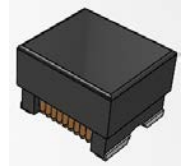


FM292520A Series



1. Features of FM292520A Series :

- 1008 Foot print, 2.03mm height for Signal Line application.
- Inductance range from 0.1uH to 100.0uH.
- Utilizing a miniaturized winding structure.
- Resin-coated surface enables excellent mounting
- RoHS, Halogen Free and Reach Compliant
- Operating Temperature Range -40°C to + 105°C.



2. Applications:

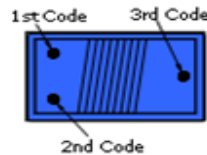
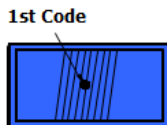
- Personal computers, Hard disk drives
- xDSL modem and Cable modem
- Digital camera and other electronic equipment

3. Product Identification:

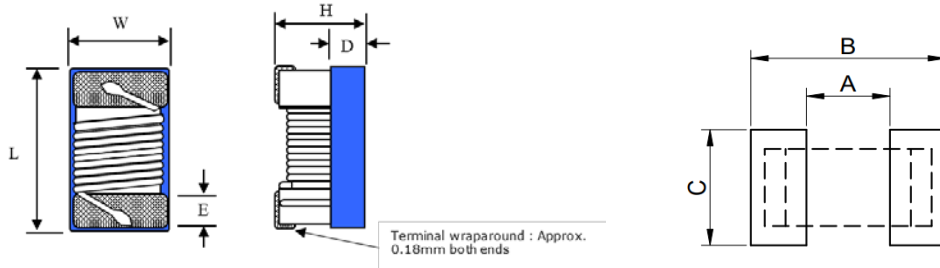
FM 292520 A - 47N J HF
 ① ② ③ ④ ⑤ ⑥

- 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
241613(0805)	2.40 Max.	1.65 Max.	1.30 Max.	0.65 ref.	0.44 ref.	0.76	2.80	1.78
292520(1008)	2.90 Max.	2.54 Max.	2.03 Max.	1.30 ref.	0.50 ref.	1.27	3.31	2.54
362925(1210)	3.60 Max.	2.90 Max.	2.50 Max.	1.10 ref.	0.50 ref.	2.00	4.40	2.70

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. 3, 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.

FM292520A Series



1. FM292520A Series Electrical Characteristics:

ITG Part Number	Inductance (uH)/MHz	TOL.	Q/MHz Min.	SRF (MHz) Min.	DCR (Ω) Max.	Isat (mA)	Color Coding		
FM292520A-R10□HF	0.10/25	K	25/25	930	0.20	1300	Brown	Black	Brown
FM292520A-R12□HF	0.12/25	J,K	26/25	930	0.30	1000	Brown	Red	Brown
FM292520A-R15□HF	0.15/25	J,K	26/25	930	0.30	1000	Brown	Green	Brown
FM292520A-R18□HF	0.18/25	J,K	30/25	930	0.30	960	Brown	Gray	Brown
FM292520A-R20□HF	0.20/25	J,K	30/25	735	0.30	960	Red	Black	Brown
FM292520A-R22□HF	0.22/25	J,K	27/25	750	0.40	880	Red	Red	Brown
FM292520A-R27□HF	0.27/25	J,K	29/25	700	0.42	900	Red	Violet	Brown
FM292520A-R33□HF	0.33/25	J,K	30/25	600	0.42	900	Orange	Orange	Brown
FM292520A-R39□HF	0.39/25	J,K	30/25	480	0.45	920	Orange	White	Brown
FM292520A-R47□HF	0.47/25	J,K	30/25	470	0.50	920	Yellow	Violet	Brown
FM292520A-R56□HF	0.56/25	J,K	30/25	460	0.55	900	Green	Blue	Brown
FM292520A-R62□HF	0.62/25	J,K	30/25	460	0.55	900	Blue	Red	Brown
FM292520A-R68□HF	0.68/25	J,K	30/25	420	0.55	880	Blue	Gray	Brown
FM292520A-R75□HF	0.75/25	J,K	30/25	420	0.65	880	Violet	Green	Brown
FM292520A-R82□HF	0.82/25	J,K	30/25	380	0.65	840	Gray	Red	Brown
FM292520A-R91□HF	0.91/25	J,K	30/25	400	0.65	840	White	Brown	Brown
FM292520A-1R0□HF	1.0/7.9	J,K	25/7.9	300	0.60	800	Brown	Black	Red
FM292520A-1R2□HF	1.2/7.9	J,K	25/7.9	280	0.74	800	Brown	Red	Red
FM292520A-1R5□HF	1.5/7.9	J,K	25/7.9	245	0.85	780	Brown	Green	Red
FM292520A-1R8□HF	1.8/7.9	J,K	25/7.9	240	0.92	780	Brown	Gray	Red
FM292520A-2R2□HF	2.2/7.9	J,K	25/7.9	205	1.10	760	Red	Red	Red
FM292520A-2R7□HF	2.7/7.9	J,K	25/7.9	187	1.22	760	Red	Violet	Red
FM292520A-3R3□HF	3.3/7.9	J,K	25/7.9	165	1.37	740	Orange	Orange	Red
FM292520A-3R9□HF	3.9/7.9	J,K	25/7.9	144	1.66	700	Orange	White	Red
FM292520A-4R7□HF	4.7/7.9	J,K	25/7.9	110	1.68	660	Yellow	Violet	Red
FM292520A-5R6□HF	5.6/7.9	J,K	25/7.9	88	1.75	640	Green	Blue	Red
FM292520A-6R8□HF	6.8/7.9	J,K	25/7.9	70	1.85	640	Blue	Gray	Red

FM292520A Series



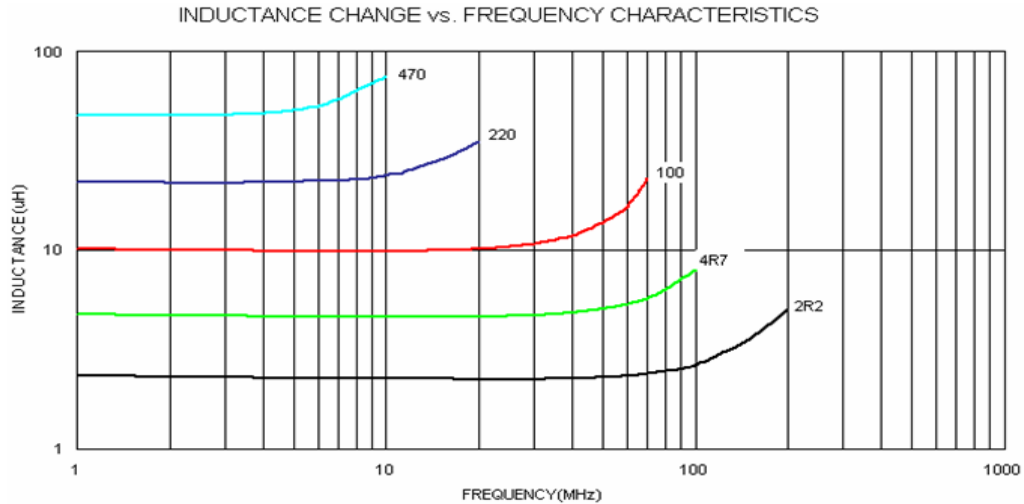
1. FM292520A Series Electrical Characteristics:

ITG Part Number	Inductance (uH)/MHz	TOL.	Q/MHz Min.	SRF (MHz) Min.	DCR (Ω) Max.	Isat (mA)	Color Coding		
FM292520A-8R2□HF	8.2/7.9	K	25/7.9	57	2.00	600	Gray	Red	Red
FM292520A-100□HF	10/7.9	J,K	25/7.9	55	2.32	600	Brown	Black	Orange
FM292520A-120□HF	12/2.5	J,K	15/2.5	52	2.99	560	Brown	Red	Orange
FM292520A-150□HF	15/2.5	J,K	15/2.5	49	3.42	480	Brown	Green	Orange
FM292520A-180□HF	18/2.5	J,K	15/2.5	48	4.65	420	Brown	Gray	Orange
FM292520A-220□HF	22/2.5	J,K	15/2.5	25	5.12	420	Red	Red	Orange
FM292520A-270□HF	27/2.5	J,K	15/2.5	23	5.76	420	Red	Violet	Orange
FM292520A-330□HF	33/2.5	J,K	15/2.5	17	6.44	400	Orange	Orange	Orange
FM292520A-390□HF	39/2.5	J,K	15/2.5	15	6.85	380	Orange	White	Orange
FM292520A-470□HF	47/2.5	J,K	14/2.5	13	9.94	260	Yellow	Violet	Orange
FM292520A-560□HF	56/2.5	J,K	14/2.5	10	10.70	280	Green	Blue	Orange
FM292520A-680□HF	68/2.5	J,K	14/2.5	8	12.80	260	Blue	Gray	Orange
FM292520A-820□HF	82/2.5	J,K	14/2.5	8	18.30	240	Gray	Red	Orange
FM292520A-101□HF	100/1.0	J,K	8/1.0	7	19.60	200	Brown	Black	Yellow

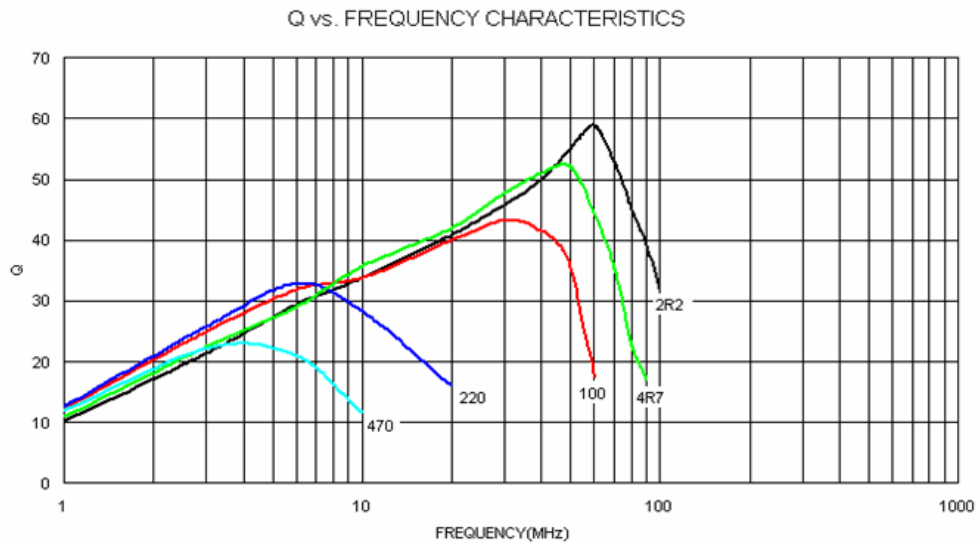
Noted:

1. L , Q、SRF : Agilent/HP E4991A+ Agilent/HP16197A
(The electrical specification test by the smallest gap position) or HP16193A
2. DCR : DIGITAL MILLIOHM METER Chroma 16502, or equivalent.
3. Isat for Inductance drop 10% from its value without current.
4. Operating temperature range from -40°C to 105°C.

2. FM292520A Series Inductance and Q vs. Frequency characteristics:

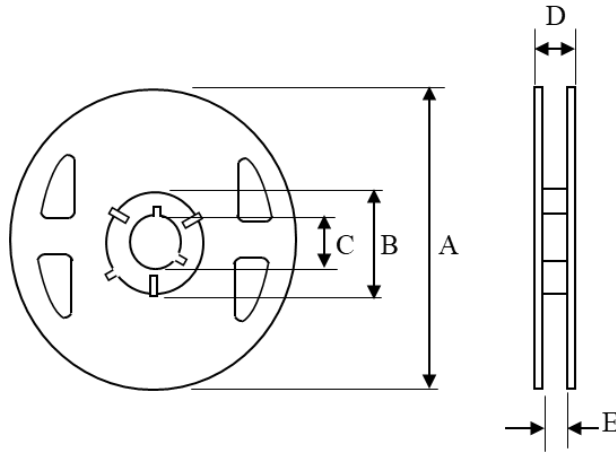


Inductance vs. Frequency



Q vs. Frequency

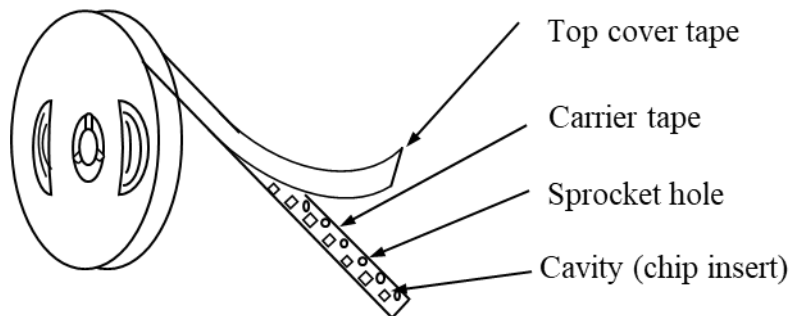
1. Reel and Carrier Tape



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

NOTE : Unit mm

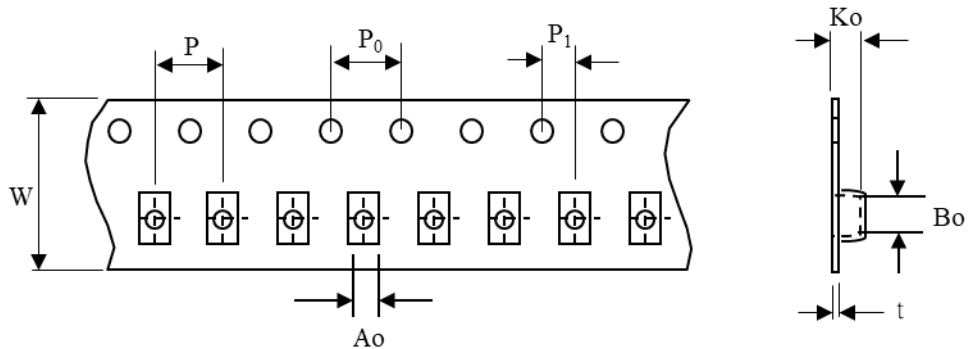
2. Tapping figure



3. Packaging Quantity

Size	T(ø180mm) reel
241613(0805)	2000 pcs /reel
292520(1008)	2000 pcs /reel
352115(1206)	2000 pcs /reel

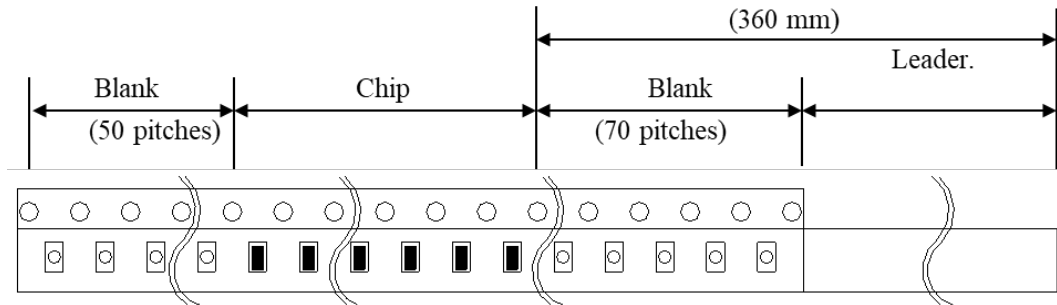
4. Carrier Tape Dimension



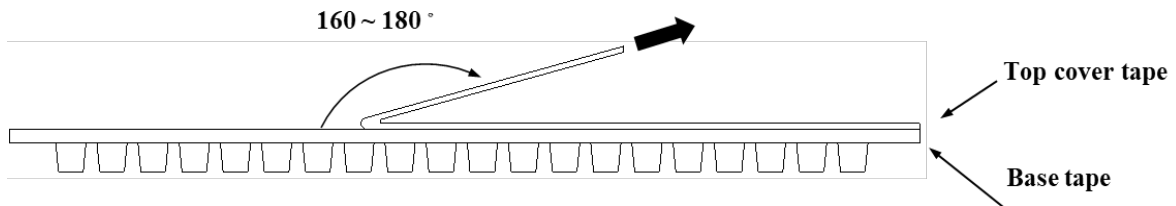
Symbol	W	P	P0	P1	Ao	Bo	Ko	t
241613(0805)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	1.65 ±0.1	2.4 ±0.1	1.3 ±0.1	0.22 ±0.1
292520(1008)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	2.50 ±0.1	2.85 ±0.1	2.00 ±0.1	0.22 ±0.1
362925(1210)	8.00 ±0.1	4.00 ±0.1	4.00 ±0.1	2.00 ±0.1	2.88 ±0.1	3.72 ±0.1	2.5 ±0.1	0.26 ±0.1

NOTE : Unit mm

5. Packaging Form



6. Cover Tape Peel Strength

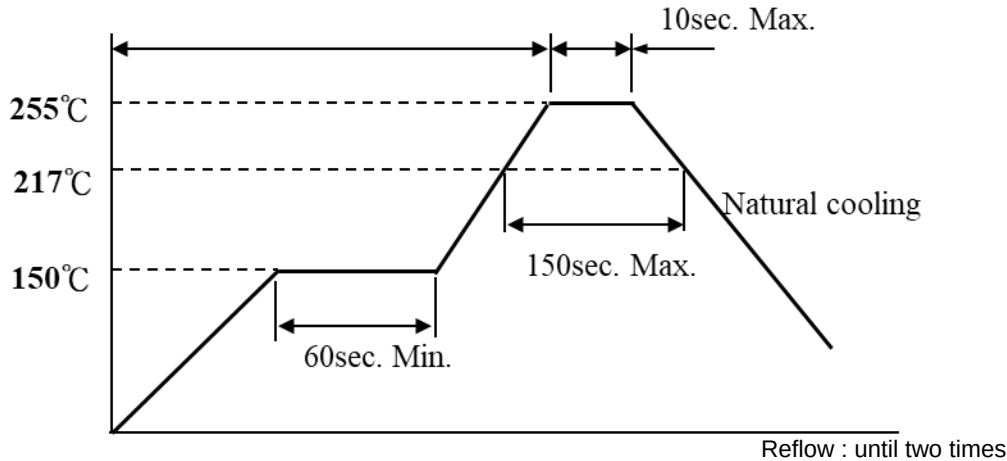


The force for tearing off cover tape is 0.1~0.6(N) in the arrow direction at the following conditions:

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 : To refer series datasheet.
- 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.

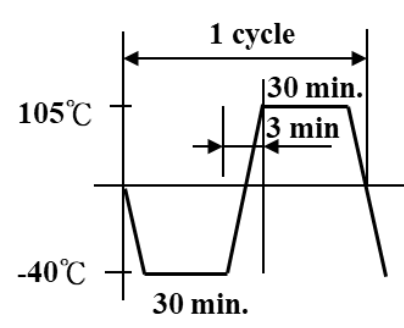
Reliability and Test Condition



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 105±2°C for 500±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Static Humidity	Inductors must not have a shorted or open winding.	Inductors shall be subjected to temperature 85±2°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.

Reliability and Test Condition



Item	Specifications	Test conditions
Component adhesion (push test)	Inductors shall be subjected to 1.8Kg	Inductors shall be reflow soldered ($255^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 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.
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.