⊕ Feature

•Ferrite body and wire wound construction provide high SRFs.
•Exceptional Q values even at high frequencies.

⊕ Applications

•RF products for cellular phone.
•GPS receiver.
•Wireless LAN/ mouse/ keyboard/ earphone.

⊕ Product Identification：

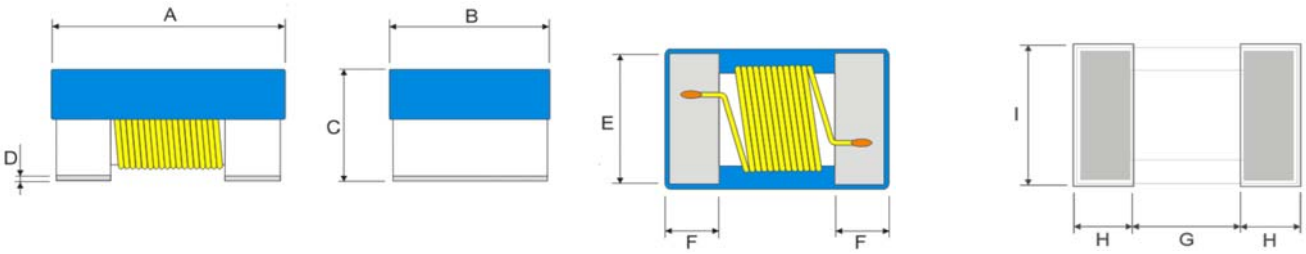
□□□ □□□□ □□ - □□□ □

1 2 3 4 5

Series name	Dimensions(LxWxH)		Internal code
WCF	0402	1.19*0.66*0.64mm	S = Standard
	0805	2.29*1.73*1.52mm	
	1210	3.5*2.9*2.25mm	

Inductance		Tolerance	
10N	10 nH	G	2%
R10	100 nH	J	5%
1R0	1000 nH	K	10%

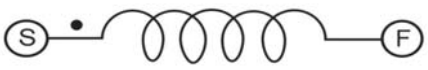
⊕ Shapes And Dimensions



⊕Recommended PCB Pattern

Part No.	Dimensions(mm)									
	A	B	C	D	E	F	G	H	I	
WCF0402(1005)	1.19 Max	0.70 Max	0.64 Max	0.20 Typ	0.50 ±0.05	0.20 ±0.05	0.50 Ref	0.35 Ref	0.66 Ref	
WCF0603(1608)	1.80 Max	1.25 Max	1.20 Max	0.20 Typ	0.75 ±0.05	0.32 ±0.05	0.64 Ref	0.64 Ref	1.02 Ref	
WCF0805(2012)	2.29 Max	1.73 Max	1.52 Max	0.20 Typ	1.25 ±0.05	0.44 ±0.05	0.76 Ref	1.02 Ref	1.78 Ref	
WCF1008(2520)	2.92 Max	2.80 Max	2.23 Max	0.20 Typ	2.00 ±0.05	0.50 ±0.05	1.27 Ref	1.02 Ref	2.54 Ref	
WCF1210(3225)	3.50 Max	2.90 Max	2.25 Max	0.20 Typ	1.55 ±0.05	0.50 ±0.05	1.78 Ref	1.02 Ref	2.54 Ref	

⊕ Equivalent Circuit Schematic：



⊕ Material List：

No.	Location	Material
1	Core	Ferrite Core
2	Wire	Grade1 P180
3	Solder	Sn99.3 Cu0.7
4	Epoxy	Ultraviolet epoxy resin

1.Operating temperature -40℃ ~ +125℃
2.Storage conditions -40℃ ~ +125℃

⊕ Electrical Characteristics :

Part No.	Inductance (nH)	DCR (Ω) Max	Irms (mA) Max	SRF (MHz) Min	Q Min	Test Frequuency (MHz)
WCF0402S-20NM	20 ±20%	0.050	1600	2600	8	7.9
WCF0402S-22NM	22 ±20%	0.065	1300	2500	8	7.9
WCF0402S-33NM	33 ±20%	0.060	1400	2300	8	7.9
WCF0402S-36NM	36 ±20%	0.075	1300	2300	8	7.9
WCF0402S-39NM	39 ±20%	0.115	830	2200	8	7.9
WCF0402S-51NM	51 ±20%	0.070	1100	1930	8	7.9
WCF0402S-56NM	56 ±20%	0.095	1000	1900	8	7.9
WCF0402S-72NM	72 ±20%	0.100	1000	1650	8	7.9
WCF0402S-78NM	78 ±20%	0.130	970	1600	8	7.9
WCF0402S-R10K	100 ±10%	0.160	900	1400	8	7.9
WCF0402S-R14K	140 ±10%	0.260	630	1220	8	7.9
WCF0402S-R18K	180 ±10%	0.280	560	1150	8	7.9
WCF0402S-R20K	200 ±10%	0.440	400	1000	8	7.9
WCF0402S-R22K	220 ±10%	0.530	380	1150	8	7.9
WCF0402S-R25K	250 ±10%	0.360	520	900	8	7.9
WCF0402S-R27K	270 ±10%	0.900	360	860	8	7.9
WCF0402S-R30K	300 ±10%	0.410	420	860	8	7.9
WCF0402S-R33K	330 ±10%	0.560	350	820	8	7.9
WCF0402S-R36K	360 ±10%	0.575	300	810	8	7.9
WCF0402S-R39K	390 ±10%	1.000	300	760	8	7.9
WCF0402S-R42K	420 ±10%	0.700	340	700	8	7.9
WCF0402S-R47K	470 ±10%	0.730	310	650	8	7.9
WCF0402S-R56K	560 ±10%	1.200	200	600	8	7.9
WCF0402S-R82K	820 ±10%	5.850	90	385	8	7.9

⊕ Electrical Characteristics :

Part No.	Inductance (uH)	DCR (Ω) Max	Irms (mA) Max	SRF (MHz) Min	Q Min	Test Frequuency (MHz)
WCF0603S-R10K	0.1 ±10%	0.13	1000	1150	12	7.9
WCF0603S-R18K	0.18 ±10%	0.20	1000	950	12	7.9
WCF0603S-R22K	0.22 ±10%	0.30	700	775	12	7.9
WCF0603S-R27K	0.27 ±10%	0.30	700	775	12	7.9
WCF0603S-R33K	0.33 ±10%	0.32	600	725	12	7.9
WCF0603S-R39K	0.39 ±10%	0.51	500	620	12	7.9
WCF0603S-R47K	0.47 ±10%	0.62	420	540	12	7.9
WCF0603S-R51K	0.51 ±10%	0.65	400	600	12	7.9
WCF0603S-R56K	0.56 ±10%	0.65	400	600	12	7.9
WCF0603S-R68K	0.68 ±10%	1.00	380	500	12	7.9
WCF0603S-R75K	0.75 ±10%	1.30	350	500	12	7.9
WCF0603S-R82K	0.82 ±10%	1.30	350	500	12	7.9
WCF0603S-1R0K	1 ±10%	1.50	330	400	12	7.9
WCF0603S-1R2K	1.2 ±10%	1.70	320	380	12	7.9
WCF0603S-1R5K	1.5 ±10%	1.90	310	300	12	7.9
WCF0603S-1R8K	1.8 ±10%	2.20	300	180	12	7.9
WCF0603S-2R0K	2 ±10%	2.30	280	180	12	7.9
WCF0603S-2R2K	2.2 ±10%	2.30	280	180	12	7.9

⊕ Electrical Characteristics :

Part No.	Inductance (uH)	DCR (Ω) Max	Irms (mA) Max	SRF (MHz) Min	Q Min	Test Frequuency (MHz)
WCF0603S-2R7K	2.7 ±10%	2.60	250	150	12	7.9
WCF0603S-3R3K	3.3 ±10%	2.90	230	150	12	7.9
WCF0603S-3R9K	3.9 ±10%	3.20	210	120	12	7.9
WCF0603S-4R7K	4.7 ±10%	4.00	200	100	12	7.9
WCF0603S-5R1K	5.1 ±10%	2.60	240	32	15	7.9
WCF0603S-5R6K	5.6 ±10%	2.60	240	32	15	7.9
WCF0603S-6R8K	6.8 ±10%	3.90	200	31	12	7.9
WCF0603S-8R2K	8.2 ±10%	4.20	190	26	12	7.9
WCF0603S-100K	10 ±10%	4.80	180	25	10	7.9
WCF0603S-150K	15 ±10%	8.50	170	23	10	7.9
WCF0603S-180K	18 ±10%	10.00	160	22	10	7.9
WCF0603S-220K	22 ±10%	12.00	100	10	10	7.9

⊕ Electrical Characteristics :

Part No.	Inductance (uH)	DCR (Ω) Max	Irms (mA) Max	SRF (MHz) Min	Q Min	Test Frequuency (MHz)
WCF0805S-R47K	0.47 ±10%	0.31	720	500	12	7.9
WCF0805S-1R0K	1 ±10%	1.00	430	360	12	7.9
WCF0805S-1R2K	1.2 ±10%	1.15	410	350	12	7.9
WCF0805S-1R5K	1.5 ±10%	3.30	150	160	12	25
WCF0805S-2R2K	2.2 ±10%	1.50	350	170	12	7.9
WCF0805S-3R3K	3.3 ±10%	1.80	300	90	12	7.9
WCF0805S-4R7K	4.7 ±10%	2.05	250	85	12	7.9
WCF0805S-6R8K	6.8 ±10%	2.60	220	55	12	7.9
WCF0805S-8R2K	8.2 ±10%	3.00	180	50	12	7.9
WCF0805S-100K	10 ±10%	3.20	150	30	10	2.5
WCF0805S-150K	15 ±10%	4.20	100	16	10	2.5
WCF0805S-220K	22 ±10%	6.00	80	14	10	2.5
WCF0805S-330K	33 ±10%	10.70	60	17	10	2.5
WCF0805S-680K	68 ±10%	17.50	40	11	8	2.5

⊕ Electrical Characteristics :

Part No.	Inductance (uH)	DCR (Ω) Max	Irms (mA) Max	SRF (MHz) Min	Q Min	Test Frequuency (MHz)
WCF1008S-R56K	0.56 ±10%	0.62	700	230	12	7.9
WCF1008S-R68K	0.68 ±10%	0.62	700	230	12	7.9
WCF1008S-R82K	0.82 ±10%	0.62	700	230	12	7.9
WCF1008S-1R0K	1 ±10%	0.62	700	230	18	7.9
WCF1008S-1R2K	1.2 ±10%	0.68	650	210	18	7.9
WCF1008S-1R5K	1.5 ±10%	0.76	630	190	18	7.9
WCF1008S-1R8K	1.8 ±10%	0.84	600	170	18	7.9
WCF1008S-2R2K	2.2 ±10%	1.10	520	150	18	7.9
WCF1008S-2R7K	2.7 ±10%	1.28	490	135	18	7.9
WCF1008S-3R3K	3.3 ±10%	1.46	450	120	18	7.9
WCF1008S-3R9K	3.9 ±10%	1.56	420	105	18	7.9
WCF1008S-4R7K	4.7 ±10%	2.00	400	90	18	7.9
WCF1008S-5R6K	5.6 ±10%	1.80	380	80	15	7.9

⊕ Electrical Characteristics：

Part No.	Inductance (uH)	DCR (Ω) Max	Irms (mA) Max	SRF (MHz) Min	Q Min	Test Frequuency (MHz)
WCF1008S-6R8K	6.8 ±10%	2.00	360	70	15	7.9
WCF1008S-8R2K	8.2 ±10%	2.65	330	65	15	7.9
WCF1008S-100K	10 ±10%	2.95	300	60	12	2.5
WCF1008S-180K	18 ±10%	4.00	160	26	12	2.5
WCF1008S-220K	22 ±10%	6.14	270	22	12	2.5
WCF1008S-24R7K	24.7 ±10%	6.10	210	12	12	2.5
WCF1008S-300K	30 ±10%	6.80	200	12	10	2.5
WCF1008S-330K	33 ±10%	7.00	200	12	10	2.5
WCF1008S-390K	39 ±10%	10.00	170	16	10	2.5
WCF1008S-470K	47 ±10%	10.70	160	10	10	2.5
WCF1008S-560K	56 ±10%	12.00	170	8	10	2.5
WCF1008S-680K	68 ±10%	13.50	145	6	10	2.5
WCF1008S-820K	82 ±10%	20.00	100	6	8	2.5

⊕ Electrical Characteristics：

Part No.	Inductance (uH)	DCR (Ω) Max	Irms (mA) Max	SRF (MHz) Min	Q Min	Test Frequuency (MHz)
WCF1210S-R56K	0.56 ±10%	0.55	450	180	20	25
WCF1210S-1R5K	1.5 ±10%	0.40	450	200	20	7.9
WCF1210S-1R8K	1.8 ±10%	0.80	450	195	20	7.9
WCF1210S-2R2K	2.2 ±10%	0.80	450	175	20	7.9
WCF1210S-4R7K	4.7 ±10%	1.30	350	60	18	7.9
WCF1210S-5R6K	5.6 ±10%	2.00	320	50	18	2.5
WCF1210S-100K	10 ±10%	1.00	300	30	15	2.5
WCF1210S-150K	15 ±10%	2.00	225	22	15	2.5
WCF1210S-180K	18 ±10%	2.05	215	22	15	2.5
WCF1210S-220K	22 ±10%	2.40	210	20	15	2.5
WCF1210S-330K	33 ±10%	2.90	160	15	15	2.5
WCF1210S-470K	47 ±10%	5.20	140	10	15	2.5
WCF1210S-560K	56 ±10%	5.60	125	8	8	2.5
WCF1210S-680K	68 ±10%	13.00	100	10	6	1
WCF1210S-820K	82 ±10%	13.00	100	10	6	1
WCF1210S-101K	100 ±10%	13.00	100	10	6	1
WCF1210S-121K	100 ±10%	13.00	100	10	6	1
WCF1210S-151K	150 ±10%	20.00	80	4	10	1
WCF1210S-181K	180 ±10%	14.50	70	3	8	1
WCF1210S-201K	200 ±10%	30.00	65	2.6	8	1
WCF1210S-221K	220 ±10%	30.00	65	2.6	8	1
WCF1210S-271K	270 ±10%	33.00	60	2.3	8	1
WCF1210S-331K	330 ±10%	35.00	55	2.3	8	1
WCF1210S-471K	470 ±10%	42.00	40	2	8	1
WCF1210S-561K	560 ±10%	60.00	10	2	8	1
WCF1210S-621K	620 ±10%	85.00	10	2	8	1
WCF1210S-681K	680 ±10%	90.00	10	2	6	1

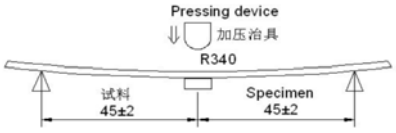
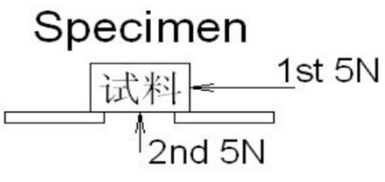
Note：Specifications which provide more details for the proper and safe use of the described product are available upon request. all specifications are subject to change without notice.

Tolerance：J±5%；K±10%；M±20%.

Irms：DC Current that will cause an approximate ΔT of 40 ℃

Test Instrument：LCR(CH1062/HP4284A)、DCR(TH2511/CH502BC)、IDC(CH1320) or equivalent.

⊕ General Characteristics

項目 Item	Conditions	Specification
温度特性 Temperature drift	在温度-40 ~ + 125℃之间测试。 To be measured in the range of -40℃ to 125℃.	Inductance temperature coefficient 2000 ppm/℃ or less
保存温度范围 Storage Temperature	在包装的状态下。 With taping.	- 40℃ ~ + 125℃
使用温度范围 Operating Temperature	包括制品的发热温度。 Including self temperature rise.	- 40℃ ~ + 125℃
弯曲测试 Bending test	试件焊接在基板上，按箭头方向以大约0.5mm/秒的速度加压，直到基板变形幅度到3mm 保持30 秒。 Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 3mm and hold for 30±5s.  基板Board: 40*100mm 厚Thickness: 1.0mm	Change from an initial value L : within±10%
固着强度 Adhesion strength	按箭头方向用R0.5 的加压棒在试件中施加一定的静力并保持60±5秒. A static load using a R0.5 pressing tool shall be applied the arrow and to the body of the specimen in the direction of the arrow and shall be hold for 60±5s. Measure after removing pressure. 	Change from an initial value L : within±10%

耐振性 Vibration	振动频率10～55～10Hz, 振幅1.5mm, 分X,Y,Z 方向各振动1 小时（共3 小时）。 The specimen shall be subjected to a vibration of 1.5mm amplitude, sweep frequency 10~55Hz (10Hz to 55Hz to 10Hz in a period of one minute) for 1 h in each of 3(X,Y,Z) axes.	Change from an initial value L : within±10%
耐冲击性 Mechanical shock	利用橡胶块式落下冲击试验机，分别在3 个互相垂直的方向以981m/S2 的冲击加速度落下。 Peak acceleration: 981 m/S2 Duration of pulse: 6ms 3 times in each of 3(X,Y,Z)axes. The specimen must be fixed on test board. Three successive shock shall be applied in the perpendicular direction of each surface of the specimen.	Change from an initial value L : within±10%
自然落下试验 Free fall test	试件安装在基板上，并固定在重500 克的盒中，由1 米高自由落体，3 个互相垂直的方向各3 次。 The specimen must be fixed on test board. It must be equipped with instruments of which weight is 500g. Then it shall be fallen freely from 1m height to rigid wood 3 times in each of three axes.	Change from an initial value L : within±10%
焊锡付着性 Solder ability	试验品的电极深布松香后， 在5 ～ 10 秒内焊锡， 焊锡槽温度245±5℃，时间：3±0.5 秒。 Terminals shall be immersed for 5 to 10 seconds in flux at room temperature. Dip sample into solder bath containing molten solder at 245±5℃ for 3±0.5 seconds.	90%以上的面积要被覆盖。 New solder shall cover 90% minimum of the surface immersed.
耐电压 Dielectric strength	在电极与磁材之间加入直流电压100V 通电时间1 分钟。 100V DC shall be applied for 60s between the terminal and the core.	没有损害。 Without damage.

焊锡耐热性 Resistance to soldering heat	试验方法Test method 热风炉焊接Reflow soldering method 预热Preheat 150~180℃ 90±30s 峰值温度Peak temp 250(+ 5,-0)℃ (230℃min , 30±10s) 试验板的厚度0.8mm 上按上面条件通过两次热风炉。 The specimen shall be subjected to the reflow process under the above condition 2 times.Test board shall be 0.8mm thick. Base material shall be glass epoxy resin. 测定Measurement 常温常湿中放置于1 小时以上测试。 The specimen shall be stored at standard atmospheric conditions for 1 h in prior to the measurement.	Change from an initial value L : within±10%
绝缘抵抗 Insulation resistance	在电极与磁材之间加入直流电压100V。 100V DC shall be applied between the terminal and the core.	100mΩ 以上 100mΩ or more.
耐寒性 Low temperature	在温度-40±3℃中放置500±12 小时后，常温常湿中放置1 小时以上2 小时以内测试。 The specimen shall be stored at a temperature of -40 ±3℃ for 500 ±12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement Measurement shall be made within 1h.	Change from an initial value L : within±10%
耐热性 Dry heat	在温度125±2℃中放置500±12 小时后，常温常湿中放置1 小时以上2 小时以内测试。 The specimen shall be stored at a temperature of 125 ± 2℃ for 500± 12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%

耐湿性 Dump heat	在温度60±2℃，湿度90～95%中放置500±12 小时后，常温常湿中放置1 小时以上2 小时以内测试。 The specimen shall be stored at a temperature of 60± 2℃ with relative humidity of 90 ~ 95% for 500 ± 2h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%
温度循环 Temperature cycle	以温度-40℃中放置30 分钟，在125℃放置30 分钟，中间转换时间不超过2 分钟为一个循环。完成500 个循环后，常温常湿中放置1小时以上2 小时以内测试。 The specimen shall be subjected to 500 continuous cycles of temperature change of -40℃ for 30 min and 125℃ for 30 min with the transit period of 2min or less. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%

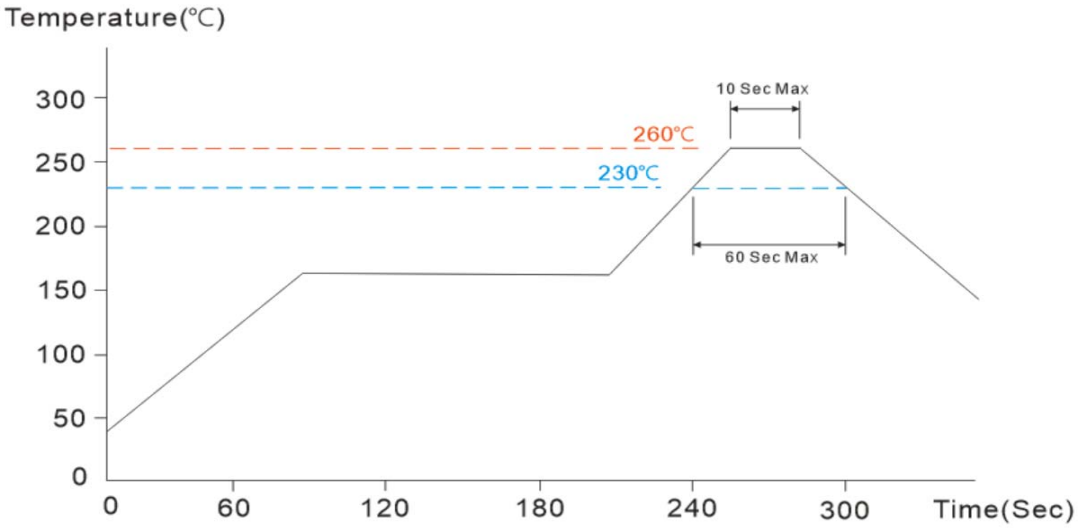
标准状态Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions in making measurements and test as follows;
Ambient temperature : 5℃ to 35℃, Relative humidity: 45% to 85%, Air pressure: 86kPa to 106kPa
If more strict measurement is required, measurement shall be made within following limits;
Ambient temperature : 20±2℃, Relative humidity: 65±5%, Air pressure: 86kPa to 106kPa

禁用物质Prohibited Subtances

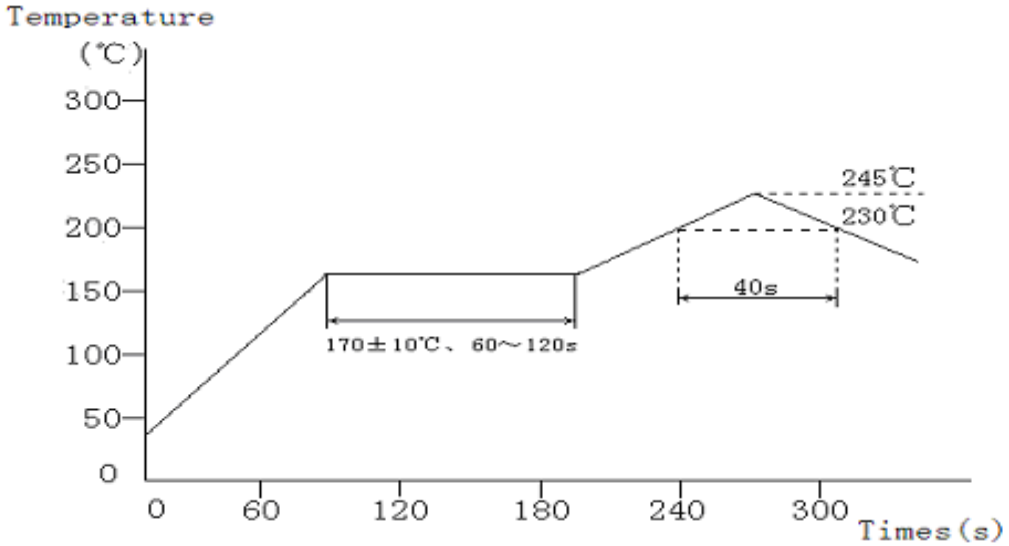
我公司保证我司的产品和生产过程符合“RoHS 规则”，所有产品中使用的材料均是化学物质生产规则中登记的材料。
We confirm that our products and our production process accord with "rule of RoHS". All materials used in this product are registered material under the law concerning the examination and Regulation of Manufacture of Chemical Substances.

⊕ Reflow Soldering Heat Endurance



No mechanical and electrical defects are found after testing based on the above profile and keeping under the conditions of room temperature and humidity for 2 hours.
Twice reflow test is acceptable with the test interval remaining 1 hour under the normal conditions.
The reflow test profile may vary with the testing instruments.

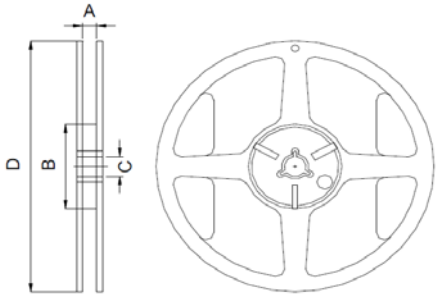
⊕ Recommended Reflow Conditions



The recommended reflow profile is based on the testing instruments used. Solder ability will depend on the testing equipments, reflow conditions, testing method, etc. So it is necessary to make a confirmation of them when the reflow conditions are set up.

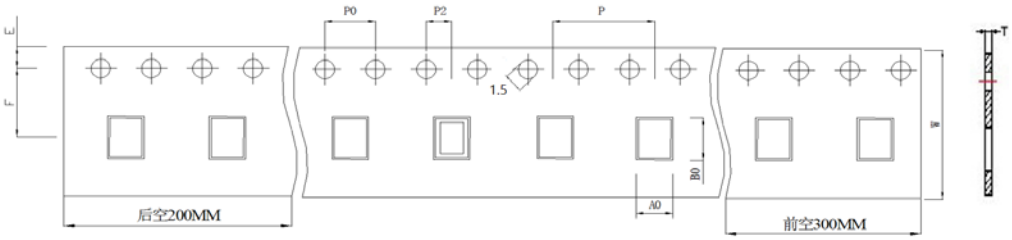
However halogen lamp shall be used, side heat will be beyond range of resistance heat,
so we can't recommend it.

⊕Reel Dimension(m/m)

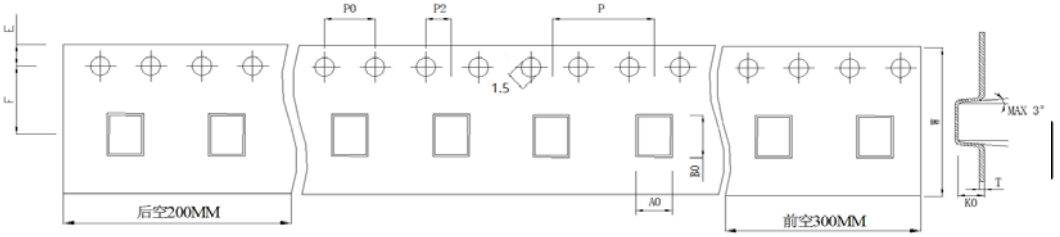


Item	A	B	C	D	Applicable Models
7"x8	8.4±1	60±1	13±1	178±1	WCF0402、WCF0603、WCF0805、WCF1008、WCF1210

⊕Taping Dimension(m/m)

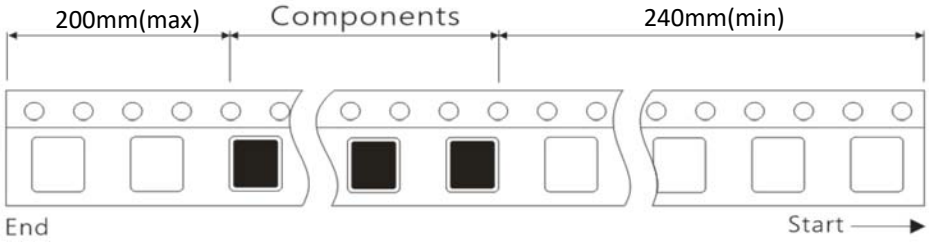


Item	W	Ao	Bo	E	F	P	P0	P2	t
WCF0402(1005)	8±0.3	0.74±0.1	1.23±0.1	1.75±0.1	3.5±0.1	2±0.1	4.0±0.1	2.0±0.1	0.8±0.05



Item	W	Ao	Bo	Ko	E	F	P	P0	P2	t
WCF0603(1608)	8±0.3	1.15±0.1	1.83±0.1	0.95±0.1	1.75±0.1	3.5±0.1	4±0.1	4.0±0.1	2.0±0.1	0.25±0.05
WCF0805(2012)	8±0.3	1.85±0.1	2.40±0.1	1.45±0.1	1.75±0.1	3.5±0.1	4±0.1	4.0±0.1	2.0±0.1	0.25±0.05
WCF1008(2520)	8±0.3	2.73±0.1	2.90±0.1	2.34±0.1	1.75±0.1	3.5±0.1	4±0.1	4.0±0.1	2.0±0.1	0.25±0.05
WCF1210(3225)	8±0.3	2.96±0.1	3.60±0.1	2.40±0.1	1.75±0.1	3.5±0.1	4±0.1	4.0±0.1	2.0±0.1	0.25±0.05

⊕Taping method



⊕ Packaging Carton

Item	Reel Packing Unit	Inner Box Packing Unit	Carton Packing Unit
WCF0402(1005)	10,000 PCS / Reel	50,000 PCS / Box	500,000 PCS / Box
WCF0603(1608)	4,000 PCS / Reel	20,000 PCS / Box	200,000 PCS / Box
WCF0805(2012)	3,000 PCS / Reel	15,000 PCS / Box	150,000 PCS / Box
WCF1008(2520)	2,000 PCS / Reel	10,000 PCS / Box	100,000 PCS / Box
WCF1210(3225)	2,000 PCS / Reel	10,000 PCS / Box	100,000 PCS / Box