



炬鹿科技有限公司  
RIDEE TECH COMPANY LIMITED

Revision Date : 2020 / 11 / 03

# APPROVAL SHEET

Product Name : SMD Wire Wound Ferrite Chip Inductor

Part NO. : LFS Series (Standard)

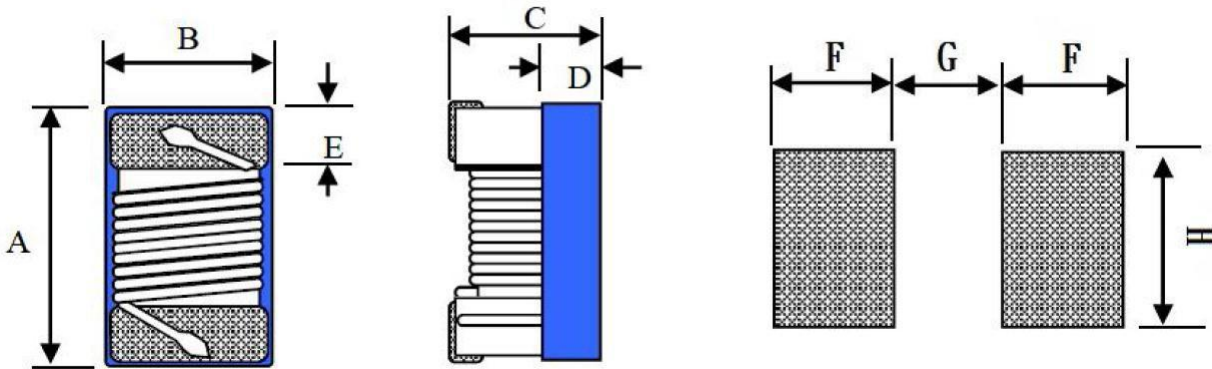
Description : Size 0603 / 1008

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### ■ SMD Wire Wound Ferrite Chip Inductor – LFS Series



Dimensions

Unit:mm

TYPE	SIZE	A max	B max	C max	D ref	E	F	G	H
LFS0603	0603	1.8	1.2	1.00	0.45	0.33	0.64	0.64	1.02
LFS1008	1008	2.9	2.54	2.00	1.30	0.51	1.02	1.27	2.54

### ■ Application

- TWS(True Wireless stereo)
- Wireless communication
- Personal computer

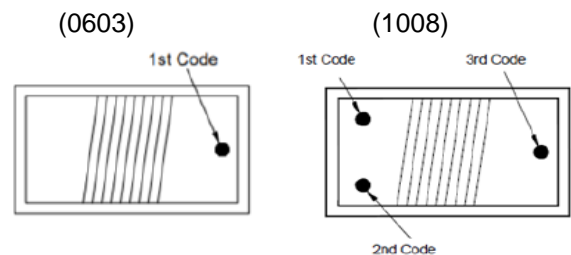
### ■ Feature

- Utilizing a miniaturized winding structure
- These products provide low DC resistance and high current
- Precision inductance tolerance is available

### ■ Construction & Material

- Core : Ferrite core
- Wire : Enameled copper wire
- Terminal : Ag -Pd / Ni / Sn
- Encapsulate : UV epoxy
- Products comply with RoHS' requirements.

### ■ Color Code



### ■ Parts Number Explanation

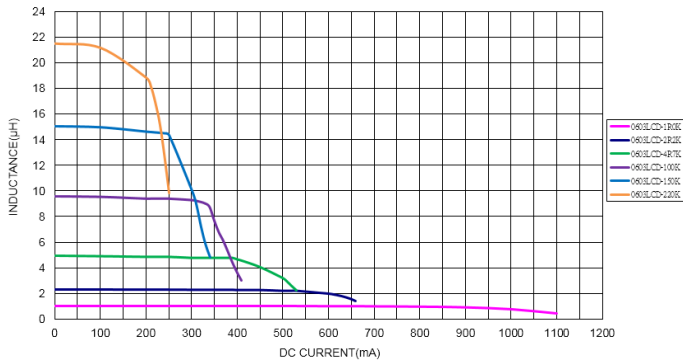
LFS	0603	K	T	1R0
<b>Product Type</b>	<b>Size (Inch)</b>	<b>Tolerance</b>	<b>Terminal</b>	<b>Inductance</b>
Wire Wound Ferrite Chip Inductor (Standard)	0603 1008	J : ±5% K : ±10% M : ±20%	T : Tin plated.	1R0=1.0μH 220=22μH

### Specification / Electrical

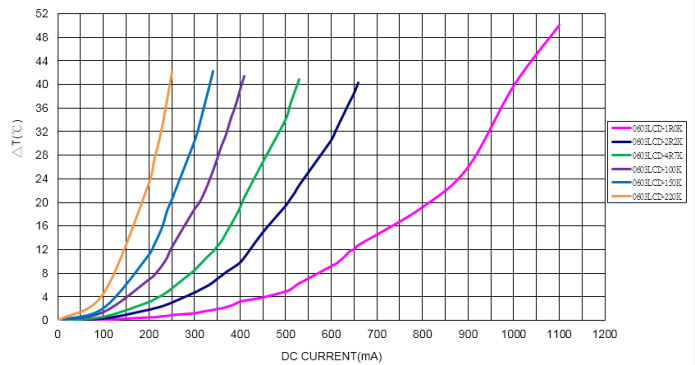
PART NUMBER	INDUCTANCE (μ H)	Q Typ	SRF (MHz) Typ	RDC (Ω) ±30%	IDC (mA) Typ	IRMS (mA) Typ	TOLERANCE	COLOR CODE
LFS0603-1R0	1.0@7.9MHz	16@7.9MH	390	0.32	860	700	K , M	Black
LFS0603-2R2	2.2@7.9MHz	16@7.9MH	103	0.56	600	580	K , M	Orange
LFS0603-4R7	4.7@7.9MHz	16@7.9MH	51	0.97	400	420	K , M	Violet
LFS0603-100	10@2.5MHz	14@2.5MH	36	1.85	280	280	K , M	Brown
LFS0603-150	15@2.5MHz	14@2.5MH	29	2.60	240	240	K , M	Orange
LFS0603-220	22@2.5MHz	14@2.5MH	24	3.61	200	200	K , M	Green

- Test equipment :  
L/Q : E4991A  
SRF : E4991A,HP8753E
- IDC : For Inductance drop 10% from its value without current.
- Operating temperature : -25°C~+85°C.
- DCR: TESTED BY CH16502 or its equivalent
- Irms for a 15°C rise above 25°C ambient.

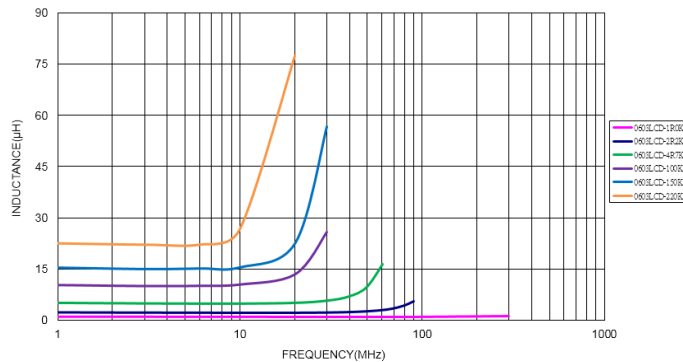
INDUCTANCE CHANGE vs. DC CURRENT



TEMPERATURE CHANGE vs. DC CURRENT



INDUCTANCE CHANGE vs. FREQUENCY CHARACTERISTICS





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### Specification / Electrical

PART NUMBER	INDUCTANCE ( $\mu$ H)	Q Typ	SRF (MHz) Min	RDC ( $\Omega$ ) Max	IDC (mA) Max	TOLERANCE	COLOR CODE		
							1 st	2 nd	3 rd
LFS 1008-R10	0.1@25MHz	35@25MHz	1500	0.05	3200	K , J	Brown	Red	Brown
LFS 1008-1R0	1.0@7.9MHz	32@7.9MHz	340	0.34	1700	K , J	Brown	Black	Red
LFS 1008-1R5	1.5@7.9MHz	32@7.9MHz	230	0.42	1500	K , J	Brown	Green	Red
LFS 1008-2R2	2.2@7.9MHz	27@7.9MHz	140	0.50	1200	K , J	Red	Red	Red
LFS 1008-3R3	3.3@7.9MHz	27@7.9MHz	125	0.60	1300	K , J	Orange	Orange	Red
LFS 1008-4R7	4.7@7.9MHz	30@7.9MHz	90	0.90	1100	K , J	Yellow	Violet	Red
LFS 1008-6R8	6.8@7.9MHz	27@7.9MHz	60	1.05	950	K , J	Blue	Gray	Red
LFS 1008-8R2	8.2@7.9MHz	25@7.9MHz	55	1.20	850	K , J	Gray	Red	Red
LFS 1008-100	10@2.5MHz	23@2.5MHz	55	1.55	800	K , J	Brown	Black	Orange
LFS 1008-150	15@2.5MHz	23@2.5MHz	36	2.38	650	K , J	Brown	Green	Orange
LFS 1008-220	22@2.5MHz	23@2.5MHz	29	2.92	550	K , J	Red	Red	Orange
LFS 1008-330	33@2.5MHz	23@2.5MHz	21	4.10	450	K , J	Orange	Orange	Orange
LFS 1008-470	47@2.5MHz	23@2.5MHz	17	7.80	350	K , J	Yellow	Violet	Orange

1、Testequipment:

L/Q : E4991A

SRF : E4991A,HP8753E

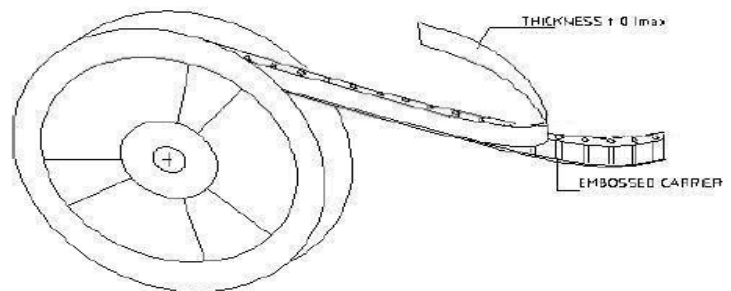
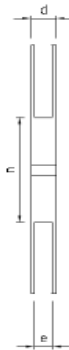
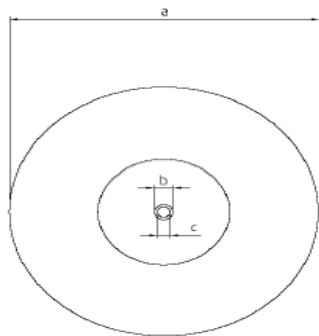
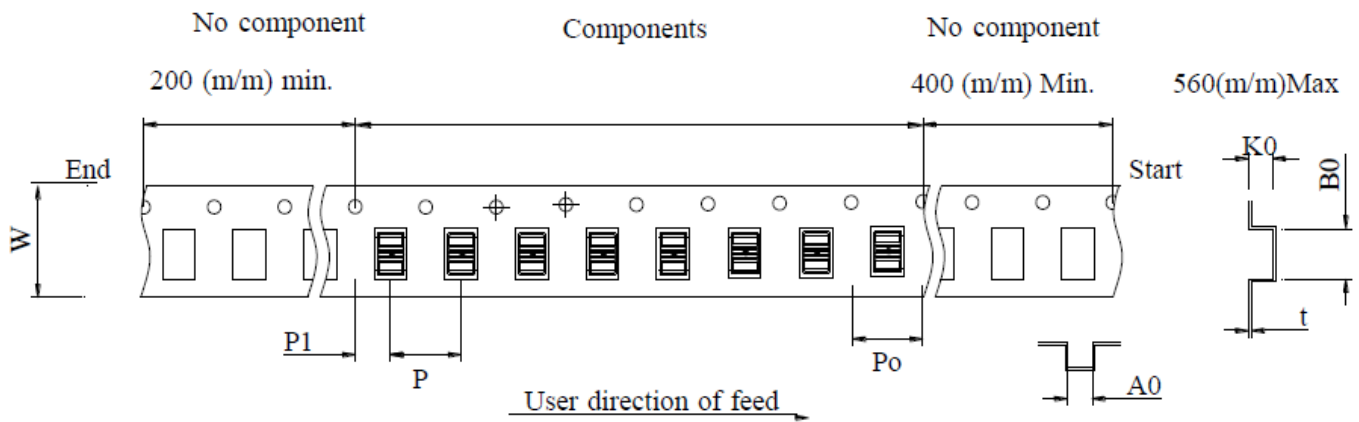
2、IDC : For Inductance drop 35% from its value without current.

3、Operating temperature : -25°C~+85°C.

4、DCR: TESTED BY CH16502 or its equivalent.

5、Irms for a 40°C rise above 25°C ambient.

### Packaging



Product Series	t	PI	P	P0	W	A0	B0	K0	a	b	c	d	e	n
0603	0.22 ±0.05	2.0 ±0.1	4.0 ±0.1	4.0 ±0.1	8.0 ±0.1	1.25 ±0.1	1.90 ±0.1	1.05 ±0.1	178.0 ±2.0	21.0 ±0.8	13.0 ±0.8	12.5 MAX	8.4 ±1.0	50 MIN
1008	0.25 ±0.05	2.0 ±0.1	4.0 ±0.1	4.0 ±0.1	8.0 ±0.2	2.50 ±0.1	2.85 ±0.1	2.00 ±0.1	178.0 ±2.0	21.0 ±0.8	13.0 ±0.8	12.5 MAX	8.4 ±1.0	50 MIN

Type	Reel		5Reel / Box		6Box / Carton	
	Q'ty(Pcs)	Size m/m	Q'ty(Pcs)	Size m/m	Q'ty(Pcs)	Size m/m
LFS0603	4,000	180ψ	20,000	182×182×80	120,000	540×210×205
LFS1008	2,000	180ψ	10,000	182×182×80	60,000	540×210×205



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### Reliability

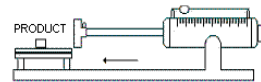
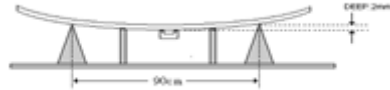
#### 1. Environmental Performance

NO	ITEM	SPECIFICATION	TEST CONDITION			TSET METHOD
1-1	TEMPERATURE CYCLE	APPEARANCE:NO DAMAGE L CHANGE:WITHIN 10% Q CHANGE:WITHIN 30%	ONE CYCLE			TO WRITE DOWN MEASURED RESULT FOR THE PARTS AFTER TEST AT ROOM TEMPERATURE FOR 1HOUR AND BEFRON TEST
			STEP	TEMPERATURE(°C)	TIME(MIN)	
			1	+125°C 5	30	
			2	-40°C 5	30	
			TOTAL:10CYCLES			
1-2	HUMIDITY RESISTANCE		TEMPERATURE:40 2°C RELATIVE HUMIDITY:90 5% TIME:96HRS			TO WRITE DOWN MEASURED RESULT FOR THE PARTS AFTER TEST AT ROOM TEMPERATURE FOR 1HOUR AND BEFRON TEST
1-3	LIFE TEST		TEMPERATURE:+75°C 5°C TIME:300HRS			TO WRITE DOWN MEASURED RESULT FOR THE PARTS AFTER TEST AT ROOM TEMPERATURE FOR 1HOUR AND BEFRON TEST
1-4	LOWTEMPERATURE STORAGE		TEMPERATURE:-40°C 2°C TIME:48 2HRS			TO WRITE DOWN MEASURED RESULT FOR THE PARTS AFTER TEST AT ROOM TEMPERATURE FOR 1HOUR AND BEFRON TEST
1-5	HIGHTEMPERATURE STORAGE		TEMPERATURE:+125°C 2°C TIME: 48 2HRS			TO WRITE DOWN MEASURED RESULT FOR THE PARTS AFTER TEST AT ROOM TEMPERATURE FOR 1HOUR AND BEFRON TEST

### Reliability

#### 2. Mechanical Performance

NO	ITEM	SPECIFICATION	TEST CONDITION
2-1	VIBRATION		TEST DEVICE SHALL BE SOLDERED ON THE SUBSTRATE OSCILLATION FREQUENCY:10TO 55TO10Hz FOR 1MIN AMPLITUDE:0.75mm TIME:2HRS:FOREACH AXIS(X,Y&Z), TOTAL 6HRS
2-2	RESISTANCE TO SOLDERING HEAT		SOLDER COMPOSITION: Sn/Ag/Cu=96.5/3.0/0.5 SOLDER TEMPERATURE:260 5°C IMMERSION TIME:10 1SEC TOTAL:2 CYCLES
2-3	SOLDERABILITY	THE ELECTRODES SHALL BE AT LEAST 95% COVERED WITH NEW SOLDER COATIN	SOLDER COMPOSITION:Sn/Ag/Cu=96.5/3.0/0.5 SOLDER TEMPERATURE:230 5°C IMMERSION TIME:5 0.5SEC
2-4	FLEXURE STRENGTH	THE BEING TRIED ARTICLE CAN'T CRACK OR SHED OFF OF SITUATION.	AFTER SOLDERING A CHIP TO A TEST SUBSTRATE,BEND THE USING THE FERROMOLYBDENUM MASS TO GET DOWN THE PCB BOARD TO PRESS TO BEND THE 2 mm DEPTH AND RETURN TO AGAIN THE BREAKOUT MAINTAINING THE 10SEC. SOLDERING SHALL BE RECOMMENDED PC BOARD PATTERN AND REFLOW S
2-5	TERMINAL STRENGTH	PRODUCT OF THE SERIES IS MORE THAN 2POUND	AFTER SOLDERING A CHIP TO A TEST SUBSTRATE,WITH THE 0.13~0.15mm THICK SOLDER. SOLDERING SHALL BE RECOMMENDED PC BOARD PATTERN AND REFLOW SOLDERING. THE THRUST ABOUT PUSHER PRODUCT WITH THE VELOCITY OF THE 20mms/1sec AFTER ACCOUNTING TO RETURN THE NULL.



#### 3. Recommended Lead-Free IR Reflow Conditions

