

Multilayer Chip Ceramic Inductor – SDCL-D Series

Operating Temp. : -55°C~+125°C



FEATURES

- Monolithic structure for high reliability
- High self-resonant frequency
- Excellent solderability and high heat resistance

APPLICATIONS

- RF circuit in telecommunication and other equipments

PRODUCT IDENTIFICATION

SDCL

①

①

| Type | |
|------|-----------------------|
| SDCL | Chip Ceramic Inductor |

1608

②

C

③

| External Dimensions (L×W) (mm) | |
|--------------------------------|---------|
| 1005 [0402] | 1.0×0.5 |
| 1608 [0603] | 1.6×0.8 |

10N

④

④

| Nominal Inductance | |
|-------------------------|---------------|
| Example | Nominal Value |
| 3N9 | 3.9nH |
| 10N | 10nH |
| R10 | 100nH |
| ※R= decimal point, N=nH | |

J

⑤

| Inductance Tolerance | |
|----------------------|--------|
| B | ±0.1nH |
| C | ±0.2nH |
| S | ±0.3nH |
| H | ±3% |
| J | ±5% |
| K | ±10% |

T

⑥

| Material Code | |
|---------------|--|
| C | |

⑥

| Packing | |
|---------|-------------|
| T | Tape & Reel |

⑦

| Internal Code | |
|---------------|--|
| D | |

⑧

| Hazardous Substance Free Products | |
|-----------------------------------|--|
| F | |

SHAPE AND DIMENSIONS

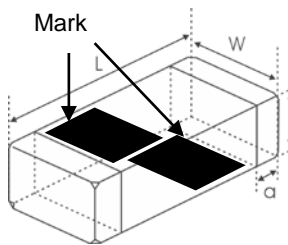


Fig.1

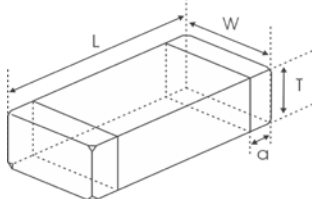


Fig.2

Unit: mm [inch]

| Type | L | W | T | a | ≤10nH | ≥12nH |
|--------------------|--------------------------|-------------------------|-------------------------|-------------------------|-------|-------|
| SDCL1005 [0402] | 1.0±0.15 [.039±.006] | 0.5±0.15 [.020±.006] | 0.5±0.15 [.020±.006] | 0.25±0.1 [.010±.004] | Fig.1 | Fig.2 |
| SDCL1608 [0603] | 1.6±0.15 [.063±.006] | 0.8±0.15 [.031±.006] | 0.8±0.15 [.031±.006] | 0.3±0.2 [.012±.008] | Fig.2 | Fig.2 |
| | 1.65±0.15 [.065±.006] | | | | | |

SPECIFICATIONS

SDCL1005-D Series

| Part Number | Inductance | Min. Quality Factor | L,Q Test Freq. L/Q | Typical Q @ Freq. (MHz) | | | Min. Self-resonant Frequency | Max. DC Resistance | Max. Rated Current |
|------------------|------------|---------------------|--------------------|-------------------------|-----|------|------------------------------|--------------------|--------------------|
| | | | | 100 | 800 | 1000 | | | |
| Units | nH | - | MHz | - | | | MHz | Ω | mA |
| Symbol | L | Q | Freq | Q | | | S.R.F | DCR | I _r |
| SDCL1005C0N6□TDF | 0.6 | 4 | 100 | 6 | 35 | 41 | 10000 | 0.10 | 800 |
| SDCL1005C1N0□TDF | 1.0 | 8 | 100 | 11 | 34 | 36 | 10000 | 0.10 | 400 |
| SDCL1005C1N1□TDF | 1.1 | 8 | 100 | 11 | 34 | 36 | 10000 | 0.10 | 400 |
| SDCL1005C1N2□TDF | 1.2 | 8 | 100 | 11 | 34 | 36 | 10000 | 0.10 | 400 |
| SDCL1005C1N3□TDF | 1.3 | 8 | 100 | 11 | 34 | 36 | 10000 | 0.10 | 400 |
| SDCL1005C1N5□TDF | 1.5 | 8 | 100 | 11 | 34 | 36 | 6000 | 0.10 | 300 |
| SDCL1005C1N6□TDF | 1.6 | 8 | 100 | 11 | 32 | 35 | 6000 | 0.10 | 300 |
| SDCL1005C1N8□TDF | 1.8 | 8 | 100 | 11 | 30 | 34 | 6000 | 0.10 | 300 |
| SDCL1005C2N0□TDF | 2.0 | 8 | 100 | 10 | 29 | 33 | 6000 | 0.20 | 300 |
| SDCL1005C2N2□TDF | 2.2 | 8 | 100 | 10 | 29 | 33 | 6000 | 0.20 | 300 |
| SDCL1005C2N4□TDF | 2.4 | 8 | 100 | 10 | 29 | 32 | 6000 | 0.20 | 300 |
| SDCL1005C2N7□TDF | 2.7 | 8 | 100 | 10 | 29 | 32 | 6000 | 0.20 | 300 |
| SDCL1005C3N0□TDF | 3.0 | 8 | 100 | 10 | 29 | 32 | 6000 | 0.20 | 300 |
| SDCL1005C3N3□TDF | 3.3 | 8 | 100 | 10 | 29 | 32 | 6000 | 0.20 | 300 |
| SDCL1005C3N6□TDF | 3.6 | 8 | 100 | 10 | 28 | 31 | 4000 | 0.20 | 300 |
| SDCL1005C3N9□TDF | 3.9 | 8 | 100 | 10 | 28 | 31 | 4000 | 0.20 | 300 |
| SDCL1005C4N3□TDF | 4.3 | 8 | 100 | 10 | 28 | 31 | 4000 | 0.20 | 300 |
| SDCL1005C4N7□TDF | 4.7 | 8 | 100 | 10 | 28 | 31 | 4000 | 0.20 | 300 |
| SDCL1005C5N1□TDF | 5.1 | 8 | 100 | 10 | 28 | 30 | 4000 | 0.30 | 300 |
| SDCL1005C5N6□TDF | 5.6 | 8 | 100 | 10 | 28 | 30 | 4000 | 0.30 | 300 |
| SDCL1005C6N2□TDF | 6.2 | 8 | 100 | 10 | 27 | 30 | 3900 | 0.30 | 300 |
| SDCL1005C6N8□TDF | 6.8 | 8 | 100 | 10 | 27 | 30 | 3900 | 0.30 | 300 |
| SDCL1005C7N5□TDF | 7.5 | 8 | 100 | 10 | 27 | 30 | 3700 | 0.40 | 300 |
| SDCL1005C8N2□TDF | 8.2 | 8 | 100 | 10 | 27 | 30 | 3600 | 0.40 | 300 |
| SDCL1005C9N1□TDF | 9.1 | 8 | 100 | 10 | 27 | 30 | 3400 | 0.40 | 300 |
| SDCL1005C10N□TDF | 10 | 8 | 100 | 10 | 27 | 30 | 3200 | 0.40 | 300 |
| SDCL1005C12N□TDF | 12 | 8 | 100 | 10 | 26 | 29 | 2700 | 0.50 | 300 |
| SDCL1005C15N□TDF | 15 | 8 | 100 | 10 | 26 | 28 | 2300 | 0.50 | 300 |
| SDCL1005C18N□TDF | 18 | 8 | 100 | 10 | 25 | 27 | 2100 | 0.60 | 300 |
| SDCL1005C20N□TDF | 20 | 8 | 100 | 10 | 25 | 26 | 2000 | 0.60 | 300 |
| SDCL1005C22N□TDF | 22 | 8 | 100 | 10 | 25 | 25 | 1900 | 0.60 | 300 |
| SDCL1005C27N□TDF | 27 | 8 | 100 | 10 | 25 | 23 | 1600 | 0.70 | 300 |
| SDCL1005C33N□TDF | 33 | 8 | 100 | 10 | 22 | 22 | 1300 | 0.80 | 200 |
| SDCL1005C39N□TDF | 39 | 8 | 100 | 10 | 22 | 19 | 1200 | 1.00 | 200 |
| SDCL1005C43N□TDF | 43 | 8 | 100 | 10 | 21 | 16 | 1100 | 1.10 | 200 |
| SDCL1005C47N□TDF | 47 | 8 | 100 | 10 | 21 | 16 | 1000 | 1.10 | 200 |
| SDCL1005C56N□TDF | 56 | 8 | 100 | 10 | 18 | 13 | 750 | 1.20 | 200 |
| SDCL1005C68N□TDF | 68 | 8 | 100 | 10 | 18 | 9 | 750 | 1.40 | 180 |
| SDCL1005C82N□TDF | 82 | 8 | 100 | 10 | 13 | - | 750 | 2.40 | 150 |
| SDCL1005CR10□TDF | 100 | 8 | 100 | 10 | 12 | - | 700 | 2.60 | 150 |
| SDCL1005CR12□TDF | 120 | 8 | 100 | 10 | - | - | 600 | 2.80 | 150 |
| SDCL1005CR15□TDF | 150 | 8 | 100 | 10 | - | - | 550 | 3.20 | 100 |
| SDCL1005CR18□TDF | 180 | 8 | 100 | 10 | - | - | 500 | 3.70 | 100 |
| SDCL1005CR22□TDF | 220 | 8 | 100 | 12 | - | - | 450 | 4.00 | 100 |
| SDCL1005CR27□TDF | 270 | 8 | 100 | 12 | - | - | 400 | 4.50 | 100 |
| SDCL1005CR30□TDF | 300 | 8 | 100 | 12 | - | - | 400 | 4.50 | 100 |
| SDCL1005CR33□TDF | 330 | 6 | 50 | 8 | - | - | 350 | 7.00 | 50 |
| SDCL1005CR36□TDF | 360 | 6 | 50 | 8 | - | - | 300 | 7.50 | 50 |

※ □: Please specify the inductance tolerance. For L≤6.2nH, choose B=±0.1nH, C=±0.2nH or S=±0.3nH; For L>6.2nH, choose H=±3%, J=±5% or K=±10%.

※: Please refer to "Measurement Notice For RF Inductors".

SPECIFICATIONS

SDCL1608-D Series

| Part Number | Inductance | Min. Quality Factor | L,Q Test Freq. L/Q | Typical Q @ Freq. (MHz) | | | Min. Self-resonant Frequency | Max. DC Resistance | Max. Rated Current |
|-------------------|------------|---------------------|--------------------|-------------------------|-----|------|------------------------------|--------------------|--------------------|
| | | | | 100 | 800 | 1000 | | | |
| Units | nH | - | MHz | - | | | MHz | Ω | mA |
| Symbol | L | Q | Freq | Q | | | S.R.F | DCR | I _r |
| SDCL1608C1N0□TDF | 1.0 | 8 | 100 | 13 | 70 | 80 | 10000 | 0.05 | 500 |
| SDCL1608C1N2□TDF | 1.2 | 8 | 100 | 13 | 60 | 70 | 10000 | 0.05 | 500 |
| SDCL1608C1N5□TDF | 1.5 | 8 | 100 | 13 | 47 | 68 | 6000 | 0.10 | 500 |
| SDCL1608C1N8□TDF | 1.8 | 8 | 100 | 13 | 45 | 61 | 6000 | 0.10 | 500 |
| SDCL1608C2N2□TDF | 2.2 | 8 | 100 | 13 | 45 | 60 | 6000 | 0.10 | 500 |
| SDCL1608C2N7□TDF | 2.7 | 10 | 100 | 13 | 44 | 55 | 6000 | 0.12 | 500 |
| SDCL1608C3N3□TDF | 3.3 | 10 | 100 | 13 | 43 | 50 | 6000 | 0.15 | 500 |
| SDCL1608C3N9□TDF | 3.9 | 10 | 100 | 13 | 43 | 50 | 6000 | 0.16 | 500 |
| SDCL1608C4N7□TDF | 4.7 | 10 | 100 | 13 | 43 | 50 | 6000 | 0.20 | 500 |
| SDCL1608C5N6□TDF | 5.6 | 10 | 100 | 14 | 42 | 48 | 5000 | 0.25 | 500 |
| SDCL1608C6N8□TDF | 6.8 | 10 | 100 | 14 | 43 | 50 | 5000 | 0.30 | 500 |
| SDCL1608C8N2□TDF | 8.2 | 10 | 100 | 14 | 43 | 48 | 4500 | 0.35 | 500 |
| SDCL1608C10N□TDF | 10 | 12 | 100 | 15 | 45 | 50 | 3500 | 0.40 | 300 |
| SDCL1608C12N□TDF | 12 | 12 | 100 | 18 | 48 | 50 | 3000 | 0.45 | 300 |
| SDCL1608C15N□TDF | 15 | 12 | 100 | 18 | 48 | 50 | 2300 | 0.50 | 300 |
| SDCL1608C18N□TDF | 18 | 12 | 100 | 16 | 48 | 51 | 2200 | 0.55 | 300 |
| SDCL1608C22N□TDF | 22 | 12 | 100 | 16 | 45 | 48 | 2000 | 0.60 | 300 |
| SDCL1608C27N□TDF | 27 | 12 | 100 | 16 | 45 | 45 | 1700 | 0.65 | 300 |
| SDCL1608C33N□TDF | 33 | 12 | 100 | 16 | 45 | 41 | 1500 | 0.70 | 300 |
| SDCL1608C39N□TDF | 39 | 12 | 100 | 17 | 40 | 48 | 1400 | 0.70 | 300 |
| SDCL1608C47N□TDF | 47 | 12 | 100 | 17 | 35 | 35 | 1200 | 0.70 | 300 |
| SDCL1608C56N□TDF | 56 | 12 | 100 | 17 | 35 | 30 | 1100 | 0.75 | 300 |
| SDCL1608C68N□TDF | 68 | 12 | 100 | 17 | 30 | 20 | 900 | 0.85 | 300 |
| SDCL1608C82N□TDF | 82 | 8 | 100 | 15 | 22 | - | 800 | 1.00 | 300 |
| SDCL1608CR10□TDF | 100 | 8 | 100 | 15 | 16 | - | 700 | 1.20 | 300 |
| SDCL1608CR12□TDF* | 120 | 8 | 50 | 15 | - | - | 600 | 1.40 | 200 |
| SDCL1608CR15□TDF* | 150 | 8 | 50 | 15 | - | - | 500 | 1.60 | 200 |
| SDCL1608CR18□TDF* | 180 | 8 | 50 | 15 | - | - | 400 | 1.90 | 200 |
| SDCL1608CR22□TDF* | 220 | 8 | 50 | 15 | - | - | 350 | 2.40 | 200 |
| SDCL1608CR27□TDF* | 270 | 8 | 50 | 16 | - | - | 350 | 2.60 | 150 |
| SDCL1608CR33□TDF* | 330 | 8 | 50 | 16 | - | - | 350 | 2.80 | 150 |
| SDCL1608CR39□TDF* | 390 | 8 | 50 | 16 | - | - | 300 | 3.20 | 150 |
| SDCL1608CR43□TDF* | 430 | 8 | 50 | 16 | - | - | 280 | 3.40 | 150 |
| SDCL1608CR47□TDF* | 470 | 8 | 50 | 15 | - | - | 250 | 3.60 | 150 |
| SDCL1608CR56□TDF* | 560 | 8 | 50 | 15 | - | - | 250 | 4.00 | 100 |
| SDCL1608CR68□TDF* | 680 | 8 | 50 | 15 | - | - | 250 | 4.50 | 100 |

※ □: Please specify the inductance tolerance. For $L \leq 6.2\text{nH}$, choose $B = \pm 0.1\text{nH}$, $C = \pm 0.2\text{nH}$ or $S = \pm 0.3\text{nH}$; For $L > 6.2\text{nH}$, choose $H = \pm 3\%$, $J = \pm 5\%$ or $K = \pm 10\%$.

※ *: The length: $1.65 \pm 0.15\text{mm}$, for others: $1.60 \pm 0.15\text{mm}$

※: Please refer to "Measurement Notice For RF Inductors".

TYPICAL ELECTRICAL CHARACTERISTICS

SDCL1005-D Series

Inductance vs. Frequency Characteristics



Q vs. Frequency Characteristics



SDCL1608-D Series

Inductance vs. Frequency Characteristics



Q vs. Frequency Characteristics



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