

Multilayer Chip Ferrite Inductor



◆ Features

- 1、 Monolithic structure for high reliability
- 2、 Compact size inductor possible
- 3、 No cross coupling due to magnetic shield
- 4、 Perfect shape for mounting with no directionality
- 5、 Excellent solderability and high heat resistance for reflow soldering or wave soldering
- 6、 RoHS Compliant.



◆ Application

Widely use in Communications, Video and audio equipment, Computer, Remote control, etc.

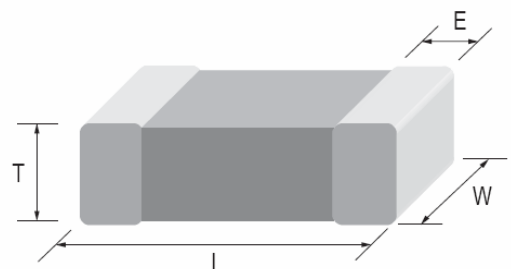
◆ PRODUCT IDENTIFICATION

SCL 1608 S 1R0 M S P
(1) (2) (3) (4) (5) (6) (7)

- (1) Series Type
- (2) Chip Size (mm) :Length X Width
- (3) Material Code
- (4) Inductance: 47N=0.047μH; R10=0.10μH
1R0=1.0μH; 100=10μH
- (5) Inductance Tolerance: K=±10%, M=±20%
- (6) Company Code
- (7) Packaging:P–Embossed paper tape, 7" reel
E- Embossed plastic tape, 7" reel

◆ Dimensions Unit: mm

| Size(EIA) | 1005 (0402) | 1608 (0603) | 2012 (0805) | 3216 (1206) |
|-----------|----------------|----------------|----------------|----------------|
| L | 1.00±0.10 | 1.60±0.150 | 2.00±0.20 | 3.20±0.20 |
| W | 0.50±0.10 | 0.80±0.150 | 1.25±0.20 | 1.60±0.20 |
| T | 0.50±0.10 | 0.80±0.150 | 0.90±0.20 | 1.10±0.20 |
| E | 0.25±0.10 | 0.30±0.20 | 0.50±0.30 | 0.50±0.30 |



◆ Specifications

| Part Number | Inductance (μH) | Min. Quality Factor (Q) | L, Q Test Freq. L/Q Freq. (MHz) | Min. Self-resonant Frequency S.R.F.(MHz) | Max. DC Resistance DCR(Ω) | Max. Rated Current Ir(mA) |
|-----------------------|-----------------|-------------------------|---------------------------------|--|---------------------------|---------------------------|
| SCL1005 Series | | | | | | |
| SCL1005L47NKSP | 0.047 | 10 | 50 | 220 | 0.45 | 25 |
| SCL1005L68NKSP | 0.068 | 10 | 50 | 210 | 0.45 | 25 |
| SCL1005L82NKSP | 0.082 | 10 | 50 | 200 | 0.45 | 25 |
| SCL1005LR10KSP | 0.10 | 10 | 25 | 200 | 0.8 | 25 |
| SCL1005LR12KSP | 0.12 | 10 | 25 | 165 | 0.8 | 25 |
| SCL1005LR15KSP | 0.15 | 10 | 25 | 140 | 0.9 | 25 |
| SCL1005LR18KSP | 0.18 | 10 | 25 | 120 | 0.9 | 25 |
| SCL1005LR22KSP | 0.22 | 10 | 25 | 110 | 1.2 | 25 |
| SCL1005LR27KSP | 0.27 | 15 | 25 | 95 | 1.2 | 25 |
| SCL1005LR33KSP | 0.33 | 15 | 25 | 85 | 1.25 | 18 |
| SCL1005QR39KSP | 0.39 | 20 | 10 | 85 | 0.6 | 15 |
| SCL1005QR47KSP | 0.47 | 20 | 10 | 80 | 0.7 | 15 |
| SCL1005QR56KSP | 0.56 | 20 | 10 | 75 | 0.8 | 15 |
| SCL1005QR68KSP | 0.68 | 20 | 10 | 70 | 0.9 | 15 |
| SCL1005QR82KSP | 0.82 | 20 | 10 | 65 | 0.9 | 15 |
| SCL1005Q1R0KSP | 1.0 | 20 | 10 | 40 | 0.9 | 15 |
| SCL1005Q1R2KSP | 1.2 | 20 | 10 | 35 | 1.2 | 15 |
| SCL1005Q1R5KSP | 1.5 | 20 | 10 | 30 | 1.2 | 15 |
| SCL1005Q1R8KSP | 1.8 | 20 | 10 | 30 | 1.45 | 15 |
| SCL1005Q2R2KSP | 2.2 | 20 | 10 | 28 | 1.7 | 10 |
| SCL1005Q2R7KSP | 2.7 | 20 | 10 | 28 | 2.4 | 10 |
| SCL1005Q3R3KSP | 3.3 | 20 | 10 | 28 | 2.7 | 10 |
| SCL1608 Series | | | | | | |
| SCL1608L47NKSP | 0.047 | 10 | 50 | 260 | 0.3 | 50 |
| SCL1608L68NKSP | 0.068 | 10 | 50 | 250 | 0.3 | 50 |
| SCL1608L82NKSP | 0.082 | 10 | 50 | 245 | 0.3 | 50 |
| SCL1608LR10KSP | 0.10 | 15 | 25 | 240 | 0.5 | 50 |
| SCL1608LR12KSP | 0.12 | 15 | 25 | 205 | 0.5 | 50 |
| SCL1608LR15KSP | 0.15 | 15 | 25 | 180 | 0.6 | 50 |
| SCL1608LR18KSP | 0.18 | 15 | 25 | 165 | 0.6 | 50 |
| SCL1608LR22KSP | 0.22 | 15 | 25 | 150 | 0.8 | 50 |
| SCL1608LR27KSP | 0.27 | 15 | 25 | 136 | 0.8 | 50 |
| SCL1608LR33KSP | 0.33 | 15 | 25 | 125 | 0.85 | 35 |
| SCL1608LR39KSP | 0.39 | 15 | 25 | 110 | 1 | 35 |

◆ Specifications

| Part Number | Inductance (μH) | Min. Quality Factor (Q) | L, Q Test Freq. L/Q Freq. (MHz) | Min. Self-resonant Frequency S.R.F.(MHz) | Max. DC Resistance DCR(Ω) | Max. Rated Current Ir(mA) |
|-----------------------|-----------------|-------------------------|---------------------------------|--|---------------------------|---------------------------|
| SCL1608 Series | | | | | | |
| SCL1608LR47KSP | 0.47 | 15 | 25 | 105 | 1.35 | 35 |
| SCL1608LR56KSP | 0.56 | 15 | 25 | 95 | 1.55 | 35 |
| SCL1608LR68KSP | 0.68 | 15 | 25 | 90 | 1.7 | 35 |
| SCL1608LR82KSP | 0.82 | 15 | 25 | 85 | 2.1 | 35 |
| SCL1608Q1R0KSP | 1.0 | 35 | 10 | 75 | 0.6 | 25 |
| SCL1608Q1R1KSP | 1.1 | 35 | 10 | 75 | 0.6 | 25 |
| SCL1608Q1R2KSP | 1.2 | 35 | 10 | 65 | 0.8 | 25 |
| SCL1608Q1R5KSP | 1.5 | 35 | 10 | 60 | 0.8 | 25 |
| SCL1608Q1R8KSP | 1.8 | 35 | 10 | 55 | 0.95 | 25 |
| SCL1608Q2R2KSP | 2.2 | 35 | 10 | 50 | 1.15 | 15 |
| SCL1608Q2R7KSP | 2.7 | 35 | 10 | 45 | 1.35 | 15 |
| SCL1608Q3R3KSP | 3.3 | 35 | 10 | 40 | 1.55 | 15 |
| SCL1608Q3R9KSP | 3.9 | 35 | 10 | 35 | 1.7 | 15 |
| SCL1608Q4R7KSP | 4.7 | 35 | 10 | 33 | 2.1 | 15 |
| SCL1608S5R6KSP | 5.6 | 35 | 4 | 22 | 1.55 | 5 |
| SCL1608S6R8KSP | 6.8 | 35 | 4 | 20 | 1.7 | 5 |
| SCL1608S8R2KSP | 8.2 | 35 | 4 | 18 | 2.1 | 5 |
| SCL1608S100KSP | 10 | 30 | 2 | 17 | 1.85 | 3 |
| SCL1608S120KSP | 12 | 30 | 2 | 15 | 2.1 | 3 |
| SCL1608T150KSP | 15 | 20 | 1 | 14 | 1.7 | 1 |
| SCL1608T180KSP | 18 | 20 | 1 | 13 | 1.85 | 1 |
| SCL1608T220KSP | 22 | 20 | 1 | 11 | 2.1 | 1 |
| SCL1608T270KSP | 27 | 20 | 1 | 10 | 2.75 | 1 |
| SCL1608T330KSP | 33 | 20 | 1 | 9 | 2.95 | 1 |
| SCL2012 Series | | | | | | |
| SCL2012L47NKSP | 0.047 | 15 | 50 | 320 | 0.2 | 300 |
| SCL2012L68NKSP | 0.068 | 15 | 50 | 280 | 0.2 | 300 |
| SCL2012L82NKSP | 0.082 | 15 | 50 | 255 | 0.2 | 300 |
| SCL2012LR10KSP | 0.10 | 20 | 25 | 235 | 0.3 | 250 |
| SCL2012LR12KSP | 0.12 | 20 | 25 | 220 | 0.3 | 250 |
| SCL2012LR15KSP | 0.15 | 20 | 25 | 200 | 0.4 | 250 |
| SCL2012LR18KSP | 0.18 | 20 | 25 | 185 | 0.4 | 250 |
| SCL2012LR22KSP | 0.22 | 20 | 25 | 170 | 0.5 | 250 |
| SCL2012LR27KSP | 0.27 | 20 | 25 | 150 | 0.5 | 250 |
| SCL2012LR33KSP | 0.33 | 20 | 25 | 145 | 0.55 | 250 |

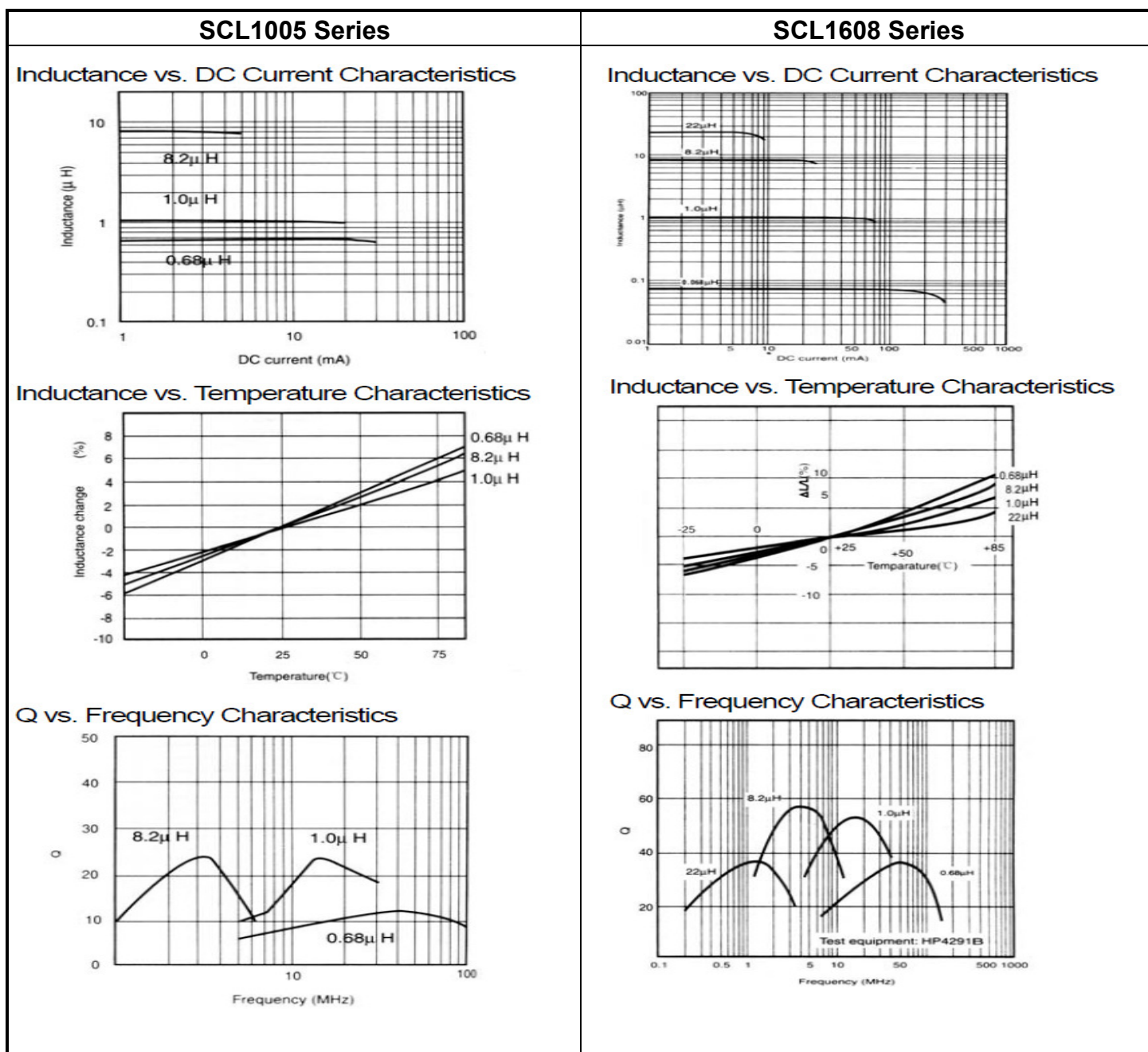
◆ Specifications

| Part Number | Inductance (μH) | Min. Quality Factor (Q) | L, Q Test Freq. L/Q Freq. (MHz) | Min. Self-resonant Frequency S.R.F.(MHz) | Max. DC Resistance DCR(Ω) | Max. Rated Current I _r (mA) |
|-----------------------|-----------------|-------------------------|---------------------------------|--|---------------------------|--|
| SCL2012 Series | | | | | | |
| SCL2012LR39KSP | 0.39 | 25 | 25 | 135 | 0.65 | 200 |
| SCL2012LR47KSP | 0.47 | 25 | 25 | 125 | 0.65 | 200 |
| SCL2012LR56KSP | 0.56 | 25 | 25 | 115 | 0.75 | 150 |
| SCL2012LR68KSP | 0.68 | 25 | 25 | 105 | 0.8 | 150 |
| SCL2012LR82KSP | 0.82 | 25 | 25 | 100 | 1 | 150 |
| SCL2012P1R0KSP | 1.0 | 45 | 10 | 75 | 0.4 | 50 |
| SCL2012P1R1KSP | 1.1 | 45 | 10 | 65 | 0.5 | 50 |
| SCL2012P1R2KSP | 1.2 | 45 | 10 | 65 | 0.5 | 50 |
| SCL2012P1R5KSP | 1.5 | 45 | 10 | 60 | 0.5 | 50 |
| SCL2012P1R8KSP | 1.8 | 45 | 10 | 55 | 0.6 | 50 |
| SCL2012P2R2KSP | 2.2 | 45 | 10 | 50 | 0.65 | 30 |
| SCL2012P2R4KSP | 2.4 | 45 | 10 | 47 | 0.7 | 30 |
| SCL2012P2R7KSP | 2.7 | 45 | 10 | 45 | 0.75 | 30 |
| SCL2012P3R3KSP | 3.3 | 45 | 10 | 41 | 0.8 | 30 |
| SCL2012P3R9KSP | 3.9 | 45 | 10 | 38 | 0.9 | 30 |
| SCL2012P4R7KSP | 4.7 | 45 | 10 | 35 | 1 | 30 |
| SCL2012S5R6KSP | 5.6 | 50 | 4 | 32 | 0.9 | 15 |
| SCL2012S6R8KSP | 6.8 | 50 | 4 | 29 | 1 | 15 |
| SCL2012S8R2KSP | 8.2 | 50 | 4 | 26 | 1.1 | 15 |
| SCL2012S100KSP | 10 | 50 | 2 | 24 | 1.15 | 15 |
| SCL2012S120KSP | 12 | 50 | 2 | 22 | 1.25 | 15 |
| SCL2012T150KSP | 15 | 30 | 1 | 19 | 0.8 | 5 |
| SCL2012T180KSP | 18 | 30 | 1 | 18 | 0.9 | 5 |
| SCL2012T220KSP | 22 | 30 | 1 | 16 | 1.1 | 5 |
| SCL2012T270KSP | 27 | 30 | 1 | 14 | 1.15 | 5 |
| SCL2012T330KSP | 33 | 30 | 0.4 | 13 | 1.25 | 5 |
| SCL2012T390KSP | 39 | 35 | 2 | 8 | 2.9 | 4 |
| SCL2012T470KSP | 47 | 35 | 2 | 7.5 | 3.0 | 4 |
| SCL2012T560KSP | 56 | 35 | 2 | 7.0 | 3.1 | 4 |
| SCL2012T680KSP | 68 | 25 | 1 | 6.5 | 2.9 | 2 |
| SCL2012T820KSP | 82 | 25 | 1 | 6.0 | 3.0 | 2 |
| SCL2012T101KSP | 100 | 25 | 1 | 5.5 | 3.1 | 2 |
| | | | | | | |
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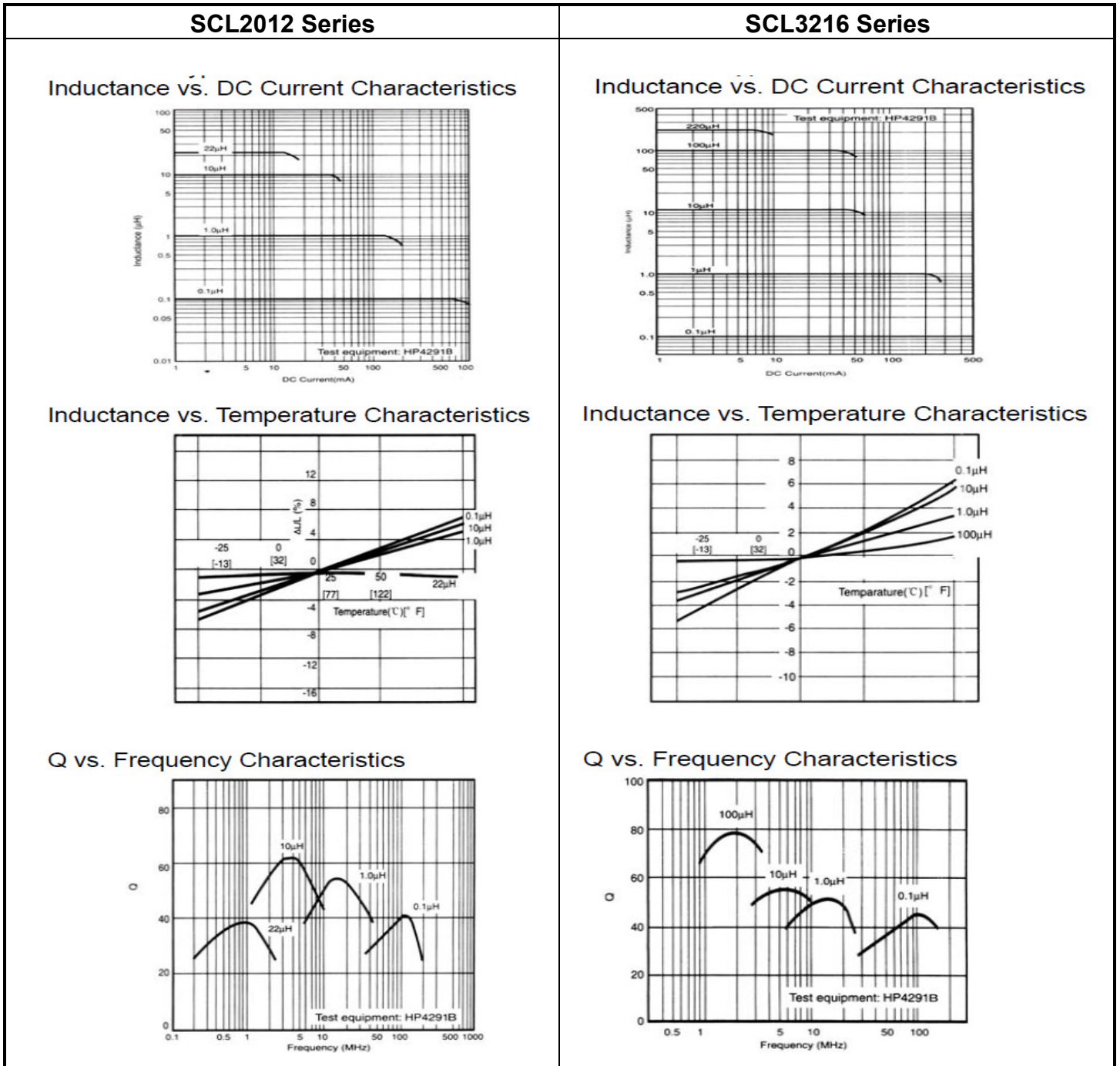
◆ Specifications

| Part Number | Inductance (μH) | Min. Quality Factor (Q) | L, Q Test Freq. L/Q Freq. (MHz) | Min. Self-resonant Frequency S.R.F.(MHz) | Max. DC Resistance DCR(Ω) | Max. Rated Current Ir(mA) |
|-----------------------|-----------------|-------------------------|---------------------------------|--|---------------------------|---------------------------|
| SCL3216 Series | | | | | | |
| SCL3216L47NKSP | 0.047 | 20 | 50 | 320 | 0.15 | 300 |
| SCL3216L68NKSP | 0.068 | 20 | 50 | 280 | 0.25 | 300 |
| SCL3216LR10KSP | 0.10 | 20 | 25 | 235 | 0.25 | 250 |
| SCL3216LR12KSP | 0.12 | 20 | 25 | 220 | 0.3 | 250 |
| SCL3216LR15KSP | 0.15 | 20 | 25 | 200 | 0.3 | 250 |
| SCL3216LR18KSP | 0.18 | 20 | 25 | 185 | 0.4 | 250 |
| SCL3216LR22KSP | 0.22 | 20 | 25 | 170 | 0.4 | 250 |
| SCL3216LR27KSP | 0.27 | 20 | 25 | 150 | 0.5 | 250 |
| SCL3216LR33KSP | 0.33 | 20 | 25 | 145 | 0.5 | 250 |
| SCL3216LR39KSP | 0.39 | 25 | 25 | 135 | 0.5 | 200 |
| SCL3216LR47KSP | 0.47 | 25 | 25 | 125 | 0.6 | 200 |
| SCL3216LR56KSP | 0.56 | 25 | 25 | 115 | 0.7 | 150 |
| SCL3216LR68KSP | 0.68 | 25 | 25 | 105 | 0.8 | 150 |
| SCL3216LR82KSP | 0.82 | 25 | 25 | 100 | 0.9 | 150 |
| SCL3216Q1R0KSP | 1.0 | 45 | 10 | 75 | 0.4 | 100 |
| SCL3216Q1R2KSP | 1.2 | 45 | 10 | 65 | 0.5 | 100 |
| SCL3216Q1R5KSP | 1.5 | 45 | 10 | 60 | 0.5 | 50 |
| SCL3216Q1R8KSP | 1.8 | 45 | 10 | 55 | 0.5 | 50 |
| SCL3216Q2R2KSP | 2.2 | 45 | 10 | 50 | 0.6 | 50 |
| SCL3216Q2R7KSP | 2.7 | 45 | 10 | 45 | 0.6 | 50 |
| SCL3216Q3R3KSP | 3.3 | 45 | 10 | 41 | 0.7 | 50 |
| SCL3216Q3R9KSP | 3.9 | 45 | 10 | 38 | 0.8 | 50 |
| SCL3216Q4R7KSP | 4.7 | 45 | 10 | 35 | 0.9 | 50 |
| SCL3216S5R6KSP | 5.6 | 50 | 4 | 32 | 0.7 | 25 |
| SCL3216S6R8KSP | 6.8 | 50 | 4 | 29 | 0.8 | 25 |
| SCL3216S8R2KSP | 8.2 | 50 | 4 | 26 | 0.9 | 25 |
| SCL3216S100KSP | 10 | 50 | 2 | 24 | 1 | 25 |
| SCL3216S120KSP | 12 | 50 | 2 | 22 | 1.05 | 15 |
| SCL3216T150KSP | 15 | 35 | 1 | 19 | 0.7 | 5 |
| SCL3216T180KSP | 18 | 35 | 1 | 18 | 0.7 | 5 |
| SCL3216T220KSP | 22 | 35 | 1 | 16 | 0.9 | 5 |
| SCL3216T270KSP | 27 | 35 | 1 | 14 | 0.9 | 5 |
| SCL3216T330KSP | 33 | 35 | 0.4 | 13 | 1.05 | 5 |
| SCL3216T390KSP | 39 | 40 | 2 | 11 | 3 | 5 |
| SCL3216T470KSP | 47 | 40 | 2 | 10 | 3.4 | 5 |

◆ TYPICAL ELECTRICAL CHARACTERISTICS



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◆ Package

| Size EIA (EIA) | 1005 (0402) | 1608 (0603) | 2012 (0805) | 3216(1206) |
|--|-------------|-------------|-------------|------------|
| Standard Packing Quantity (pcs / reel) | 10,000 | 4,000 | 4,000 | 4,000 |

◆ Reliability testing report (1)

| ITEM 项目 | Requirements 要求 | Test Conditions 测试条件 |
|--------------------------------------|---|--|
| Operating Temp 工作温度 | -25℃~125℃ | / |
| Storage Temp 储存温度 | -45~125℃ | / |
| Temperature & Humidity Test 温湿度测试 | 1、无机械损伤。No mechanical damage. 2、阻抗变化在±30%内，电感量变化在±10%内，Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 测试温度 (Test Temperature) : 85℃ 测试湿度 (Test Humidity) : 85%RH 测试持续时间 (Test Duration) : 144 hours |
| Thermal shock 热冲击 | 1、无机械损伤。No mechanical damage. 2、阻抗变化在±30%内，电感量变化在±10%内，Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 步骤 1 (Step 1) : -45±3℃ 30±3Min 步骤 2 (Step 2) : 125±3℃ 30±3Min 循环次数 (Number of cycle) : 100cycles |
| Low Temperature Test 低温测试 | 1、无机械损伤。No mechanical damage. 2、阻抗变化在±30%内，电感量变化在±10%内，Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 测试温度 (Test Temperature) : -55±2℃ 测试持续时间 (Test Duration) : 24 hours |
| High temperature test 高温测试 | 1、无机械损伤。No mechanical damage. 2、阻抗变化在±30%内，电感量变化在±10%内，Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 测试温度 (Test Temperature) : 125±2℃ 测试持续时间 (Test Duration) : 24 hours |
| Humidity load resistance 耐潮湿 | 1、无机械损伤。No mechanical damage. 2、阻抗变化在±30%内，电感量变化在±10%内，Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 通过额定电流，40±2℃，90~95%RH 下放置 500 小时后，置于室温下 24 小时后测试。 At 40±2℃,90~95%RH,load rated current for 500H,Measured at room amibient after 24H. |
| Resistance to solder heat 耐焊性 | 1、焊接过程中器件无破损。 No damage such as cracks should be caused in chip element. 2、至少有 75% 的端电极被焊锡覆盖。 More than 75% of terminal electrode shall be covered with mew solder. 3、阻抗变化在±30%内，电感量变化在±10%内，Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 预热温度 (Preheat temperature) : 100~150℃ 预热时间 (Preheat time) : 60sec 焊接温度 (Solder temperature) : 260±10℃ 浸焊时间 (Dipping time) : 10±0.5sec |
| Solder ability 可焊性 | 1、至少有 75% 的端电极被焊锡覆盖。 More than 75% of terminal electrode shall be covered with mew solder. 2、阻抗变化在±30%内，电感量变化在±10%内，Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 预热温度 (Preheat temperature) : 100~150℃ 预热时间 (Preheat time) : 60sec 焊接温度 (Solder temperature) : 260±10℃ 浸焊时间 (Dipping time) : 10±0.5sec |

◆ Reliability testing report (2)

| ITEM 项目 | Requirements 要求 | Test Conditions 测试条件 |
|---------------------------------|---|--|
| Reflow soldering 回流焊 | 1、至少有 50% 的端电极被焊锡覆盖。 More than 50% of the terminal electrode shall be covered with solder. | 预热温度 (Preheat temperature) : 50°C 预热时间 (Preheat time) : 60sec 焊接温度 (Solder temperature) : 260°C 浸焊时间 (Dipping time) : 10sec.MAX |
| Drop Test 跌落测试 | 1、无机械损伤。No mechanical damage. 2、阻抗变化在±30%内, 电感量变化在±10%内, Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 跌落高度 (Drop height) : 1m 跌落面 (Drop plane) : 混泥土水平面 |
| Vibration 抗震性 | 1、无机械损伤。No mechanical damage. 2、阻抗变化在±30%内, 电感量变化在±10%内, Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 频率 (Frequency) : 10Hz~55Hz~10Hz 振幅 (Amplitude) : 1.52mm 方向和时间: X/Y/Z 各震动 2 小时, 共计 6 小时 Direction&time: 2H/axis,total 6 hour |
| Mechanical shock test 机械冲击测试 | 1、无机械损伤。No mechanical damage. 2、阻抗变化在±30%内, 电感量变化在±10%内, Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 脉冲波形 (Pulse shape) : 半正弦波 half-sine Waveform 加速度 (Acceleration) : 100g 脉冲持续时间 (Pulse Duration) : 11ms 脉冲方向 (Shock direction) : ±X,±Y,±Z axis 脉冲次数 (Shock times) : 3 次/方向 3times/direction |
| Salt Spraying Test 盐雾测试 | 1、表面无氧化: No surface oxidation. 2、阻抗变化在±30%内, 电感量变化在±10%内, Q 值变化在±30%内。 Impedance change within±30%;Inductance change within±10%;Quality factor change within±30%; | 实验介质 (Testing Medium) : 5%氯化钠溶液 5% Sodium Chloride Solution 实验温度 (Testing Temperature) : 35±2°C 实验持续时间 (Testing Duration) : 20hours |

单击下面可查看定价，库存，交付和生命周期等信息

[>>Sunltech\(韩国顺磁\)](#)