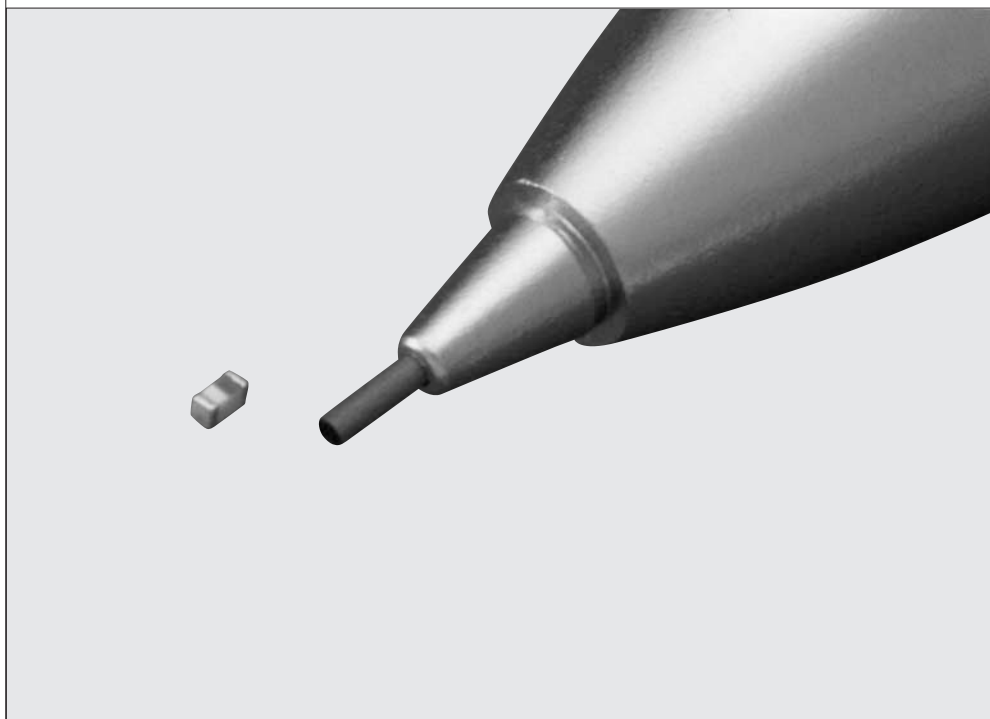


# MULTILAYER CHIP INDUCTORS FOR HIGH FREQUENCY

**AML1005H (0402) type**  
**AML1005Q (0402) type**  
**AML0603Q (0201) type**



FDK produces the multilayer chip inductors for high frequency, applying its advanced material technologies, simulation techniques and RF circuit design.

FDK's multilayer chip inductors for high frequency surely satisfy customer needs.

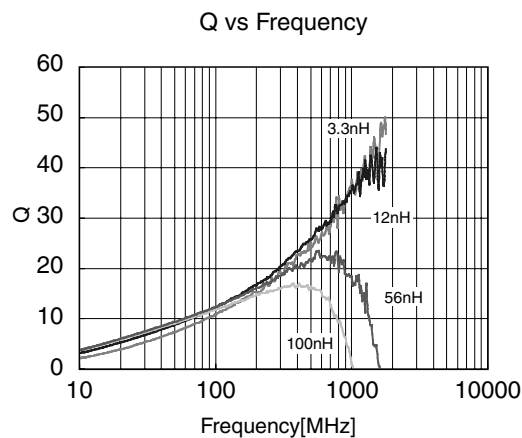
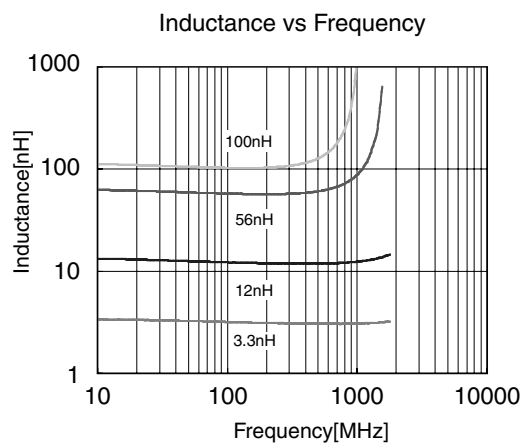
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## Electrical characteristics of AML1005H (0402) type

Part number	L[nH] 100MHz	Tolerance	Q min.	Q typ.					S.R.F. [MHz] typ.	DC Resistance [Ω] typ.	Rated current [mA]
				100 [MHz]	100 [MHz]	300 [MHz]	800 [MHz]	1000 [MHz]			
AML1005H1N0ST	1.0	S	8	10	17	30	35	>10000	0.04	300	
AML1005H1N2ST	1.2	S	8	10	17	30	35	>10000	0.04	300	
AML1005H1N5ST	1.5	S	8	10	17	30	34	>10000	0.05	300	
AML1005H1N8ST	1.8	S	8	10	17	30	35	9500	0.05	300	
AML1005H2N2ST	2.2	S	8	10	18	30	33	8500	0.07	300	
AML1005H2N7ST	2.7	S	8	11	19	30	34	7500	0.08	300	
AML1005H3N3ST	3.3	S	8	11	18	30	36	6500	0.10	300	
AML1005H3N9ST	3.9	S	8	11	19	31	34	6200	0.11	300	
AML1005H4N7ST	4.7	S	8	12	20	32	35	5700	0.15	300	
AML1005H5N6ST	5.6	S	8	11	20	34	35	5200	0.16	300	
AML1005H6N8JT	6.8	J	8	11	19	33	34	4500	0.19	250	
AML1005H8N2JT	8.2	J	8	11	20	33	35	4000	0.20	250	
AML1005H10NJT	10	J	8	11	20	30	34	3700	0.25	250	
AML1005H12NJT	12	J	8	11	19	31	35	2900	0.25	250	
AML1005H15NJT	15	J	8	12	21	32	34	2500	0.31	250	
AML1005H18NJT	18	J	8	12	21	31	34	2300	0.32	200	
AML1005H22NJT	22	J	8	12	20	31	33	1900	0.35	200	
AML1005H27NJT	27	J	8	11	16	27	33	1700	0.49	200	
AML1005H33NJT	33	J	8	12	19	27	30	1680	0.62	200	
AML1005H39NJT	39	J	8	12	19	26	31	1650	0.65	150	
AML1005H47NJT	47	J	8	12	20	25	27	1300	0.80	150	
AML1005H56NJT	56	J	8	11	18	25	23	1250	0.85	150	
AML1005H68NJT	68	J	8	12	20	24	21	1150	1.00	150	
AML1005H82NJT	82	J	8	11	20	24	19	1000	1.60	100	
AML1005HR10JT	100	J	8	11	16	13	—	900	2.00	100	

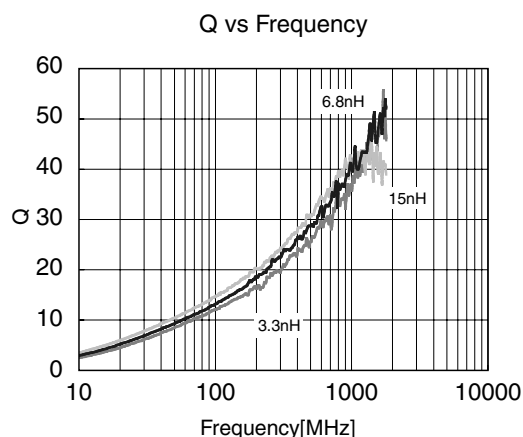
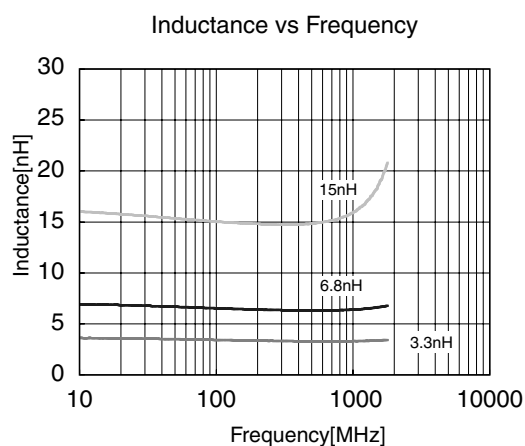
Inductance tolerance : (S=±0.3nH, J=±5%)



## Electrical characteristics of AML1005Q (0402) type

Part number	L[nH] 100MHz	Tolerance	Q	Q typ.			S.R.F [MHz] typ.	DC Resistance [Ω] typ.	Rated current [mA]
			min. 100 [MHz]	100 [MHz]	800 [MHz]	1000 [MHz]			
AML1005Q1N0ST	1.0	S	9	11	34	40	>10000	0.04	300
AML1005Q1N2ST	1.2	S	9	11	34	40	>10000	0.04	300
AML1005Q1N5ST	1.5	S	9	11	34	40	>10000	0.05	300
AML1005Q1N8ST	1.8	S	9	11	34	40	>10000	0.05	300
AML1005Q2N2ST	2.2	S	9	11	34	40	>10000	0.07	300
AML1005Q2N7ST	2.7	S	10	12	34	40	9500	0.08	300
AML1005Q3N3ST	3.3	S	10	12	34	40	8200	0.10	300
AML1005Q3N9ST	3.9	S	10	12	34	40	7600	0.11	300
AML1005Q4N7ST	4.7	S	10	12	35	40	7500	0.12	300
AML1005Q5N6ST	5.6	S	10	13	35	40	6300	0.15	300
AML1005Q6N8JT	6.8	J	10	13	35	40	5800	0.17	250
AML1005Q8N2JT	8.2	J	10	14	35	40	5300	0.19	250
AML1005Q10NJT	10	J	10	14	35	40	4500	0.21	250
AML1005Q12NJT	12	J	10	14	35	40	3800	0.25	250
AML1005Q15NJT	15	J	10	14	35	40	3000	0.28	250
AML1005Q18NJT	18	J	10	14	35	40	2600	0.28	250

Inductance tolerance : (S=±0.3nH, J=±5%)

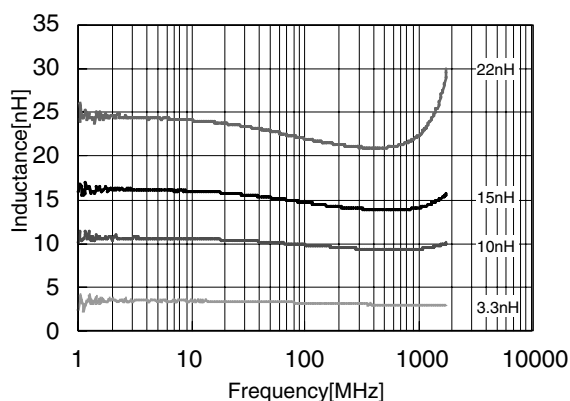


## Electrical characteristics of AML0603Q (0201) type

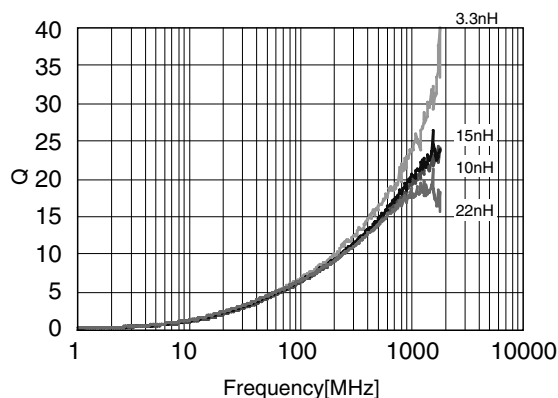
Part number	L[nH] 100MHz	Tolerance	Q	Q typ.			S.R.F [MHz] typ.	DC Resistance [Ω] typ.	Rated current [mA]
			min. 100 [MHz]	100 [MHz]	800 [MHz]	1000 [MHz]			
AML0603Q1N0ST	1.0	S	4	6	16	21	>10000	0.07	300
AML0603Q1N2ST	1.2	S	4	6	16	21	>10000	0.07	300
AML0603Q1N5ST	1.5	S	4	6	18	23	>10000	0.07	300
AML0603Q1N8ST	1.8	S	4	6	18	23	>10000	0.10	300
AML0603Q2N2ST	2.2	S	4	6	18	22	>10000	0.12	200
AML0603Q2N7ST	2.7	S	4	6	19	22	9500	0.14	200
AML0603Q3N3ST	3.3	S	4	6	19	22	9000	0.17	200
AML0603Q3N9ST	3.9	S	4	6	19	22	7900	0.20	150
AML0603Q4N7ST	4.7	S	4	6	18	21	7500	0.39	150
AML0603Q5N6ST	5.6	S	4	6	18	21	6900	0.40	150
AML0603Q6N8JT	6.8	J	4	6	18	21	6400	0.46	100
AML0603Q8N2JT	8.2	J	4	6	17	20	6000	0.54	100
AML0603Q10NJT	10	J	4	6	17	20	5100	0.63	100
AML0603Q12NJT	12	J	4	6	17	20	4500	0.70	100
AML0603Q15NJT	15	J	4	6	16	19	3500	1.30	100
AML0603Q18NJT	18	J	4	6	16	18	3000	1.50	100
AML0603Q22NJT	22	J	4	6	16	17	2300	1.70	100
AML0603Q27NJT	27	J	Under development						
AML0603Q33NJT	33	J							
AML0603Q39NJT	39	J							
AML0603Q47NJT	47	J							

Inductance tolerance : (S=±0.3nH, J=±5%)

Inductance vs. Frequency



Q vs. Frequency



## Features

AML 1005H (0402) type

- Wide range inductance value from 1 to 100nH
- High Q characteristics
- High reliability by monolithic structure

AML 1005Q (0402) type

- Ultra high Q characteristics
- High reliability by monolithic structure

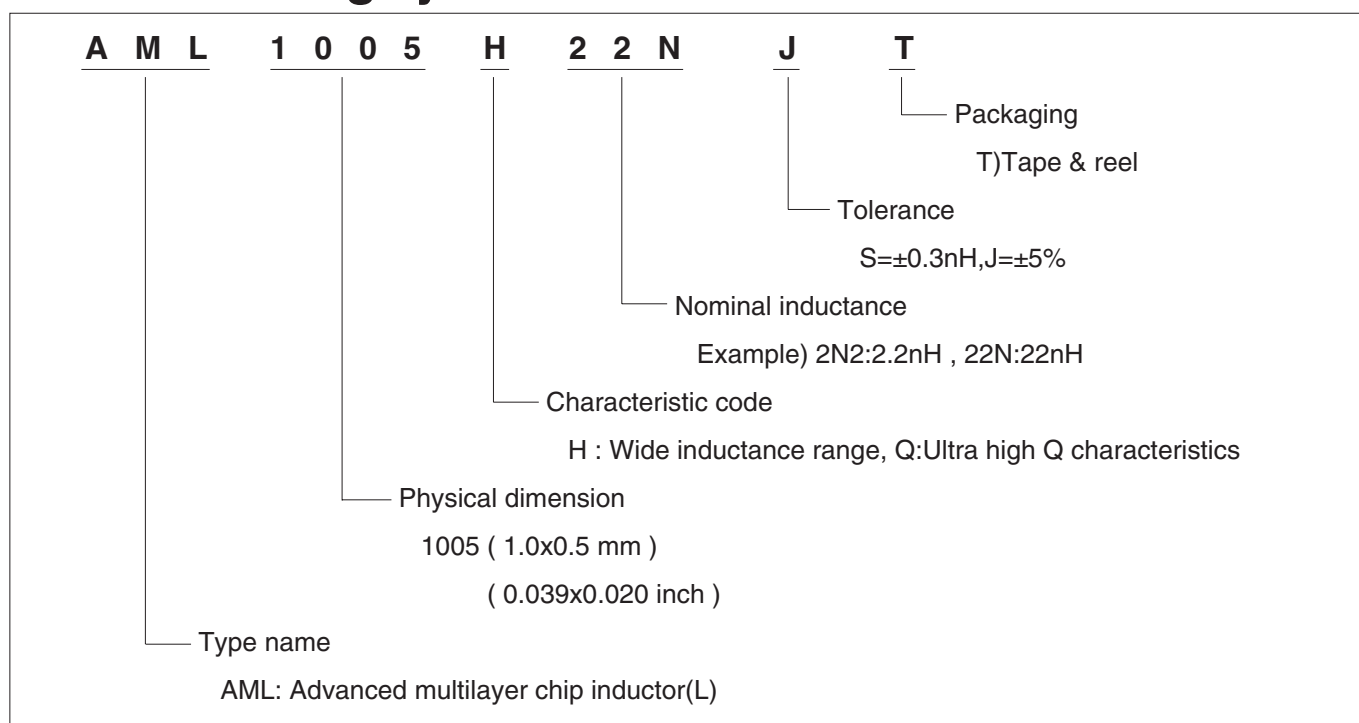
AML 0603Q (0201) type

- Wide range inductance value from 1 to 47nH
- High Q characteristics

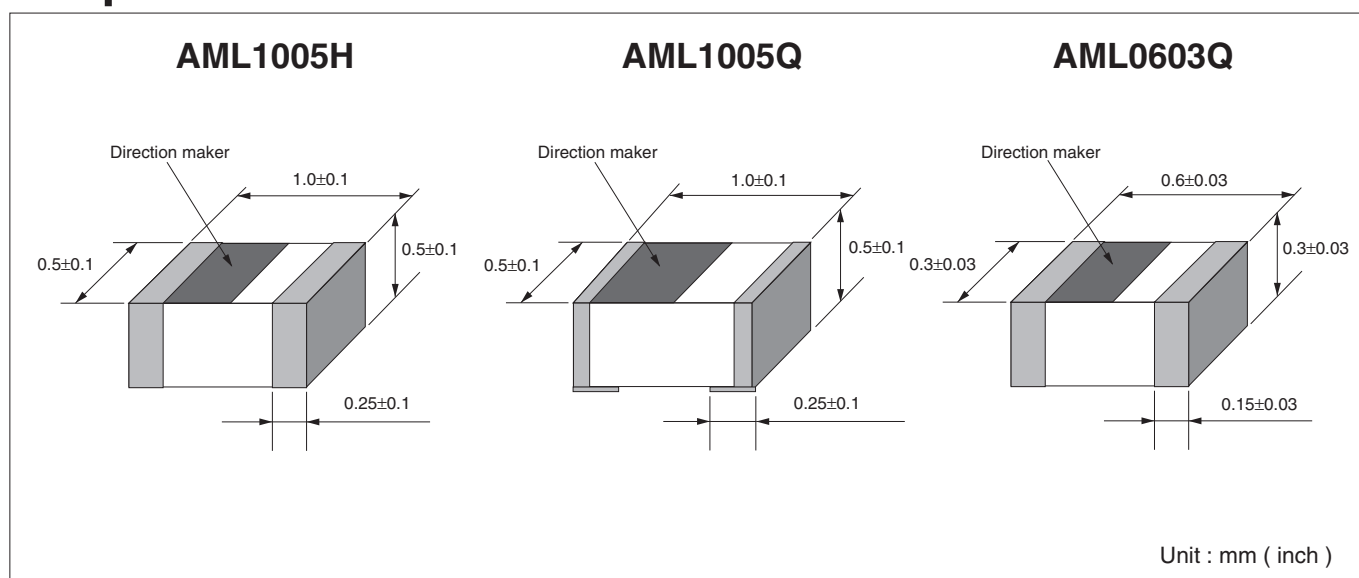
## Applications

- Mobile telephones, PHS, Bluetooth
- RF cricuits

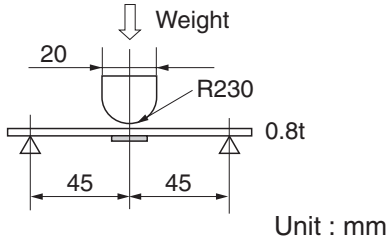
## Part numbering system



## Shape & dimensions



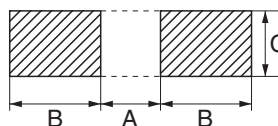
## Mechanical & environmental test

	Item	Specification	Test methods and remarks
Mechanical test	Resistance to flexure of substrate	No mechanical damage	<p>Solderd chip on PC board is to be bent down to 2mm.</p>  <p style="text-align: right;">Unit : mm</p>
	Solderability	At least 75% of terminal electrode must be covered with new solder.	Pre-heat at 160°C for 2 to 3 minutes. Soak into the melted solder bath of 230±5°C for 4±1 seconds.
	Resistance to soldering	No mechanical damage Remaining terminal electrode : 70% min.	Pre-heat at 160°C for 2 to 3 minutes. Soak into the melted solder bath of 260±5°C for 10±0.5 seconds.
Environmental test	Damp heat	No mechanical damage L within ±10% Q within ±20%	Expose to 60°C, 90RH% for 500 hours. Measure at room temperature in 2 hours.
	Thermal shock	No mechanical damage L within ±10% Q within ±20%	Solder the sample on PC board. Expose to 100 cycles of +125°C for 60 minutes and -55°C for 60 minutes. Measure at room temperature in 2 hours.
	Loading at high Temperature	No mechanical damage L within ±10% Q within ±20%	Apply the rated current under the exposure to 125°C for 500 hours. Measure at room temperature in 2 hours.
	Loading under damp heat	No mechanical damage L within ±10% Q within ±20%	Apply the rated current under the exposure to 60°C, 90RH% for 500 hours. Measure at room temperature in 2 hours.
	Temperature characteristic	L within ±10%	Measure L change at the temperature of -25°C and +85°C with reference to L at 20°C.

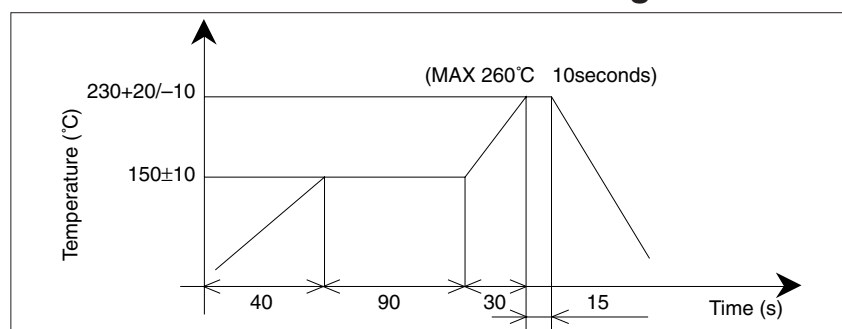
## Soldering condition

### Recommended land dimensions(mm)

	Flow soldering	Reflow soldering
A	0.3 ~ 0.5	0.25 ~ 0.35
B	0.4 ~ 0.5	0.25 ~ 0.35
C	0.3 ~ 0.4	0.25 ~ 0.35



### Recommended condition for soldering



- Conditions for soldering temperature should be determined after the confirmation that beforehand soldering tests are not abnormal.

## Precaution

### 1. Application

- 1-1. Please be sure to preheat before flow soldering or reflow soldering.
- 1-2. PC board mounted the inductor must be care not to give any physical stress to it.
- 1-3. The appropriate cleaning solution must be selected when cleaning the PC board after the Inductors are mounted.

### 2. Storage

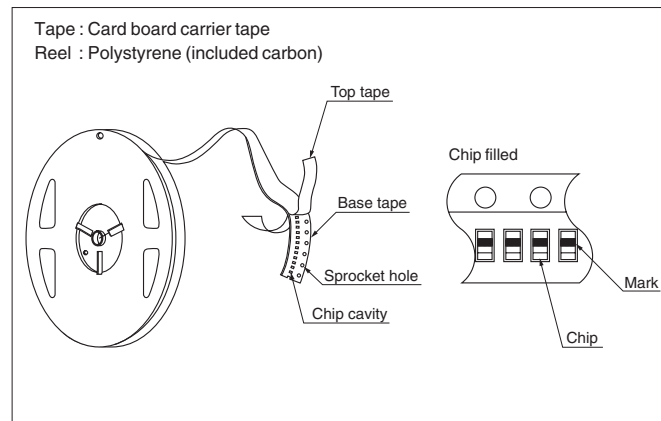
- 2-1. The ambient temperature must be kept below 40°C and below 70%RH, the Inductor should be used within 6 months from the day of delivery.
- 2-2. The packaging material should be kept where no organic gases with chlorine or sulfur existed in an air.

# Packaging

## 1. Standard quantity

Type	Thickness [mm](inch)	Standard quantity (pcs) Paper tape
AML1005H, AML1005Q	0.5	10,000
AML0603Q	0.3	15,000

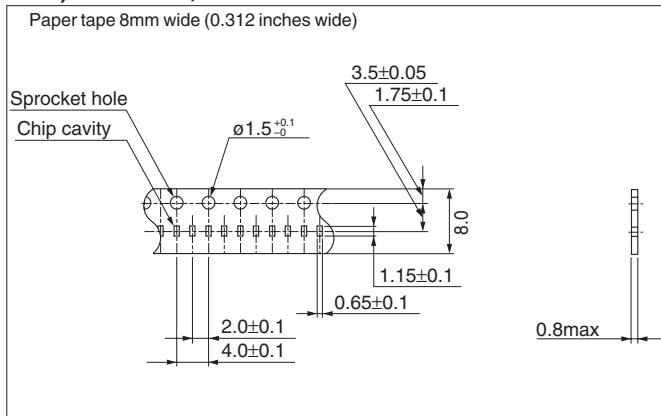
## 2. Material



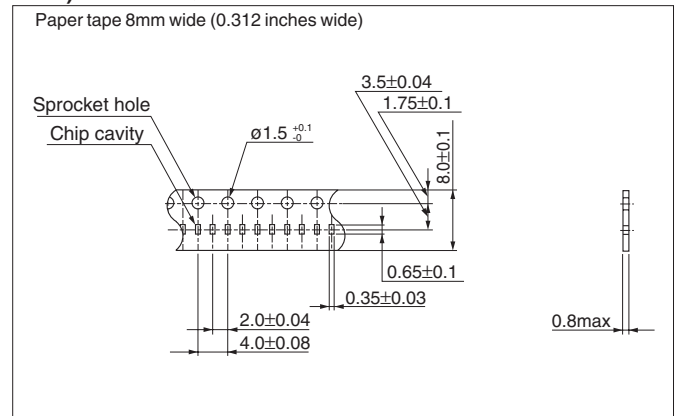
## 3. Taping dimensions

Unit : mm (inch)

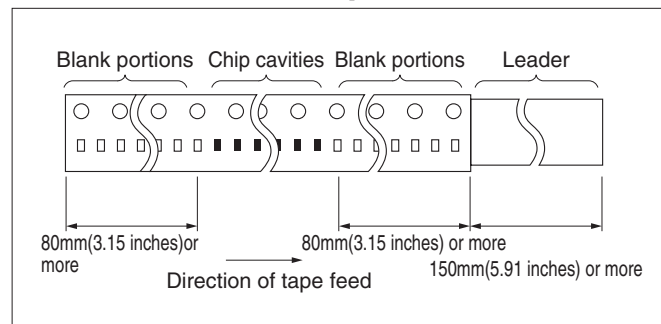
### 1) AML1005H, AML1005Q



### 2) AML0603Q



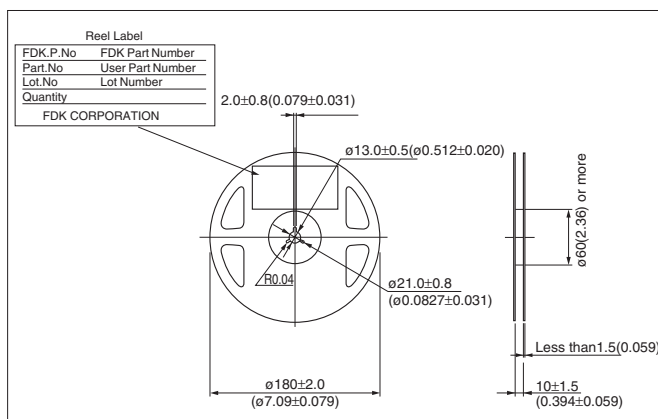
## 4. Leader and blank portion Unit : mm (inch)





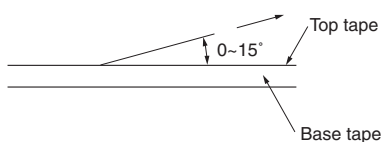
### 5. Reel size

Unit : mm (inch)



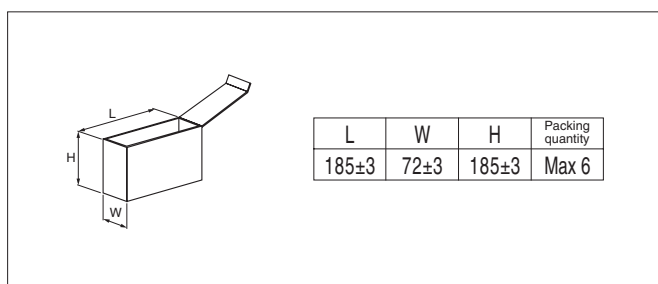
### 6. Top tape strength

The top tape requires a peel-off force of 0.1~0.7N in the direction of the arrow as illustrated below.



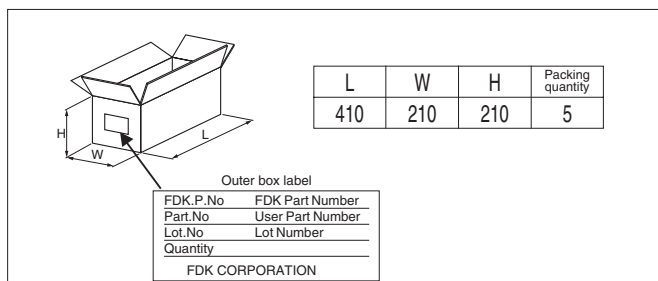
### 7. Inner box dimensions

(mm)



### 8. Outer box dimensions

(mm)





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