

## LS Series



LS Series is the newest in open type ferrite wire wound chip inductors. The wire wound ferrite construction supports higher SRF, lower DCR and superior Q values than other ferrite chip inductors.

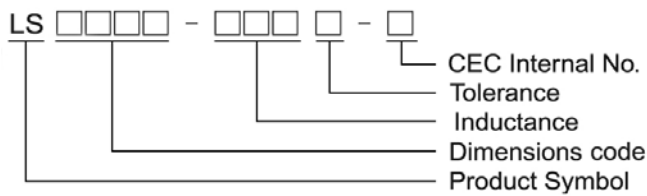
### Features

- RoHS compliant
- Very strong solderability by reflow soldering and soldering iron
- Highly accurate dimensions
- Can be mounted automatically
- Terminals are highly resistant to external forces
- Highly resistant to mechanical shocks and pressure
- Highly reliable in environments of sudden temperature change and humidity
- Low DCR & better Q value in ferrite series

### Applications

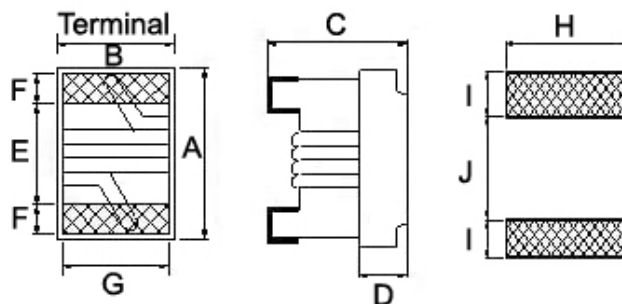
- Telecom and datacom applications such as xDSL
- Cable modem
- Set-top box
- CATV filter/tuner
- Wireless LAN, etc

### Product Identification



### Shape and Dimensions / Recommended Pattern

**LS0402/0603/0805/1008**



Dimensions in mm

TYPE	A Max	B Max	C Max	D	E	F	G	H	I	J
LS0402	1.02±0.1	0.55±0.1	0.56±0.1	0.25	0.54	0.23	0.50	0.65	0.38	0.44
LS0603	1.6 <sup>+0.2</sup> <sub>-0.1</sub>	1.1±0.1	0.9 <sup>+0.2</sup> <sub>-0.1</sub>	0.38	0.86	0.33	0.76	1.02	0.64	0.64
LS0805	2.4	1.72	1.52	0.70	1.02	0.50	1.27	1.78	1.02	0.76
LS1008	2.99	2.50	2.20	0.70	1.52	0.51	2.03	2.54	1.02	1.27

# SMD Wire Wound Ferrite Chip Inductors – LS Series

## Electrical Characteristics

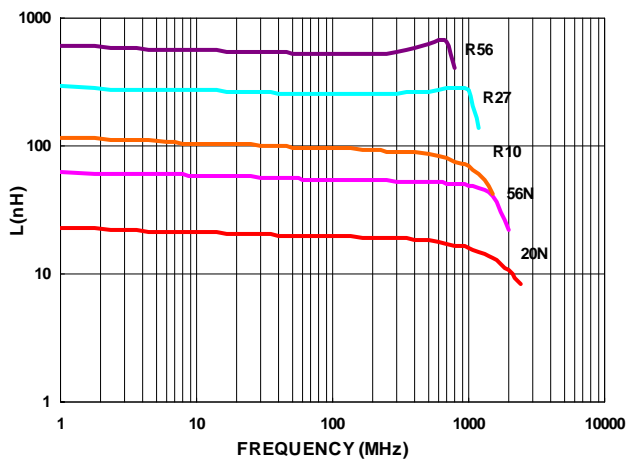
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Q Typ.	SRF (MHz)Typ.	RDC (Ω) Max	Irms (mA)Typ.
LS0402-20N□-N	0.020	10 / 5	100	10	2600	0.050	1600
LS0402-22N□-N	0.022	10	100	10	2500	0.072	1300
LS0402-33N□-N	0.033	10 / 5	100	10	2300	0.060	1400
LS0402-36N□-N	0.036	10 / 5	100	10	2300	0.092	1000
LS0402-39N□-N	0.039	10 / 5	100	10	2200	0.150	830
LS0402-51N□-N	0.051	10	100	10	1930	0.070	1100
LS0402-56N□-N	0.056	10	100	10	1900	0.125	900
LS0402-72N□-N	0.072	10 / 5	100	10	1650	0.100	900
LS0402-78N□-N	0.078	10 / 5	100	10	1600	0.190	850
LS0402-R10□-N	0.10	10	100	9	1400	0.160	900
LS0402-R14□-N	0.14	10 / 5	50	11	1220	0.260	540
LS0402-R18□-N	0.18	10	50	11	1150	0.330	560
LS0402-R20□-N	0.20	10 / 5	50	11	1000	0.440	400
LS0402-R22□-N	0.22	10 / 5	50	11	1150	0.530	380
LS0402-R25□-N	0.25	10 / 5	25	11	900	0.360	520
LS0402-R27□-N	0.27	10	25	11	860	0.550	360
LS0402-R30□-N	0.30	10 / 5	25	11	860	0.410	420
LS0402-R33□-N	0.33	10 / 5	7.9	11	820	0.680	350
LS0402-R36□-N	0.36	10 / 5	7.9	11	810	0.575	360
LS0402-R39□-N	0.39	10 / 5	7.9	11	760	0.890	300
LS0402-R42□-N	0.42	10 / 5	7.9	11	700	1.100	340
LS0402-R47□-N	0.47	10	7.9	11	650	0.730	310
LS0402-R56□-N	0.56	10 / 5	7.9	11	600	1.100	200

**Note: When ordering, please specify tolerance code. Tolerance : J=±5% , K=±10%**

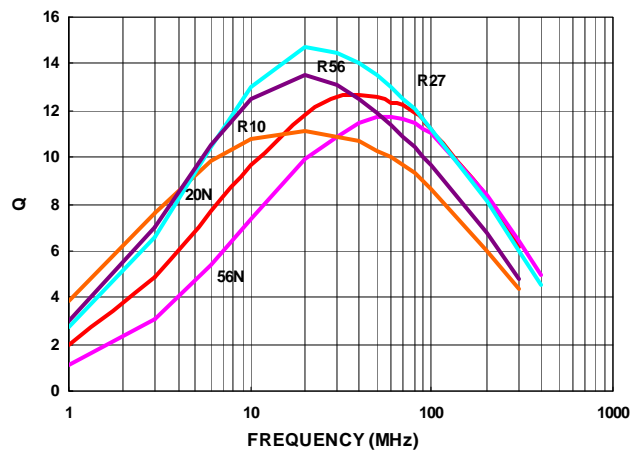
- Operating temperature range - 25°C ~ 105°C(Including self - temperature rise)
- Irms for a 15°C temperature rise from 25°C ambient with current
- Measure Equipment :  
 L & Q : Agilent E4991A+Agilent HP16197A  
 SRF : Agilent E4991A  
 RDC : DIGITAL MILLINHM METER CHROMA 16502  
 Irms : HP4284A+HP42841A

**Test Instruments :** Agilent E4991A Material/Impedance Analyzer

**Typical L vs. Frequency**



**Typical Q vs. Frequency**



# SMD Wire Wound Ferrite Chip Inductors - LS Series

## Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Q Typ.	SRF (MHz) Min	RDC (Ω) Max	IDC (mA)	Color
LS0603-47N□-N	0.047	10 / 5	7.9	17	1700	0.075	1500	Black
LS0603-72N□-N	0.072	10 / 5	7.9	17	1700	0.12	1500	Brown
LS0603-R10□-N	0.10	10 / 5	7.9	17	1650	0.13	1500	Red
LS0603-R12□-N	0.12	10 / 5	7.9	17	1350	0.15	1500	Orange
LS0603-R15□-N	0.15	10 / 5	7.9	17	1350	0.15	1450	Yellow
LS0603-R18□-N	0.18	10 / 5	7.9	17	1150	0.15	1400	Green
LS0603-R22□-N	0.22	10 / 5	7.9	17	1050	0.16	1350	Blue
LS0603-R24□-N	0.24	10 / 5	7.9	17	1050	0.19	1300	Violet
LS0603-R27□-N	0.27	10 / 5	7.9	17	1050	0.30	1050	Gray
LS0603-R33□-N	0.33	10 / 5	7.9	17	850	0.46	1200	White
LS0603-R39□-N	0.39	10 / 5	7.9	17	810	0.51	1200	Black
LS0603-R47□-N	0.47	10 / 5	7.9	17	720	0.62	1050	Brown
LS0603-R56□-N	0.56	10 / 5	7.9	17	600	0.44	850	Red
LS0603-R68□-N	0.68	10 / 5	7.9	17	600	0.52	850	Orange
LS0603-R78□-N	0.78	10 / 5	7.9	17	460	0.83	850	Yellow
LS0603-R82□-N	0.82	10 / 5	7.9	17	480	0.69	750	Green
LS0603-1R0□-N	1.0	10 / 5	7.9	18	310	0.81	600	Blue
LS0603-1R2□-N	1.2	10 / 5	7.9	17	270	0.87	550	Violet
LS0603-1R5□-N	1.5	10 / 5	7.9	17	270	1.06	540	Gray
LS0603-1R8□-N	1.8	10 / 5	7.9	17	230	1.10	520	White
LS0603-2R2□-N	2.2	10 / 5	7.9	17	140	1.20	500	Black
LS0603-2R7□-N	2.7	10 / 5	7.9	17	105	1.50	480	Brown
LS0603-3R3□-N	3.3	10 / 5	7.9	17	84	1.50	440	Red
LS0603-3R9□-N	3.9	10 / 5	7.9	17	80	1.60	430	Orange
LS0603-4R7□-N	4.7	10 / 5	7.9	18	69	2.10	420	Yellow
LS0603-5R6□-N	5.6	10 / 5	7.9	18	65	2.60	400	Green
LS0603-6R8□-N	6.8	10 / 5	7.9	19	55	3.10	400	Blue
LS0603-7R8□-N	7.8	10 / 5	7.9	17	47	3.50	400	Violet
LS0603-8R2□-N	8.2	10 / 5	7.9	17	42	3.80	400	Gray
LS0603-100□-N	10	10 / 5	7.9	19	40	4.80	300	White

**Note:** When ordering, please specify tolerance code. Tolerance : J=±5% , K=±10%

- Operating temperature range - 25°C ~ 105°C(Including self - temperature rise)
- IDC for Inductance drop 10% from its value without current
- Measure Equipment :

L & Q : Agilent E4991A+Agilent HP16197A

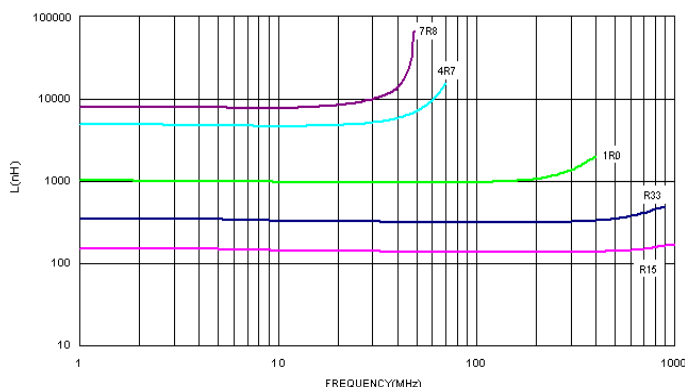
SRF : Agilent HP8753D/Agilent E4991A

RDC : CHEN HWA 502

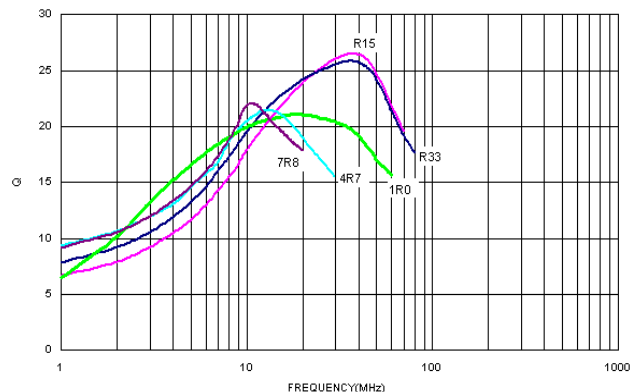
IDC : HP4284A+HP42841A/HP4285A+HP42841A

**Test Instruments :** Agilent E4991A Material/Impedance Analyzer

**Typical L vs. Frequency**



**Typical Q vs. Frequency**



# SMD Wire Wound Ferrite Chip Inductors - LS Series

## Electrical Characteristics

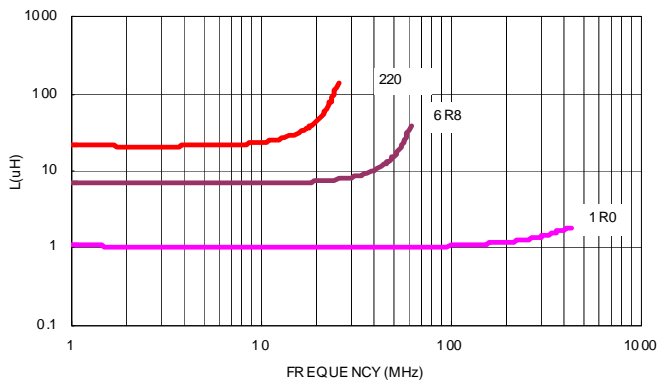
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Q Typ.	SRF (MHz) Min	RDC (Ω) Max	IDC (mA)	Color
LS0805-78N□-N	0.078	10 / 5	7.9	19	1440	0.06	2000	Black
LS0805-R11□-N	0.11	10 / 5	7.9	19	1200	0.07	2000	Brown
LS0805-R47□-N	0.47	10 / 5	7.9	19	480	0.40	800	Red
LS0805-R68□-N	0.68	10 / 5	7.9	20	480	0.40	800	Orange
LS0805-1R0□-N	1.0	10 / 5	7.9	20	400	0.69	700	Yellow
LS0805-1R5□-N	1.5	10 / 5	7.9	20	330	0.83	700	Green
LS0805-1R8□-N	1.8	10 / 5	7.9	20	300	1.00	650	Blue
LS0805-2R2□-N	2.2	10 / 5	7.9	20	250	1.10	650	Violet
LS0805-2R7□-N	2.7	10 / 5	7.9	23	200	1.25	650	Gray
LS0805-3R3□-N	3.3	10 / 5	7.9	23	160	1.45	650	White
LS0805-3R9□-N	3.9	10 / 5	7.9	23	90	1.50	600	Black
LS0805-4R7□-N	4.7	10 / 5	7.9	20	70	1.60	530	Brown
LS0805-5R6□-N	5.6	10 / 5	7.9	20	65	1.70	500	Red
LS0805-6R8□-N	6.8	10 / 5	7.9	20	45	1.95	470	Orange
LS0805-8R2□-N	8.2	10 / 5	2.5	16	45	2.10	450	Yellow
LS0805-100□-N	10	10 / 5	2.5	16	40	2.40	400	Green
LS0805-120□-N	12	10 / 5	2.5	16	38	3.20	360	Red
LS0805-150□-N	15	10 / 5	2.5	16	30	3.55	350	Blue
LS0805-180□-N	18	10 / 5	2.5	16	25	4.90	300	Orange
LS0805-220□-N	22	10 / 5	2.5	16	20	5.45	270	Violet
LS0805-270□-N	27	10 / 5	2.5	16	19	7.80	240	Gray
LS0805-470□-N	47	10 / 5	2.5	16	15	14.50	180	Brown

**Note:** When ordering, please specify tolerance code. Tolerance : J=±5% , K=±10%

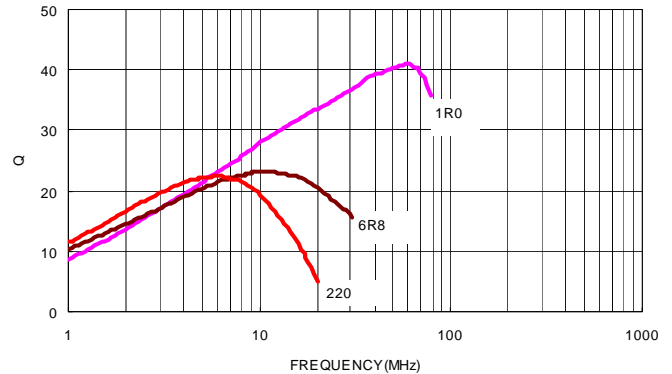
- Operating temperature range - 25°C ~ 105°C(Including self - temperature rise)
- IDC for Inductance drop 10% from its value without current
- Measure Equipment :  
 L & Q : Agilent E4991A+Agilent HP16197A  
 SRF : Agilent E4991A  
 RDC : HP4338B or CHEN HWA 502  
 IDC : HP4284A+HP42841A/HP4285A+HP42841A

**Test Instruments :** Agilent E4991A Material/Impedance Analyzer

**Typical L vs. Frequency**



**Typical Q vs. Frequency**



## Electrical Characteristics

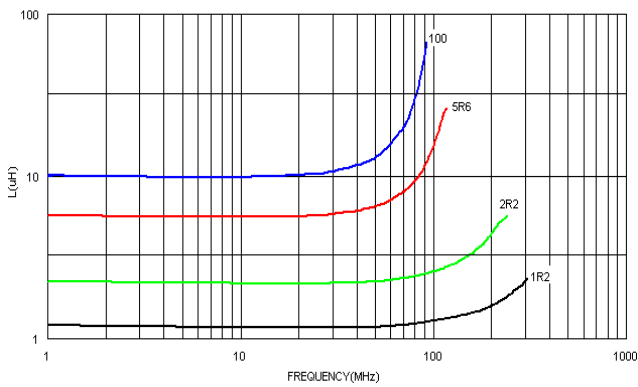
Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	Q Typ.	Test Frequency (MHz)	SRF (MHz) Min	RDC (Ω) Max	IDC (mA)	Color Coding		
									1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>
LS1008-1R2□-N	1.2	10 / 5	7.9	55	50	350	0.50	1200	Brown	Red	Red
LS1008-1R5□-N	1.5	10 / 5	7.9	58	50	300	0.65	1200	Brown	Green	Red
LS1008-1R8□-N	1.8	10 / 5	7.9	54	50	280	0.75	1050	Brown	Gray	Red
LS1008-2R2□-N	2.2	10 / 5	7.9	48	50	250	0.90	950	Red	Red	Red
LS1008-2R7□-N	2.7	10 / 5	7.9	51	50	200	1.00	950	Red	Violet	Red
LS1008-3R3□-N	3.3	10 / 5	7.9	58	50	200	1.15	900	Orange	Orange	Red
LS1008-3R9□-N	3.9	10 / 5	7.9	37	7.9	170	1.25	850	Orange	White	Red
LS1008-4R7□-N	4.7	10 / 5	7.9	37	7.9	130	1.35	700	Yellow	Violet	Red
LS1008-5R6□-N	5.6	10 / 5	7.9	36	7.9	110	1.45	700	Green	Blue	Red
LS1008-6R8□-N	6.8	10 / 5	7.9	33	7.9	105	1.60	600	Blue	Gray	Red
LS1008-8R2□-N	8.2	10 / 5	7.9	40	7.9	90	1.80	550	Gray	Red	Red
LS1008-100□-N	10	10 / 5	7.9	40	7.9	85	2.40	500	Brown	Black	Orange
LS1008-120□-N	12	10 / 5	7.9	40	7.9	80	2.40	450	Brown	Red	Orange
LS1008-150□-N	15	10 / 5	7.9	35	7.9	38	2.40	450	Brown	Green	Orange
LS1008-330□-N	33	10 / 5	2.5	33	2.5	26	10	170	Orange	White	Orange

**Note:** When ordering, please specify tolerance code. Tolerance : J=±5% , K=±10%

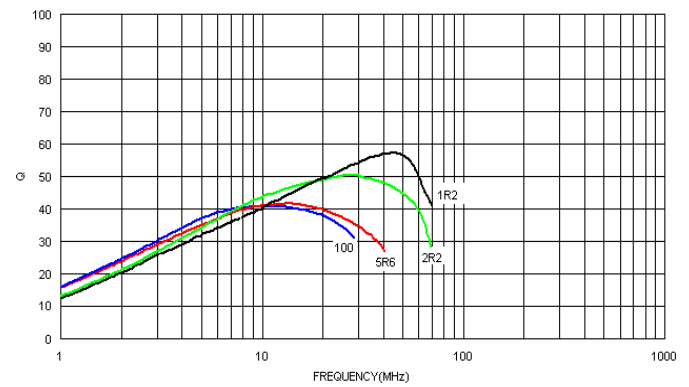
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- IDC for Inductance drop 10% from its value without current
- Measure Equipment :  
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 SRF : Agilent E4991A  
 RDC : HP4338B or CHEN HWA 502  
 IDC : HP4284A+HP42841A/HP4285A+HP42841A

## Test Instruments : Agilent E4991A Material/Impedance Analyzer

### Typical L vs. Frequency



### Typical Q vs. Frequency



## Packaging Specifications

### Tape Dimensions

### Tape Material

Figure 1

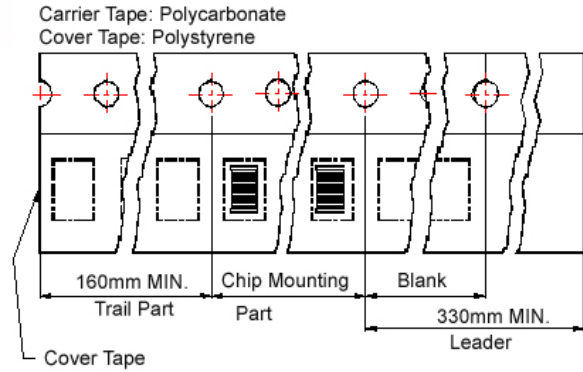
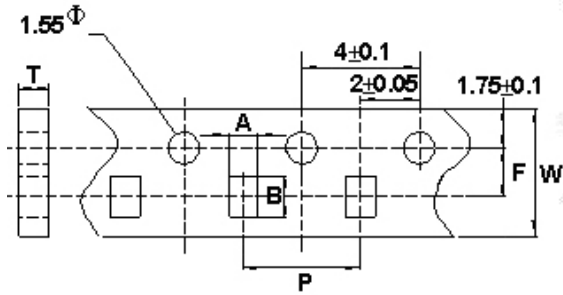
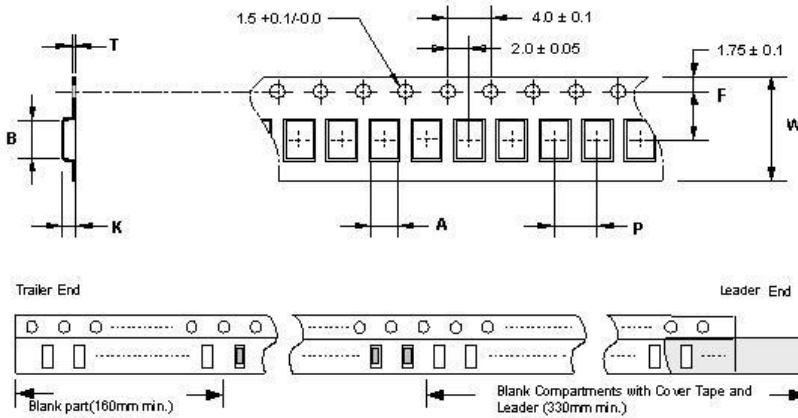
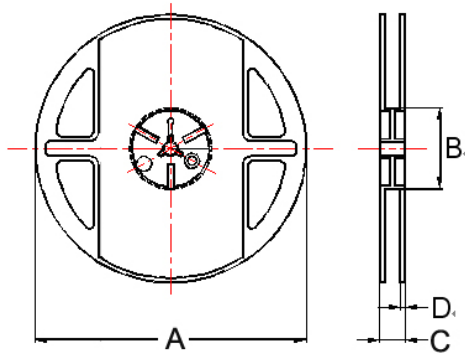


Figure 2



### Reel Dimensions



### Dimensions in mm

TYPE	Fig.	Tape Dimensions							Reel Dimensions				Quantity PCS / REEL
		A	B	T	W	P	F	K	A	B	C	D	
LS0402	2	0.67	1.20	0.75	8	2	3.5	0.53	178	60	12	1.5	4000
LS0603	1	1.23	1.90	0.97	8	4	3.5	-	178	60	12	1.5	4000
LS0805	2	1.60	2.42	0.22	8	4	3.5	1.45	178	60	12	1.5	2000
LS1008	2	2.40	2.93	0.26	8	4	3.5	2.25	178	60	12	1.5	2000