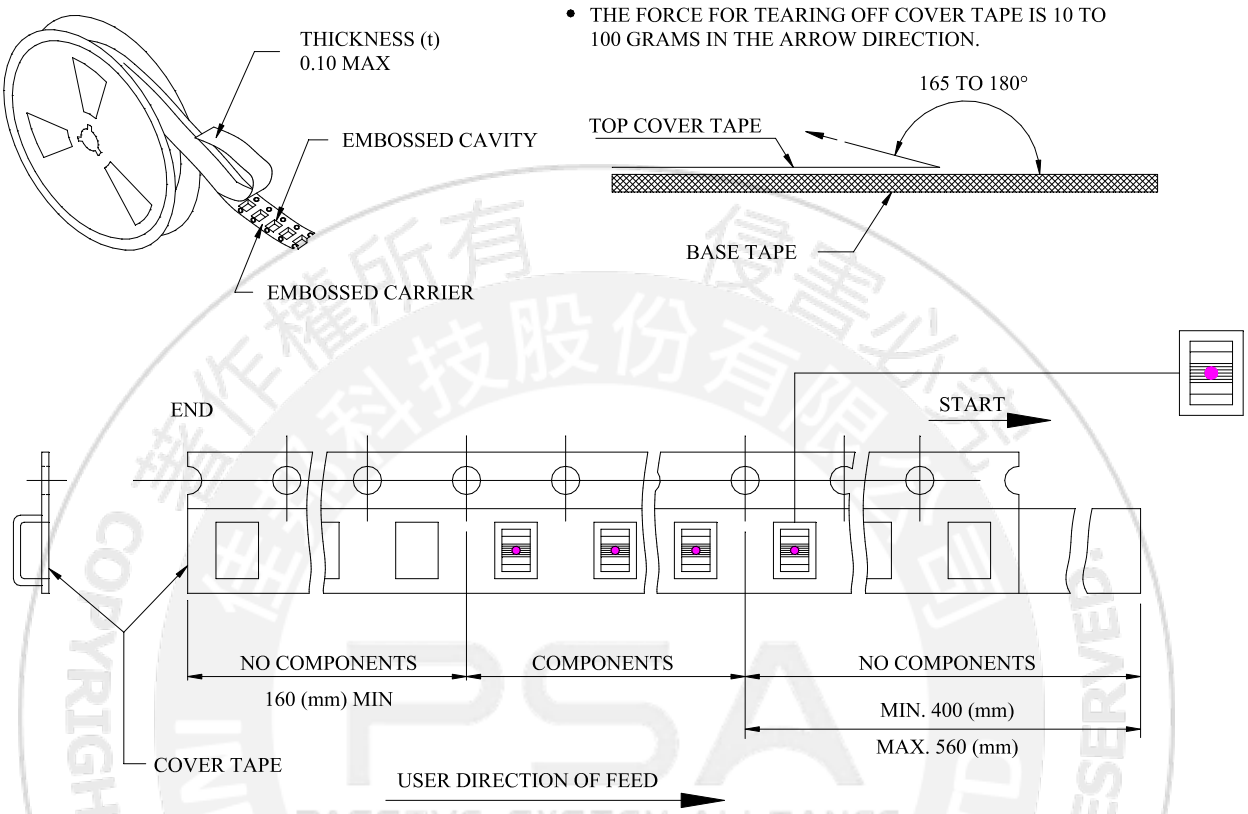
8. REFLOW CHART



9. NOTE

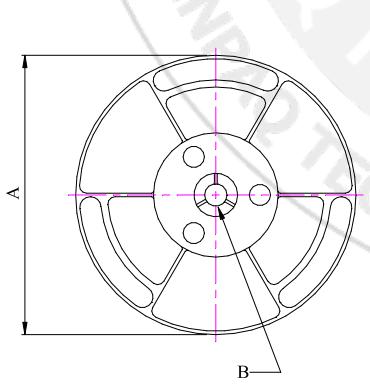
- TOLERANCE: K = ±10% 、J = ±5% 、G = ±2%
- INDUCTANCE AND Q MEASURED AN KEYSIGHT 4991B OR EQUIVALENT.
- SRF MEASURED USING AN KEYSIGHT 5071C NETWORK ANALYZER AND A INPAQ TEST FIXTURE OR EQUIVALENT.
- DC RESISTANCE MESASURED USING A MICRO-OHMMETER.
- CURRENT THAT CAUSES A 15°C TEMPERATURE RISE FROM 25°C AMBIENT.
- ELECTRICAL SPECIFICATIONS AT 25°C.
- OPERATING TEMPERATURE RANGE : -40℃ TO +125℃.
- 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.

10. PACKING

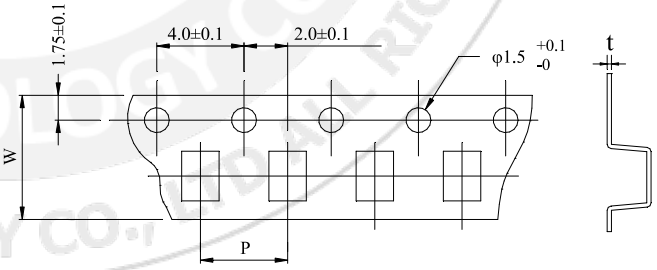


■ CARRIER TAPE REELS (mm)

MATERIAL: PLASTIC



■ DIMENSIONS OF CARRIER TAPE (mm)



UNIT: mm

	A	B	C	D	N	P	W	t
DIM.	180	13.0	8.4	12.5	50	4.0	8.0	0.25
TOL.	MAX.	±0.8	+1.0–0	MAX	MIN.	±0.1	±0.2	±0.05

Quantity : 4,000 Pcs/Reel