

**Features:**

- Provides magnetic shielding against radiation
- Available on tape and reel for auto surface mounting
- Contact factory for inductance values outside those listed in the datasheet
- Find environmental information and packaging specification in related supplemental documents

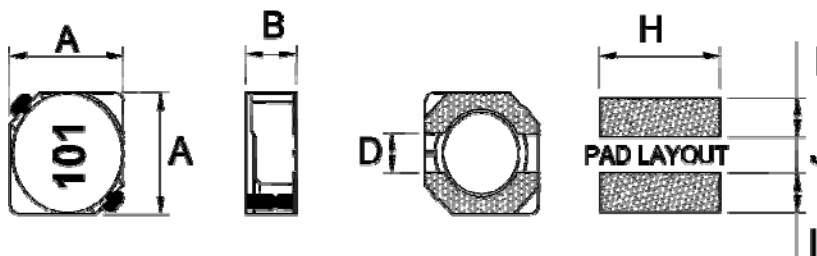


**Applications:**

- Power supply for VTRs
- Notebook PCs
- DC/DC converters
- OA equipment
- Portable communication devices

| Inductance and Current Ranges |                       |                    |
|-------------------------------|-----------------------|--------------------|
| Type                          | Inductance ( $\mu$ H) | Current Ranges (A) |
| SCDS3D18                      | 1.5 ~ 220             | 1.55 ~ 0.13        |
| SCDS4D18                      | 1.0 ~ 180             | 1.72 ~ 0.14        |
| SCDS4D22                      | 1.5 ~ 150             | 2.00 ~ 0.21        |
| SCDS4D28                      | 1.2 ~ 180             | 2.56 ~ 0.22        |
| SCDS5D18                      | 4.1 ~ 470             | 1.95 ~ 0.18        |
| SCDS5D28                      | 2.2 ~ 100             | 2.60 ~ 0.42        |
| SCDS6D28                      | 1.0 ~ 330             | 6.15 ~ 0.35        |
| SCDS6D38                      | 3.3 ~ 330             | 3.50 ~ 0.39        |

| How to Order   |                    |            |   |           |     |           |               |                                    |          |            |             |    |
|----------------|--------------------|------------|---|-----------|-----|-----------|---------------|------------------------------------|----------|------------|-------------|----|
| 1              | 2                  | 3          | 4 | 5         | 6   | 7         | 8             | 9                                  | 10       | 11         | 12          | 13 |
| S              | C                  | D          | S | 3         | D   | 1         | 8             | N                                  | T        | 1          | 0           | 1  |
| Product Series |                    | Dimensions |   | Tolerance |     | Packaging |               |                                    |          | Inductance |             |    |
| SCDS           | SMD Power Inductor | Code       |   | Code      | Tol | Code      | Description   | Size                               | Quantity | Code       | Induct      |    |
|                |                    | 3D18       |   | M         | 20% | T         | Tape and Reel | 3D18, 4D18, 4D22, 4D28, 5D18, 5D28 | 2,000    | 1R1        | 1.1 $\mu$ H |    |
|                |                    | 4D18       |   | N         | 30% |           |               | 6D28                               | 1,500    | 470        | 47 $\mu$ H  |    |
|                |                    | 4D22       |   |           |     |           |               | 6D38                               | 1,000    | 101        | 100 $\mu$ H |    |
|                |                    | 4D28       |   |           |     |           |               |                                    |          |            |             |    |
|                |                    | 5D18       |   |           |     |           |               |                                    |          |            |             |    |
|                |                    | 5D28       |   |           |     |           |               |                                    |          |            |             |    |
|                |                    | 6D28       |   |           |     |           |               |                                    |          |            |             |    |
|                |                    | 6D38       |   |           |     |           |               |                                    |          |            |             |    |



| Mechanical Specifications |                            |               |               |               |               |               |              |
|---------------------------|----------------------------|---------------|---------------|---------------|---------------|---------------|--------------|
| Type / Code               | A                          | B             | D             | H             | I             | J             | Units        |
| SCDS3D18                  | 0.150 ± 0.012<br>3.8 ± 0.3 | 0.071<br>1.80 | 0.045<br>1.15 | 0.161<br>4.10 | 0.063<br>1.60 | 0.047<br>1.20 | inches<br>mm |
| SCDS4D18                  | 0.185 ± 0.012<br>4.7 ± 0.3 | 0.079<br>2.00 | 0.059<br>1.50 | 0.209<br>5.30 | 0.069<br>1.75 | 0.059<br>1.50 | inches<br>mm |
| SCDS4D22                  | 0.185 ± 0.012<br>4.7 ± 0.3 | 0.094<br>2.40 | 0.059<br>1.50 | 0.209<br>5.30 | 0.075<br>1.90 | 0.059<br>1.50 | inches<br>mm |
| SCDS4D28                  | 0.185 ± 0.012<br>4.7 ± 0.3 | 0.118<br>3.00 | 0.059<br>1.50 | 0.209<br>5.30 | 0.075<br>1.90 | 0.059<br>1.50 | inches<br>mm |
| SCDS5D18                  | 0.224 ± 0.012<br>5.7 ± 0.3 | 0.079<br>2.00 | 0.079<br>2.00 | 0.248<br>6.30 | 0.085<br>2.15 | 0.079<br>2.00 | inches<br>mm |
| SCDS5D28                  | 0.224 ± 0.012<br>5.7 ± 0.3 | 0.118<br>3.00 | 0.079<br>2.00 | 0.248<br>6.30 | 0.085<br>2.15 | 0.079<br>2.00 | inches<br>mm |
| SCDS6D28                  | 0.264 ± 0.012<br>6.7 ± 0.3 | 0.118<br>3.00 | 0.079<br>2.00 | 0.287<br>7.30 | 0.104<br>2.65 | 0.079<br>2.00 | inches<br>mm |
| SCDS6D38                  | 0.264 ± 0.012<br>6.7 ± 0.3 | 0.157<br>4.00 | 0.079<br>2.00 | 0.287<br>7.30 | 0.104<br>2.65 | 0.079<br>2.00 | inches<br>mm |

| Electrical Specifications |        |           |                      |               |                       |       |       |       |              |      |      |      |
|---------------------------|--------|-----------|----------------------|---------------|-----------------------|-------|-------|-------|--------------|------|------|------|
| Codes                     | L (uH) | Tolerance | Test Condition       |               | DCR ( $\Omega$ ) max. |       |       |       | IDC (A) max. |      |      |      |
|                           |        |           | 3D18<br>4D22<br>4D28 | 4D18          | 3D18                  | 4D18  | 4D22  | 4D28  | 3D18         | 4D18 | 4D22 | 4D28 |
| 1R0                       | 1.0    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | -                     | 0.045 | -     | -     | -            | 1.72 | -    | -    |
| 1R2                       | 1.2    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | -                     | -     | -     | 0.024 | -            | -    | -    | 2.56 |
| 1R5                       | 1.5    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | 0.056                 | -     | 0.018 | -     | 1.55         | -    | 2.00 | -    |
| 1R8                       | 1.8    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | -                     | -     | 0.021 | 0.028 | -            | -    | 1.90 | 2.20 |
| 2R2                       | 2.2    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | 0.072                 | 0.075 | 0.025 | 0.031 | 1.20         | 1.32 | 1.80 | 2.04 |
| 2R7                       | 2.7    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | -                     | 0.105 | -     | 0.043 | -            | 1.28 | -    | 1.60 |
| 3R3                       | 3.3    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | 0.085                 | 0.110 | 0.035 | 0.049 | 1.10         | 1.04 | 1.40 | 1.57 |
| 3R9                       | 3.9    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | -                     | 0.155 | 0.040 | 0.065 | -            | 0.88 | 1.30 | 1.44 |
| 4R7                       | 4.7    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | 0.105                 | 0.162 | 0.056 | 0.072 | 0.90         | 0.84 | 1.10 | 1.32 |
| 5R6                       | 5.6    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | -                     | 0.170 | 0.062 | 0.101 | -            | 0.80 | 1.05 | 1.17 |
| 6R8                       | 6.8    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | 0.170                 | 0.200 | 0.088 | 0.109 | 0.73         | 0.76 | 1.00 | 1.12 |
| 8R2                       | 8.2    | N         | 100KHz, 0.1V         | 7.96MHz, 0.1V | -                     | 0.245 | 0.097 | 0.118 | -            | 0.68 | 0.90 | 1.04 |
| 100                       | 10     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 0.210                 | 0.200 | 0.102 | 0.128 | 0.55         | 0.61 | 0.80 | 1.00 |
| 120                       | 12     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | -                     | 0.210 | 0.110 | 0.132 | -            | 0.56 | 0.75 | 0.84 |
| 150                       | 15     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 0.295                 | 0.240 | 0.127 | 0.149 | 0.45         | 0.50 | 0.68 | 0.76 |
| 180                       | 18     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | -                     | 0.338 | 0.169 | 0.166 | -            | 0.48 | 0.60 | 0.72 |
| 220                       | 22     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 0.430                 | 0.397 | 0.200 | 0.235 | 0.40         | 0.41 | 0.54 | 0.70 |
| 270                       | 27     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 0.557                 | 0.441 | 0.283 | 0.261 | 0.38         | 0.35 | 0.51 | 0.58 |
| 330                       | 33     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 0.675                 | 0.694 | 0.326 | 0.378 | 0.32         | 0.32 | 0.48 | 0.56 |
| 390                       | 39     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | -                     | 0.709 | 0.451 | 0.384 | -            | 0.30 | 0.43 | 0.50 |
| 470                       | 47     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 0.900                 | 0.922 | 0.500 | 0.587 | 0.21         | 0.28 | 0.38 | 0.48 |
| 560                       | 56     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 1.330                 | 1.080 | 0.555 | 0.625 | 0.22         | 0.26 | 0.36 | 0.41 |
| 680                       | 68     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | -                     | 1.300 | 0.634 | 0.699 | -            | 0.24 | 0.33 | 0.35 |
| 820                       | 82     | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | -                     | 1.560 | 0.794 | 0.915 | -            | 0.22 | 0.30 | 0.32 |
| 101                       | 100    | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 2.600                 | 1.730 | 0.880 | 1.020 | 0.16         | 0.20 | 0.25 | 0.29 |
| 121                       | 120    | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | -                     | 2.390 | 1.140 | 1.270 | -            | 0.18 | 0.23 | 0.27 |
| 151                       | 150    | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | -                     | 2.670 | 1.350 | 1.360 | -            | 0.15 | 0.21 | 0.24 |
| 181                       | 180    | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | -                     | 4.000 | -     | 1.540 | -            | 0.14 | -    | 0.22 |
| 221                       | 220    | N         | 100KHz, 0.1V         | 100KHz, 0.1V  | 4.770                 | -     | -     | -     | 0.13         | -    | -    | -    |

| Electrical Specifications |        |                      |      |                |                       |       |       |       |              |      |      |      |
|---------------------------|--------|----------------------|------|----------------|-----------------------|-------|-------|-------|--------------|------|------|------|
| Codes                     | L (uH) | Tolerance            |      | Test Condition | DCR ( $\Omega$ ) max. |       |       |       | IDC (A) max. |      |      |      |
|                           |        | 5D18<br>5D28<br>6D28 | 6D38 |                | 5D18                  | 5D28  | 6D28  | 6D38  | 5D18         | 5D28 | 6D28 | 6D38 |
| 1R0                       | 1.0    | N                    | -    | 10KHz, 0.1V    | -                     | -     | 0.012 | -     | -            | -    | 6.15 | -    |
| 2R2                       | 2.2    | N                    | -    | 10KHz, 0.1V    | -                     | 0.018 | 0.018 | -     | -            | 2.60 | 4.80 | -    |
| 2R6                       | 2.6    | N                    | -    | 10KHz, 0.1V    | -                     | 0.018 | -     | -     | -            | 2.60 | -    | -    |
| 3R0                       | 3.0    | N                    | -    | 10KHz, 0.1V    | -                     | 0.024 | 0.024 | -     | -            | 2.40 | 3.00 | -    |
| 3R3                       | 3.3    | N                    | M, N | 10KHz, 0.1V    | -                     | -     | 0.026 | 0.020 | -            | -    | 2.80 | 3.50 |
| 3R9                       | 3.9    | N                    | -    | 10KHz, 0.1V    | -                     | -     | 0.027 | -     | -            | -    | 2.60 | -    |
| 4R1                       | 4.1    | N                    | -    | 10KHz, 0.1V    | 0.057                 | -     | -     | -     | 1.95         | -    | -    | -    |
| 4R2                       | 4.2    | N                    | -    | 10KHz, 0.1V    | -                     | 0.031 | -     | -     | -            | 2.20 | -    | -    |
| 4R7                       | 4.7    | N                    | -    | 10KHz, 0.1V    | 0.072                 | 0.037 | 0.029 | -     | 1.77         | 2.00 | 2.50 | -    |
| 5R0                       | 5.0    | N                    | M, N | 10KHz, 0.1V    | -                     | -     | 0.031 | 0.024 | -            | -    | 2.40 | 2.90 |
| 5R3                       | 5.3    | N                    | -    | 10KHz, 0.1V    | -                     | 0.038 | 0.033 | -     | -            | 1.90 | 2.30 | -    |
| 5R4                       | 5.4    | N                    | -    | 10KHz, 0.1V    | 0.076                 | -     | -     | -     | 1.60         | -    | -    | -    |
| 5R6                       | 5.6    | N                    | -    | 10KHz, 0.1V    | -                     | 0.40  | -     | -     | -            | 1.85 | -    | -    |
| 6R0                       | 6.0    | N                    | -    | 10KHz, 0.1V    | -                     | -     | 0.035 | -     | -            | -    | 2.25 | -    |
| 6R2                       | 6.2    | N                    | M, N | 10KHz, 0.1V    | 0.096                 | 0.045 | -     | 0.027 | 1.40         | 1.80 | -    | 2.50 |
| 6R8                       | 6.8    | N                    | -    | 10KHz, 0.1V    | 0.110                 | 0.050 | 0.052 | -     | 1.30         | 1.82 | 2.20 | -    |
| 7R3                       | 7.3    | N                    | -    | 10KHz, 0.1V    | -                     | -     | 0.054 | -     | -            | -    | 2.10 | -    |
| 7R4                       | 7.4    | N                    | M, N | 10KHz, 0.1V    | -                     | -     | -     | 0.031 | -            | -    | -    | 2.30 |
| 8R2                       | 8.2    | N                    | -    | 10KHz, 0.1V    | -                     | 0.053 | -     | -     | -            | 1.60 | -    | -    |
| 8R6                       | 8.6    | N                    | -    | 10KHz, 0.1V    | -                     | -     | 0.058 | -     | -            | -    | 1.85 | -    |
| 8R7                       | 8.7    | N                    | M, N | 10KHz, 0.1V    | -                     | -     | -     | 0.034 | -            | -    | -    | 2.20 |
| 8R9                       | 8.9    | N                    | -    | 10KHz, 0.1V    | 0.116                 | -     | -     | -     | 1.25         | -    | -    | -    |
| 100                       | 10     | N                    | M, N | 10KHz, 0.1V    | 0.124                 | 0.065 | 0.065 | 0.038 | 1.20         | 1.30 | 1.70 | 2.00 |
| 120                       | 12     | N                    | M, N | 10KHz, 0.1V    | 0.153                 | 0.076 | 0.070 | 0.053 | 1.10         | 1.20 | 1.55 | 1.70 |
| 150                       | 15     | N                    | M, N | 10KHz, 0.1V    | 0.196                 | 0.103 | 0.084 | 0.057 | 0.97         | 1.10 | 1.40 | 1.60 |
| 180                       | 18     | N                    | M, N | 10KHz, 0.1V    | 0.210                 | 0.110 | 0.095 | 0.092 | 0.85         | 1.00 | 1.32 | 1.50 |
| 220                       | 22     | N                    | M, N | 10KHz, 0.1V    | 0.290                 | 0.122 | 0.128 | 0.096 | 0.80         | 0.90 | 1.20 | 1.30 |
| 270                       | 27     | N                    | M, N | 10KHz, 0.1V    | 0.330                 | 0.175 | 0.142 | 0.109 | 0.75         | 0.85 | 1.05 | 1.20 |
| 330                       | 33     | N                    | M, N | 10KHz, 0.1V    | 0.386                 | 0.189 | 0.165 | 0.124 | 0.65         | 0.75 | 0.97 | 1.10 |
| 390                       | 39     | N                    | M, N | 10KHz, 0.1V    | 0.520                 | 0.212 | 0.210 | 0.138 | 0.57         | 0.70 | 0.86 | 1.00 |
| 470                       | 47     | N                    | M, N | 10KHz, 0.1V    | 0.595                 | 0.260 | 0.238 | 0.155 | 0.54         | 0.62 | 0.80 | 0.95 |
| 560                       | 56     | N                    | M, N | 10KHz, 0.1V    | 0.665                 | 0.305 | 0.277 | 0.202 | 0.50         | 0.58 | 0.73 | 0.85 |
| 680                       | 68     | N                    | M, N | 10KHz, 0.1V    | 0.840                 | 0.355 | 0.304 | 0.234 | 0.43         | 0.52 | 0.65 | 0.75 |
| 820                       | 82     | N                    | M, N | 10KHz, 0.1V    | 0.978                 | 0.463 | 0.390 | 0.324 | 0.41         | 0.46 | 0.60 | 0.70 |
| 101                       | 100    | N                    | M, N | 10KHz, 0.1V    | 1.200                 | 0.520 | 0.535 | 0.368 | 0.36         | 0.42 | 0.54 | 0.65 |
| 151                       | 150    | N                    | -    | 10KHz, 0.1V    | 2.000                 | -     | -     | -     | 0.25         | -    | -    | -    |
| 221                       | 220    | N                    | -    | 10KHz, 0.1V    | 3.280                 | -     | 1.350 | -     | 0.20         | -    | 0.45 | -    |
| 331                       | 330    | N                    | M, N | 10KHz, 0.1V    | -                     | -     | 2.000 | 1.250 | -            | -    | 0.35 | 0.39 |
| 471                       | 470    | N                    | -    | 10KHz, 0.1V    | 6.560                 | -     | -     | -     | 0.18         | -    | -    | -    |

| Performance Characteristics        |                                                                                |                                                                                                                                                           |
|------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item                               | Specification                                                                  | Test Conditions / Test Methods                                                                                                                            |
| Shelf storage conditions           | Temperature range: 25±3°C; Humidity < 80% relative humidity                    |                                                                                                                                                           |
|                                    | Recommended product should be used within six months from the time of delivery |                                                                                                                                                           |
| Storage temperature range          | Temperature range: -40°C to +85°C                                              |                                                                                                                                                           |
| High temperature storage test      | No case deformation or change in appearance. $\Delta L/L \leq 10\%$            | Temperature 85±2°C<br>Time: 48±2 hours<br>Tested after 1 hour at room temperature                                                                         |
| Low temperature storage test       |                                                                                | Temperature -25±2°C<br>Time: 48±2 hours<br>Tested after 1 hour at room temperature                                                                        |
| Humidity test                      |                                                                                | Temperature 40±2°C, 90~95% relative humidity<br>Time: 96±2 hours, apply rated current<br>Tested after 1 hour at room temperature                          |
| Thermal shock test                 |                                                                                | First -25°C 30 minutes then 25°C 10 minutes, 85°C 30 minutes, as 1 cycle. Go through 5 cycles.<br>Tested after 1 hour at room temperature                 |
| Solderability test                 | Terminal area must have 90% minimum solder coverage                            | Dip pads in flux then dip in solder pot (SnCuNi) at 245±5°C for 3 seconds                                                                                 |
| Heat endurance of reflow soldering | No case deformation or change in appearance. $\Delta L/L \leq 10\%$            | Refer to the reflow soldering condition.<br>Go through 3 times.                                                                                           |
| Vibration test                     |                                                                                | Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours                                                                   |
| Shock resistance                   |                                                                                | Drop down with 981m/s <sup>2</sup> (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of the three orientations. |