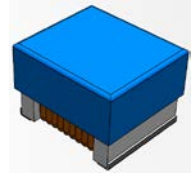


CM241614A Series



1. Features of CM241614A Series :

- 0805 Foot print, 1.45mm height for Signal Line application.
- Inductance range from 2.2nH to 4,700.0nH.
- Can be used for high frequency bands up to GHz and stable inductance at high frequency.
- Resin-coated surface enables excellent mounting
- RoHS, Halogen Free and Reach Compliant
- Operating Temperature Range -40°C to + 125°C.

2. Applications:

- For high-frequency applications including mobile phones, portable phones, such as PA, ANT, VCO, SAW, etc.
- Mobile phones such as GSM, CDMA, PDC, etc.
- Bluetooth, W-LAN

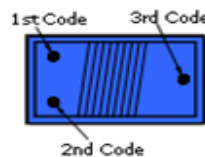
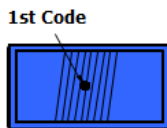
3. Product Identification:

CM 241614 A - 47N J HF

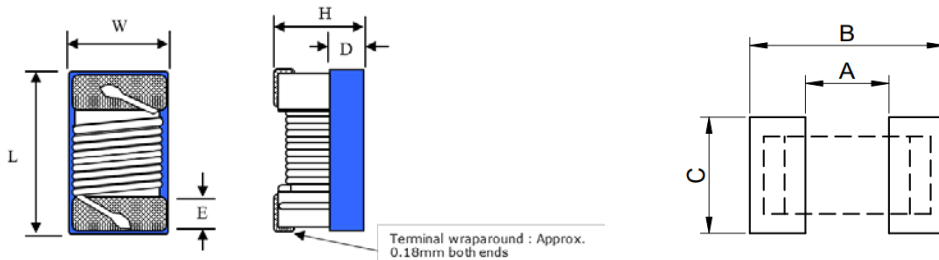
① ② ③ ④ ⑤ ⑥

- ① Product Family Code
- ② Dimension Code (LxWxH)mm
- ③ Design Code
- ④ Inductance
- ⑤ Tolerance Code (G=2%, J=±5%, K=±10%, M=±20%)
- ⑥ Halogen Free

4. Color Coding position:



5. Dimensions and Recommended PCB layout:



Size	L	W	H	D	E	A	B	C
181210(0603)	1.80 Max.	1.20 Max.	1.02 Max.	0.45 ref.	0.33±0.1	0.64	1.92	1.02
241614(0805)	2.40 Max.	1.65 Max.	1.45 Max.	0.65 ref.	0.44±0.1	0.76	2.80	1.78
292520(1008)	2.90 Max.	2.54 Max.	2.03 Max.	1.30 ref.	0.45±0.1	1.27	3.31	2.54
352115(1206)	3.56 Max.	2.16 Max.	1.52 Max.	0.51 ref.	0.51 ref.	1.78	3.82	1.93

NOTE : Unit mm

● New York 1 914 347 2474 ● Taipei 886 2 2698 8669 ● Kaohsiung 886 7 350 2275
 ● Japan 81 568 85 2830 ● Shenzhen 86 755 8418 6263 ● Shanghai 86 21 5424 5141 ● Hong Kong 852 9688 9767
 ● sales@ITG-Electronics.com ● www.ITG-Electronics.com Revision A.0: Sep. 4, 2019

*Due to continuous product improvement, all specifications are subject to change without prior notice. Kindly contact an ITG field application engineer or a sales representative prior to purchase.

CM241614A Series



1. CM241614A Series Electrical Characteristics:

ITG Part Number	Inductance (nH)/MHz	TOL.	Q/MHz Min.	SRF (MHz) Min.	DCR (Ω) Max.	Irms (mA) Max.	Color Coding
CM241614A-2N2□HF	2.2/250	K	50/1000	7900	0.05	800	Violet
CM241614A-2N7□HF	2.7/250	J,K	50/1500	7900	0.058	800	Blue
CM241614A-2N8□HF	2.8/250	J,K	55/1500	7900	0.06	800	Gray
CM241614A-3N0□HF	3.0/250	J,K	55/1500	7900	0.08	800	White
CM241614A-3N3□HF	3.3/250	J,K	45/1500	7900	0.12	600	Black
CM241614A-4N1□HF	4.1/250	J,K	60/1000	5800	0.06	600	Brown
CM241614A-5N1□HF	5.1/250	J,K	60/1000	5800	0.06	600	Yellow
CM241614A-5N6□HF	5.6/250	J,K	65/1000	5500	0.08	600	Orange
CM241614A-6N2□HF	6.2/250	J,K	50/1000	5500	0.11	800	Violet
CM241614A-6N8□HF	6.8/250	J,K	50/1000	5500	0.11	600	Brown
CM241614A-7N5□HF	7.5/250	J,K	50/1000	4500	0.14	600	Green
CM241614A-8N2□HF	8.2/250	J,K	50/1000	4700	0.16	600	Red
CM241614A-8N7□HF	8.7/250	J,K	50/1000	4700	0.23	600	Violet
CM241614A-10N□HF	10/250	G,J,K	60/500	4200	0.10	600	Blue
CM241614A-12N□HF	12/250	G,J,K	50/500	4000	0.15	600	Orange
CM241614A-14N□HF	14/250	G,J,K	50/500	3400	0.17	600	Yellow
CM241614A-15N□HF	15/250	G,J,K	50/500	3400	0.17	700	Yellow
CM241614A-16N□HF	16/250	G,J,K	50/500	3300	0.19	600	Green
CM241614A-18N□HF	18/250	G,J,K	50/500	3300	0.20	600	Green
CM241614A-22N□HF	22/250	G,J,K	55/500	2600	0.22	500	Blue
CM241614A-24N□HF	24/250	G,J,K	50/500	2000	0.22	500	Gray
CM241614A-27N□HF	27/250	G,J,K	55/500	2500	0.25	500	Violet
CM241614A-33N□HF	33/250	G,J,K	60/500	2050	0.27	500	Gray
CM241614A-36N□HF	36/250	G,J,K	55/500	1700	0.27	500	Orange
CM241614A-39N□HF	39/250	G,J,K	60/500	2000	0.29	500	White
CM241614A-43N□HF	43/200	G,J,K	60/500	1650	0.34	500	Yellow
CM241614A-47N□HF	47/200	G,J,K	60/500	1650	0.31	700	Black

CM241614A Series



1. CM241614A Series Electrical Characteristics:

ITG Part Number	Inductance (nH)/MHz	TOL.	Q/MHz Min.	SRF (MHz) Min.	DCR (Ω) Max.	Irms (mA) Max.	Color Coding
CM241614A-50N□HF	50/200	G,J,K	60/500	1650	0.34	500	Green
CM241614A-56N□HF	56/200	G,J,K	60/500	1550	0.34	500	Brown
CM241614A-68N□HF	68/200	G,J,K	60/500	1450	0.38	500	Red
CM241614A-72N□HF	72/200	G,J,K	60/500	1400	0.40	400	Orange
CM241614A-75N□HF	75/200	G,J,K	60/500	1400	0.40	400	Violet
CM241614A-82N□HF	82/150	G,J,K	65/500	1300	0.42	400	Orange
CM241614A-91N□HF	91/150	G,J,K	65/500	1200	0.48	400	Black
CM241614A-R10□HF	100/150	G,J,K	65/500	1200	0.46	400	Yellow
CM241614A-R11□HF	110/150	G,J,K	50/250	1000	0.48	400	Brown
CM241614A-R12□HF	120/150	G,J,K	50/250	1100	0.51	400	Green
CM241614A-R13□HF	130/150	G,J,K	50/250	1000	0.55	400	Orange
CM241614A-R15□HF	150/100	G,J,K	50/250	920	0.56	400	Blue
CM241614A-R16□HF	160/100	G,J,K	50/250	900	0.60	400	Gray
CM241614A-R18□HF	180/100	G,J,K	50/250	870	0.64	400	Violet
CM241614A-R20□HF	200/100	G,J,K	50/250	865	0.68	400	Red
CM241614A-R22□HF	220/100	G,J,K	50/250	850	0.70	400	Gray
CM241614A-R24□HF	240/100	G,J,K	44/250	690	1.00	350	Red
CM241614A-R25□HF	250/100	G,J,K	48/250	680	1.00	350	Yellow
CM241614A-R27□HF	270/100	G,J,K	48/250	650	1.00	350	White
CM241614A-R29□HF	290/100	G,J,K	48/250	650	1.40	330	Yellow
CM241614A-R30□HF	300/100	G,J,K	48/250	790	1.40	330	Green
CM241614A-R33□HF	330/100	G,J,K	48/250	750	1.40	310	Black
CM241614A-R36□HF	360/100	G,J,K	48/250	650	1.45	300	Orange
CM241614A-R39□HF	390/100	G,J,K	48/250	560	1.50	290	Brown
CM241614A-R43□HF	430/50	G,J,K	33/100	430	1.70	270	Blue
CM241614A-R47□HF	470/50	G,J,K	30/100	375	1.76	250	Violet
CM241614A-R56□HF	560/25	G,J,K	23/50	340	1.90	230	Orange

CM241614A Series



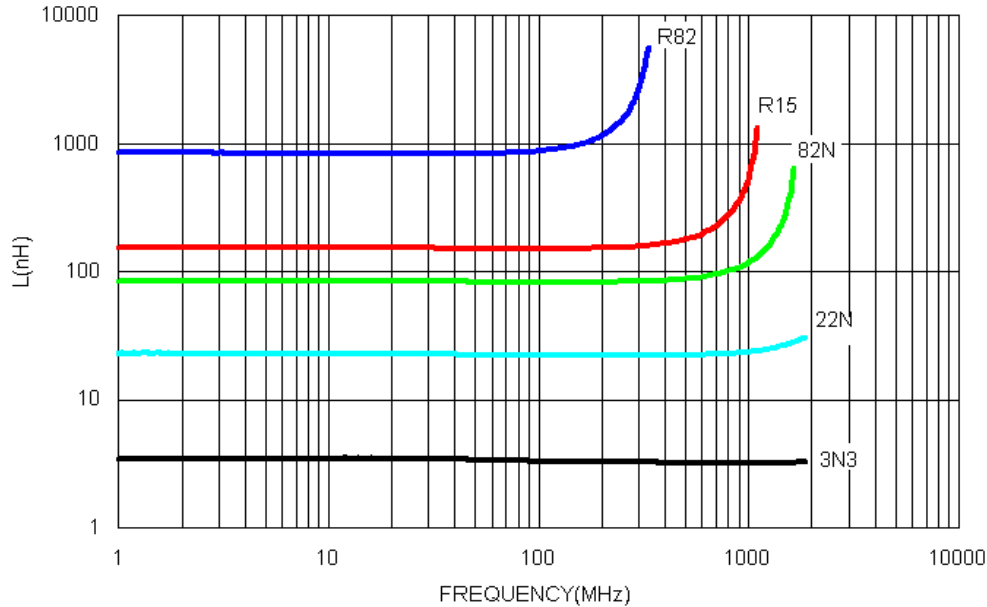
1. CM241614A Series Electrical Characteristics:

ITG Part Number	Inductance (nH)/MHz	TOL.	Q/MHz Min.	SRF (MHz) Min.	DCR (Ω) Max.	Irms (mA) Max.	Color Coding
CM241614A-R62□HF	620/25	G,J,K	23/50	220	2.20	210	White
CM241614A-R68□HF	680/25	G,J,K	23/50	188	2.20	190	Green
CM241614A-R75□HF	750/25	G,J,K	23/50	200	2.30	180	Violet
CM241614A-R82□HF	820/25	G,J,K	23/50	215	2.35	180	Blue
CM241614A-R88□HF	880/25	G,J,K	22/50	212	2.38	180	Green
CM241614A-R91□HF	910/25	J,K	22/50	210	2.40	180	Yellow
CM241614A-R93□HF	930/25	G,J,K	22/50	200	2.45	180	Green
CM241614A-1R0□HF	1,000/25	G,J,K	22/50	200	2.45	180	Violet
CM241614A-1R2□HF	1,200/7.9	G,J,K	16/7.9	160	2.45	170	Green
CM241614A-1R5□HF	1,500/7.9	G,J,K	16/7.9	120	2.50	170	Black
CM241614A-1R8□HF	1,800/7.9	G,J,K	16/7.9	80	2.50	170	Brown
CM241614A-2R2□HF	2,200/7.9	G,J,K	16/7.9	60	2.70	160	Red
CM241614A-2R7□HF	2,700/7.9	G,J,K	16/7.9	50	4.00	160	Orange
CM241614A-4R7□HF	4,700/7.9	J,K	10/7.9	40	15	130	Yellow

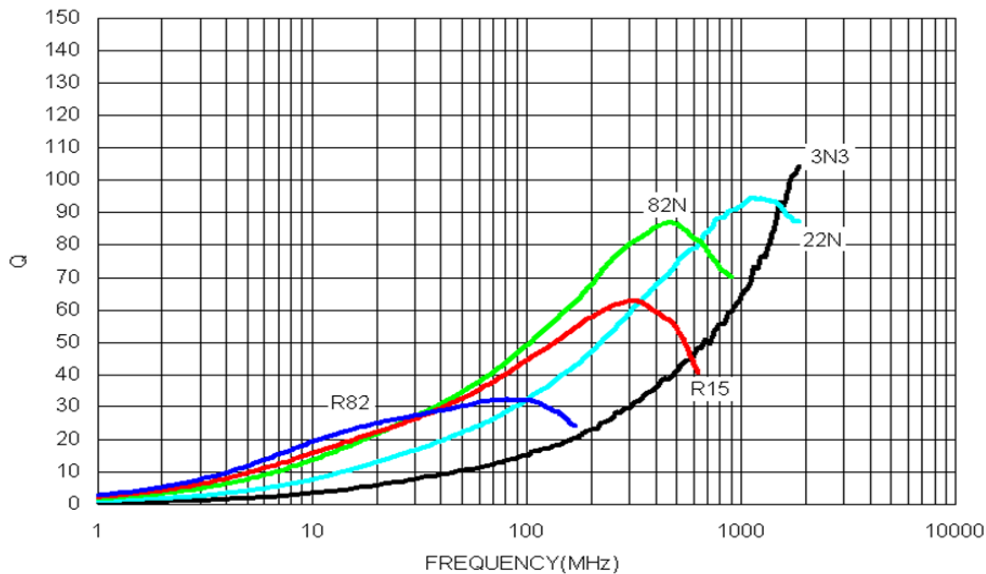
Noted:

1. L, Q, SRF : Agilent/HP E4991A+ Agilent/HP16197A
(The electrical specification test by the smallest gap position) or HP16193A
2. Rdc : DIGITAL MILLIOHM METER Chroma 16502, or equivalent.
3. Irms for a 15°C rise above 25°C ambient.
4. Operating temperature range from -40°C to 125°C.

2. CM241614A Series Inductance and Q vs. Frequency characteristics:

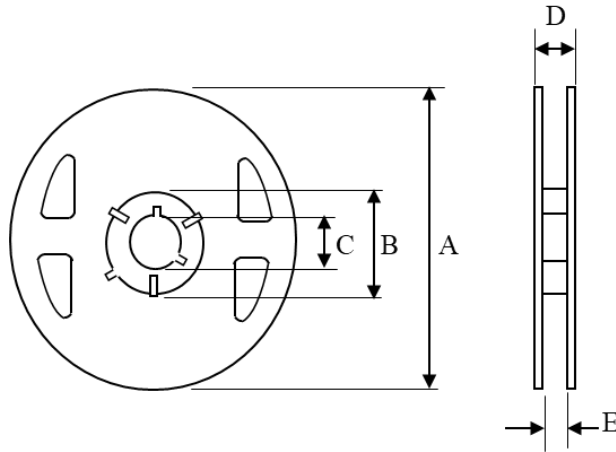


Inductance vs. Frequency



Q vs. Frequency

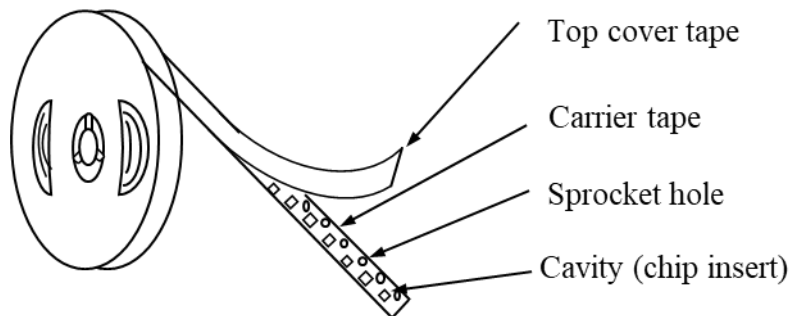
1. Reel and Carrier Tape



Symbol	T reel
A	180
B	60
C	13
D	14.4
E	8.4

NOTE : Unit mm

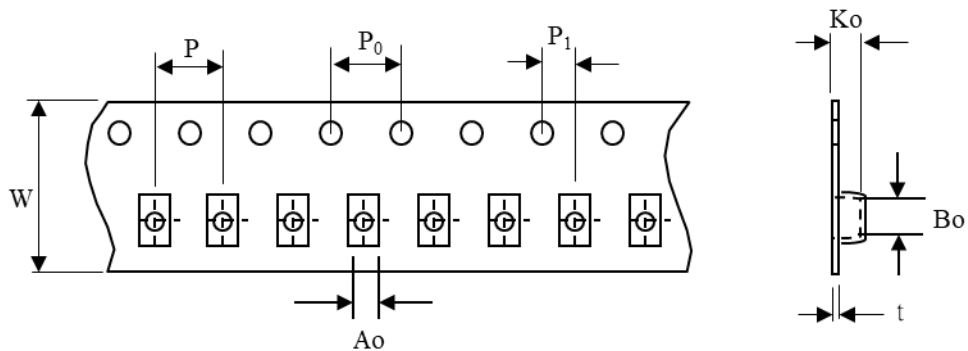
2. Tapping figure



3. Packaging Quantity

Size	T(ø180mm) reel
181210(0603)	4000 pcs /reel
241614(0805)	2000 pcs /reel
292520(1008)	2000 pcs /reel
352115(1206)	2000 pcs /reel

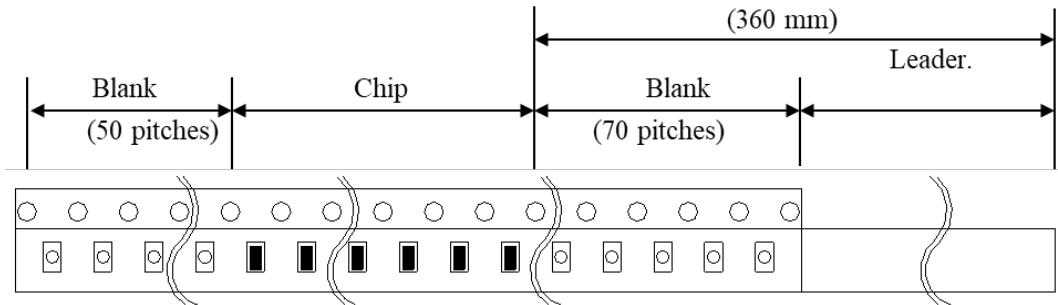
4. Carrier Tape Dimension



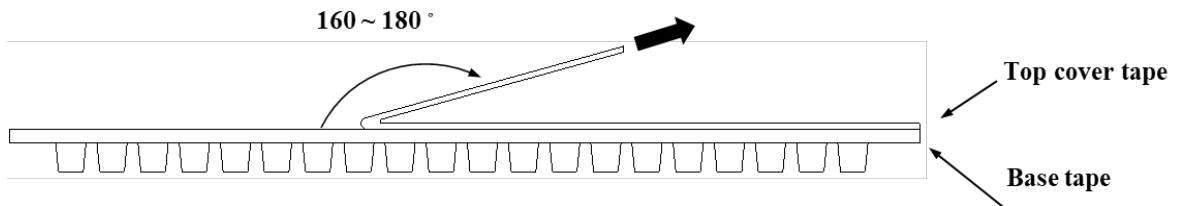
Symbol	W	P	P0	P1	Ao	Bo	Ko	t
181210(0603)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	1.20 ±0.1	1.90 ±0.1	1.00 ±0.1	0.22 ±0.1
241614(0805)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	1.57 ±0.1	2.28 ±0.1	1.40 ±0.1	0.22 ±0.1
292520(1008)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	2.50 ±0.1	2.85 ±0.1	2.00 ±0.1	0.22 ±0.1
352115(1206)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	2.14 ±0.05	3.56 ±0.05	1.5 ±0.05	0.22 ±0.05

NOTE : Unit mm

5. Packaging Form



6. Cover Tape Peel Strength

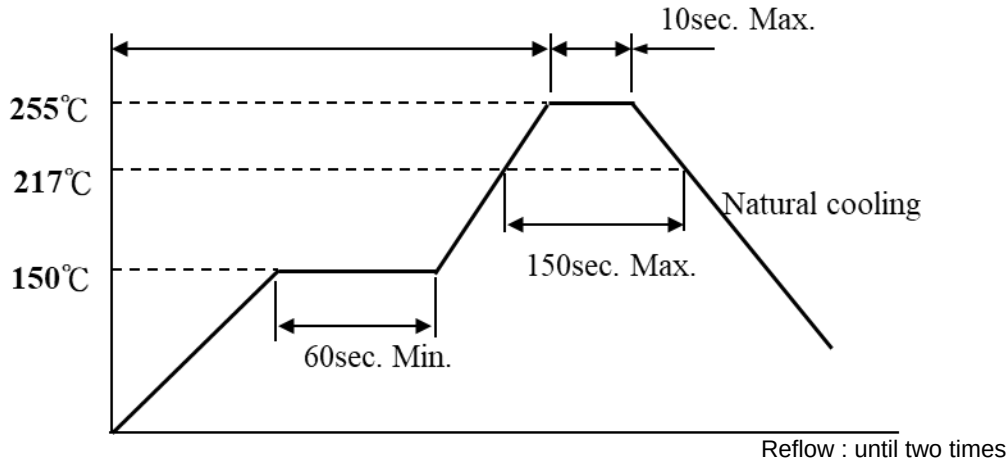


The force for tearing off cover tape is 0.1~0.6(N) in the arrow direction at the following conditions:

1. Temperature : 5 ~ 35°C
2. Humidity : 45 ~ 85%
3. Atmospheric pressure : 860 ~ 1060 hpa

Recommended Soldering Condition

1. Reflow Soldering Conditions



2. Reworking with Soldering Iron

Use a solder iron of less than 30W when soldering, do not allow the soldering iron tip directly touch the Ceramic body outside of terminal electrode. 5 seconds max. at 260°C.

Tip temperature	260°C max
Soldering time	5 seconds max.
Soldering iron output	30w max.

3. Attention in Case of Using

In case of using product, please avoid following matters:

- Splashing water or salt water
- Dew condenses
- Toxic gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
- Vibrations or shocks which exceed the specified condition
- Please be careful for the stress to this product by board flexure or something after the mounting.

4. Others

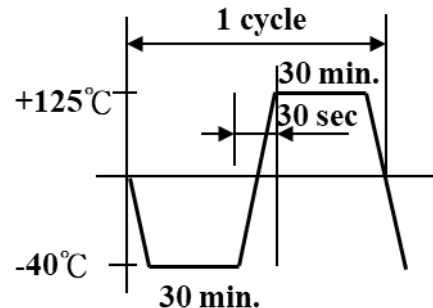
- Operating temperature range : Ceramic Series :-40~+125°C
- Storage condition : Temperature 20~25°C, Relative Humidity 40%~60%
- Recommended wire wound inductors should be used within 6 months from the time of delivery.

Reliability and Test Condition

Item	Specifications	Test conditions
Solderability	The metalized area must have 90% minimum solder coverage.	Dip pads in flux and dip in solder pot(96.5 Sn/3.5 Ag solder) at 255°C ±5°C.
Resistance to soldering heat	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be reflowed onto a PC board using 96.5 Sn/3.5 Ag solder paste. Solder process shall be at a maximum temperature of 260°C. For 96.5 Sn/3.5 Ag solder paste:>217°C for 90 seconds
Vibration	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Solder specimen inductor on the test printed circuit board. Apply vibrations in each of the x,y and z directions for 2 hours for a total of 6 hours. Frequency : 10~50 Hz Amplitude : 1.5mm
High temperature resistance	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature 125 ±2°C for 500±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Component adhesion (push test)	Inductors shall be subjected to 0.9Kg	Inductors shall be reflow soldered (255°C ±5°C for 10 seconds) to a tinned copper substrate. A force gauge shall be applied to the side of the component. The device must withstand the stated force without a failure of the termination.

Reliability and Test Condition



Item	Specifications	Test conditions
Static Humidity	Inductors must not have a shorted or Open winding.	Inductors shall be subjected to temperature $85 \pm 2^{\circ}\text{C}$ and 90 to 95%RH. for ten 24 hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Low temperature resistance	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature $-40 \pm 2^{\circ}\text{C}$ for 500 ± 12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 1 to 2 hours.
Resistance to solvent	There must be no case deformation, change in dimensions, or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.
Thermal shock	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to 10 cycles to the following temperature cycle:  Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.