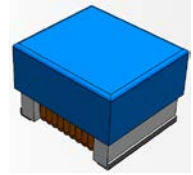


CM292520A Series



1. Features of CM292520A Series :

- 1008 Foot print, 2.03mm height for Signal Line application.
- Inductance range from 4.7nH to 10,000.0nH.
- 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

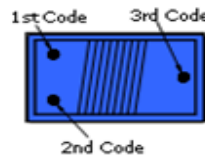
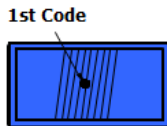
3. Product Identification:

CM 292520 A - 47N J HF

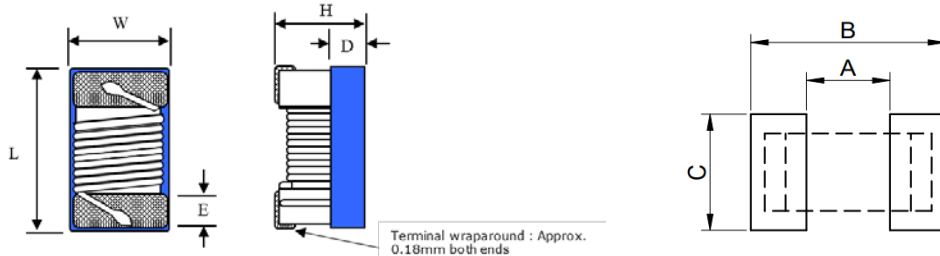
① ② ③ ④ ⑤ ⑥

- 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.

CM292520A Series



1. CM292520A Series Electrical Characteristics:

ITG Part Number	Inductance (nH)/MHz	TOL.	Q/MHz Min.	SRF (MHz) Min.	DCR (Ω) Max.	I _{rms} (mA) Max.	Color Coding		
							1st	2nd	3rd
CM292520A-4N7□HF	4.7/50	J,K	28/500	7500	0.15	600	Yellow	Violet	Black
CM292520A-10N□HF	10/50	G,J,K	50/500	4100	0.08	1000	Brown	Black	Black
CM292520A-12N□HF	12/50	G,J,K	50/500	3300	0.09	1000	Brown	Red	Black
CM292520A-15N□HF	15/50	G,J,K	45/500	2500	0.10	1000	Brown	Green	Black
CM292520A-18N□HF	18/50	G,J,K	50/350	2500	0.11	1000	Brown	Gray	Black
CM292520A-22N□HF	22/50	G,J,K	55/350	2400	0.12	1000	Red	Red	Black
CM292520A-27N□HF	27/50	G,J,K	55/350	1600	0.13	1000	Red	Violet	Black
CM292520A-33N□HF	33/50	G,J,K	60/350	1600	0.14	1000	Orange	Orange	Black
CM292520A-39N□HF	39/50	G,J,K	60/350	1500	0.15	1000	Orange	White	Black
CM292520A-47N□HF	47/50	G,J,K	65/350	1500	0.16	1000	Yellow	Violet	Black
CM292520A-56N□HF	56/50	G,J,K	65/350	1300	0.18	1000	Green	Blue	Black
CM292520A-68N□HF	68/50	G,J,K	65/350	1300	0.20	1000	Blue	Gray	Black
CM292520A-82N□HF	82/50	G,J,K	60/350	1000	0.22	1000	Gray	Red	Black
CM292520A-R10□HF	100/25	G,J,K	60/350	1000	0.56	650	Brown	Black	Brown
CM292520A-R12□HF	120/25	G,J,K	60/350	950	0.63	650	Brown	Red	Brown
CM292520A-R15□HF	150/25	G,J,K	45/100	850	0.70	580	Brown	Green	Brown
CM292520A-R18□HF	180/25	G,J,K	45/100	750	0.77	620	Brown	Gray	Brown
CM292520A-R22□HF	220/25	G,J,K	45/100	700	0.84	500	Red	Red	Brown
CM292520A-R27□HF	270/25	G,J,K	45/100	600	0.91	500	Red	Violet	Brown
CM292520A-R33□HF	330/25	G,J,K	45/100	570	1.05	450	Orange	Orange	Brown
CM292520A-R39□HF	390/25	G,J,K	45/100	500	1.12	470	Orange	White	Brown
CM292520A-R47□HF	470/25	G,J,K	45/100	450	1.19	470	Yellow	Violet	Brown
CM292520A-R56□HF	560/25	G,J,K	45/100	415	1.33	400	Green	Blue	Brown
CM292520A-R62□HF	620/25	G,J,K	45/100	375	1.40	300	Blue	Red	Brown
CM292520A-R68□HF	680/25	G,J,K	45/100	375	1.47	400	Blue	Gray	Brown
CM292520A-R75□HF	750/25	G,J,K	45/100	360	1.54	360	Violet	Green	Brown
CM292520A-R82□HF	820/25	G,J,K	45/100	350	1.61	400	Gray	Red	Brown
CM292520A-R91□HF	910/25	G,J,K	35/50	320	1.68	380	White	Brown	Brown

CM292520A Series



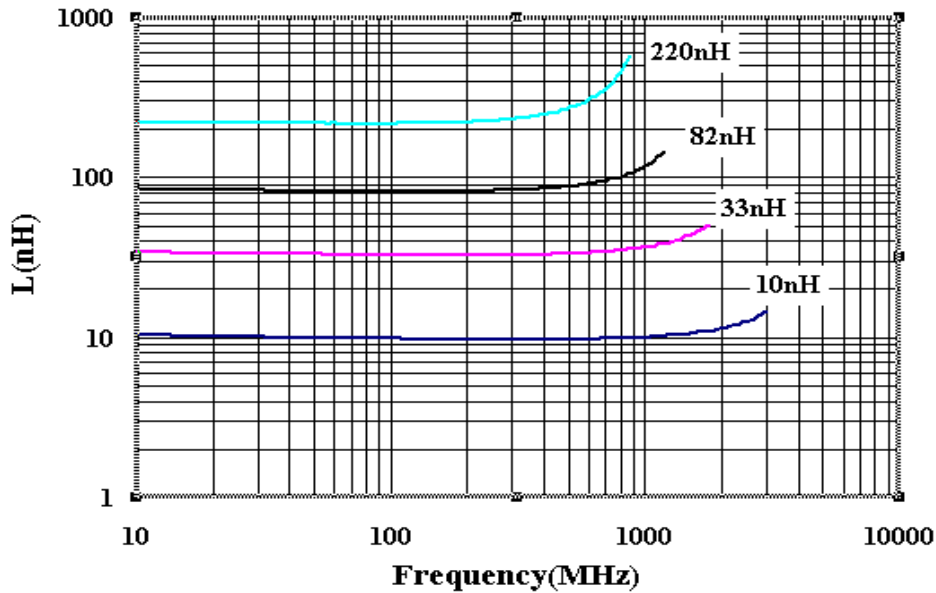
1. CM292520A Series Electrical Characteristics:

ITG Part Number	Inductance (nH)/MHz	TOL.	Q/MHz Min.	SRF (MHz) Min.	DCR (Ω) Max.	I _{rms} (mA) Max.	Color Coding		
							1st	2nd	3rd
CM292520A-1R0□HF	1,000/25	G,J,K	35/50	290	1.75	370	Brown	Black	Red
CM292520A-1R2□HF	1,200/7.9	G,J,K	35/50	250	2.00	310	Brown	Red	Red
CM292520A-1R5□HF	1,500/7.9	G,J,K	28/50	200	2.30	330	Brown	Green	Red
CM292520A-1R8□HF	1,800/7.9	G,J,K	28/50	160	2.60	300	Brown	Gray	Red
CM292520A-2R2□HF	2,200/7.9	G,J,K	28/50	160	2.80	280	Red	Red	Red
CM292520A-2R7□HF	2,700/7.9	G,J,K	22/25	135	3.20	290	Red	Violet	Red
CM292520A-3R3□HF	3,300/7.9	G,J,K	22/25	110	3.40	290	Orange	Orange	Red
CM292520A-3R9□HF	3,900/7.9	G,J,K	20/25	100	3.60	260	Orange	White	Red
CM292520A-4R7□HF	4,700/7.9	G,J,K	20/25	90	4.00	260	Yellow	Violet	Red
CM292520A-5R6□HF	5,600/7.9	G,J,K	18/7.9	40	4.20	240	Green	Blue	Red
CM292520A-6R8□HF	6,800/7.9	G,J,K	18/7.9	40	4.90	200	Blue	Gray	Red
CM292520A-8R2□HF	8,200/7.9	G,J,K	18/7.9	25	6.00	170	Gray	Red	Red
CM292520A-100□HF	10,000/2.5	G,J,K	18/7.9	25	8.00	150	Brown	Black	Orange

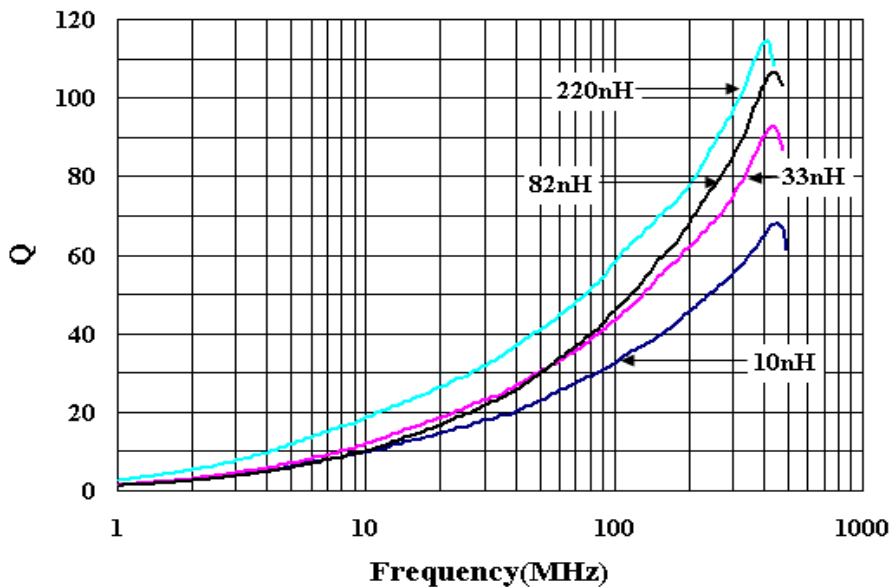
Noted:

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. I_{rms} for a 15°C rise above 25°C ambient.
4. Operating temperature range from -40°C to 125°C.

2. CM292520A Series Inductance and Q vs. Frequency characteristics:

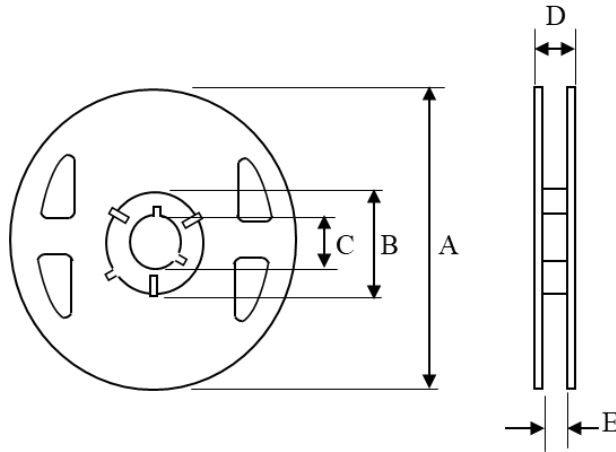


Inductance vs. Frequency



Q vs. Frequency

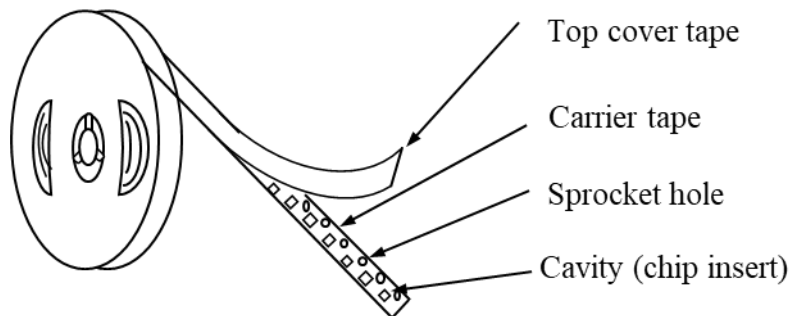
1. Reel and Carrier Tape



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

NOTE : Unit mm

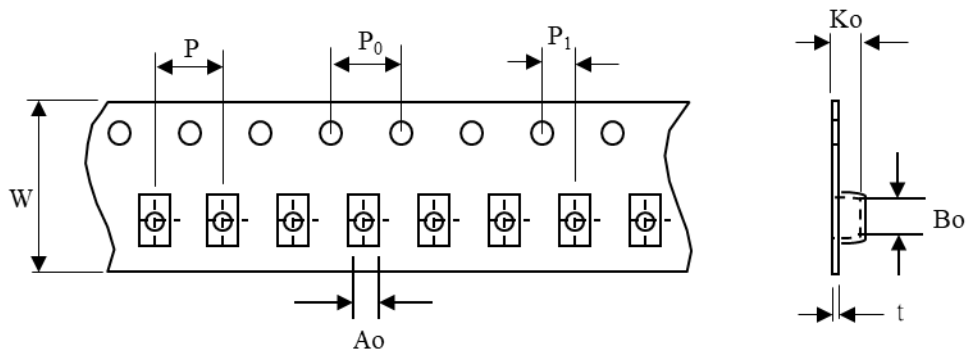
2. Tapping figure



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

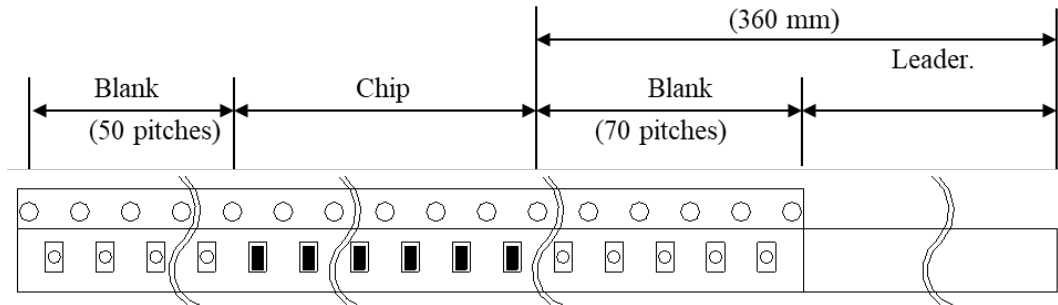
4. Carrier Tape Dimension



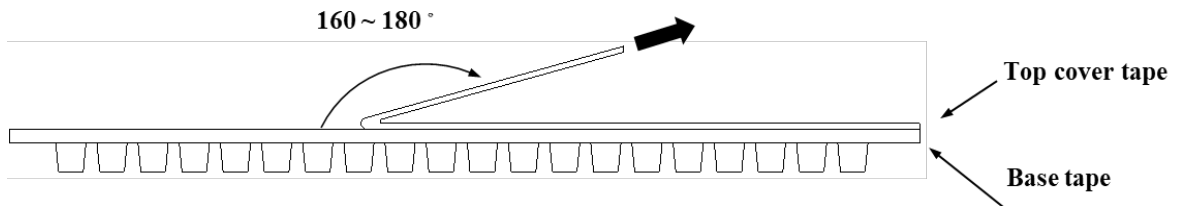
Symbol	W	P	P0	P1	Ao	Bo	Ko	t
181210(0603)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	1.20 ±0.1	1.90 ±0.1	1.00 ±0.1	0.22 ±0.1
241614(0805)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	1.57 ±0.1	2.28 ±0.1	1.40 ±0.1	0.22 ±0.1
292520(1008)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	2.50 ±0.1	2.85 ±0.1	2.00 ±0.1	0.22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

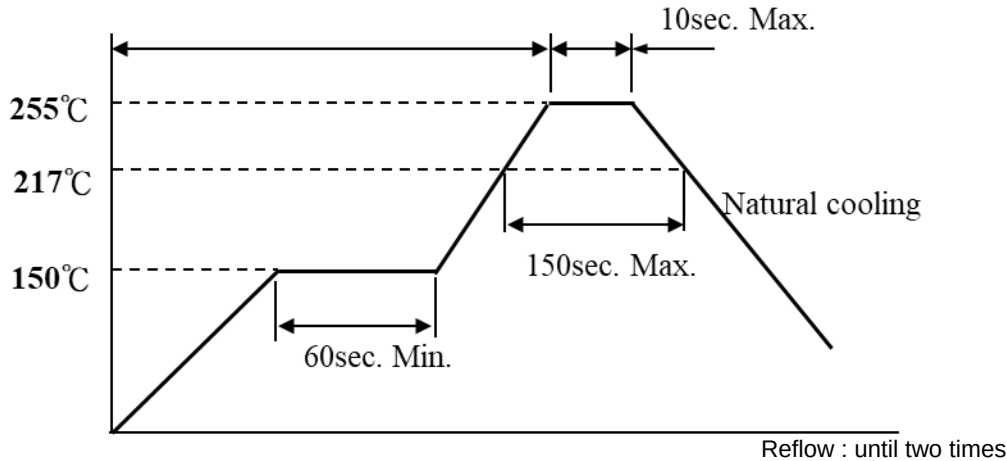


The force for tearing off cover tape is 0.1~0.6(N) in the arrow direction at the following conditions:

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

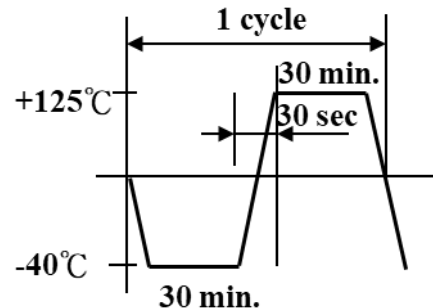
- Operating temperature range : Ceramic Series :-40~+125°C
- Storage condition : Temperature 20~25°C , Relative Humidity 40%~60%
- Recommended wire wound inductors should be used within 6 months from the time of delivery.

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.