

Description

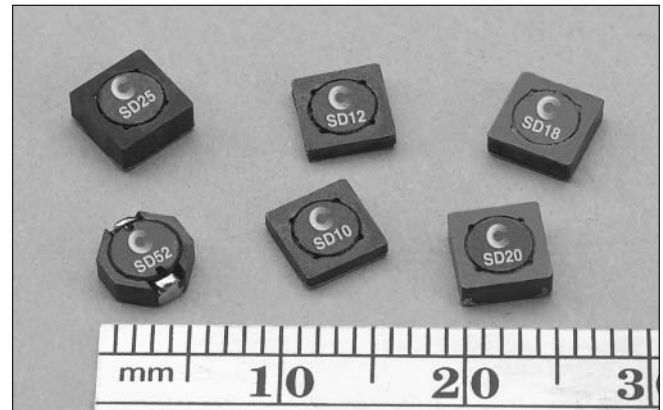
- Six sizes of shielded drum core inductors with low profiles (as low as 1.0mm) and high power density
- Inductance range from .47uH to 1000uH
- Current range from 6.00 to 0.088 Amps
- Ferrite shielded, low EMI

Applications

- Digital cameras, CD players, cellular phones, and PDAs
- PCMCIA cards
- GPS systems

Environmental Data

- Storage temperature range: -40C to +125C
- Operating ambient temperature range: -40C to +85C (range is application specific). Temperature rise is approximately 40C at rated rms current
- Infrared reflow temperature: +240C for 30 seconds maximum



Packaging

- Supplied in tape and reel packaging, 3800 (SD10, SD12 and SD18), 2900 (SD20 and SD25), and 3500 (SD52) per reel

| Part Number | Rated Inductance (µH) | OCL (1) +/-20% (µH) | Part Marking | Irms (2) Amperes | Isat (3) Amperes | DCR (4) (Ω) Typ. | Volt u-sec Typ. |
|-------------|-----------------------|---------------------|--------------|------------------|------------------|------------------|-----------------|
| SD10-R47 | 0.470 | 0.453 | A | 2.59 | 3.54 | 0.0249 | 2.1 |
| SD10-1R0 | 1.00 | 1.119 | B | 1.93 | 2.25 | 0.0448 | 3.3 |
| SD10-1R5 | 1.50 | 1.563 | C | 1.60 | 1.91 | 0.0653 | 3.9 |
| SD10-2R2 | 2.20 | 2.081 | D | 1.35 | 1.65 | 0.0912 | 4.5 |
| SD10-3R3 | 3.30 | 3.339 | E | 1.24 | 1.31 | 0.1078 | 5.7 |
| SD10-4R7 | 4.70 | 4.893 | F | 1.04 | 1.08 | 0.1535 | 6.9 |
| SD10-6R2 | 6.20 | 6.743 | G | 0.94 | 0.92 | 0.1870 | 8.1 |
| SD10-8R2 | 8.20 | 8.889 | H | 0.800 | 0.800 | 0.2607 | 9.3 |
| SD10-100 | 10.0 | 10.07 | J | 0.760 | 0.752 | 0.2888 | 9.9 |
| SD10-150 | 15.0 | 15.55 | K | 0.613 | 0.605 | 0.4429 | 12.3 |
| SD10-220 | 22.0 | 22.21 | L | 0.498 | 0.506 | 0.6718 | 14.7 |
| SD10-330 | 33.0 | 32.20 | M | 0.412 | 0.420 | 0.9807 | 17.7 |
| SD10-470 | 47.0 | 46.63 | N | 0.337 | 0.349 | 1.47 | 21.3 |
| SD10-680 | 68.0 | 70.01 | O | 0.301 | 0.285 | 1.84 | 26.1 |
| SD10-820 | 82.0 | 83.48 | P | 0.258 | 0.261 | 2.50 | 28.5 |
| SD10-101 | 100 | 102.0 | Q | 0.225 | 0.236 | 3.29 | 31.5 |
| SD10-151 | 150 | 149.2 | R | 0.200 | 0.195 | 4.15 | 38.1 |
| SD10-221 | 220 | 222.2 | S | 0.161 | 0.160 | 6.41 | 46.5 |
| SD10-331 | 330 | 330.4 | T | 0.130 | 0.131 | 9.83 | 56.7 |
| SD10-471 | 470 | 468.3 | U | 0.117 | 0.110 | 12.10 | 67.5 |
| SD12-R47 | 0.470 | 0.490 | A | 3.19 | 3.86 | 0.0246 | 2.84 |
| SD12-1R2 | 1.20 | 1.21 | B | 2.62 | 2.45 | 0.0366 | 4.47 |
| SD12-1R5 | 1.50 | 1.69 | C | 2.19 | 2.08 | 0.0521 | 5.28 |
| SD12-2R2 | 2.20 | 2.25 | D | 1.83 | 1.80 | 0.0747 | 6.09 |
| SD12-3R3 | 3.30 | 3.61 | E | 1.55 | 1.42 | 0.1043 | 7.71 |
| SD12-4R7 | 4.70 | 4.41 | F | 1.46 | 1.29 | 0.1177 | 8.53 |
| SD12-6R2 | 6.20 | 6.25 | G | 1.21 | 1.08 | 0.1699 | 10.15 |
| SD12-8R2 | 8.20 | 8.41 | H | 1.02 | 0.931 | 0.2399 | 11.77 |
| SD12-100 | 10.0 | 10.89 | J | 0.938 | 0.818 | 0.2844 | 13.40 |
| SD12-150 | 15.0 | 15.21 | K | 0.782 | 0.692 | 0.4089 | 15.83 |
| SD12-220 | 22.0 | 22.09 | L | 0.628 | 0.574 | 0.6338 | 19.08 |
| SD12-330 | 33.0 | 32.49 | M | 0.519 | 0.474 | 0.9289 | 23.14 |
| SD12-470 | 47.0 | 47.61 | N | 0.428 | 0.391 | 1.37 | 28.01 |
| SD12-680 | 68.0 | 68.89 | O | 0.341 | 0.325 | 2.16 | 33.70 |
| SD12-820 | 82.0 | 82.81 | P | 0.326 | 0.297 | 2.36 | 36.95 |
| SD12-101 | 100 | 98.0 | Q | 0.308 | 0.273 | 2.64 | 40.19 |
| SD12-151 | 150 | 151.3 | R | 0.251 | 0.220 | 3.96 | 49.94 |

(1) Open Circuit Inductance Test Parameters: 100KHz, 0.25Vrms, 0.0Aac.

(2) RMS current for an approximate ΔT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.

(3) Peak current for approximate 30% roll off at 20°C.

(4) DCR limits @ 20°C.

(5) Applied Volt-Time product (V-uS) across the inductor at 100kHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise.

| Part Number | Rated Inductance (μH) | OCL (1) +/-20% (μH) | Part Marking | Irms (2) Amperes | Isat (3) Amperes | DCR (4) (Ω) Typ. | Volt u-sec Typ. |
|-------------|-----------------------|---------------------|--------------|------------------|------------------|------------------|-----------------|
| SD12-221 | 220 | 222.0 | S | 0.229 | 0.181 | 4.76 | 60.49 |
| SD12-331 | 330 | 334.9 | T | 0.186 | 0.148 | 7.25 | 74.30 |
| SD12-471 | 470 | 462.3 | U | 0.167 | 0.126 | 8.95 | 87.29 |
| SD12-681 | 680 | 670.8 | V | 0.149 | 0.104 | 11.30 | 105 |
| SD12-821 | 820 | 800.9 | W | 0.129 | 0.095 | 14.93 | 115 |
| SD12-102 | 1000 | 992.3 | X | 0.121 | 0.086 | 17.20 | 128 |
| SD18-R47 | 0.47 | 0.49 | A | 3.58 | 4.63 | 0.0201 | 2.35 |
| SD18-R82 | 0.82 | 0.81 | B | 3.24 | 3.60 | 0.0247 | 3.02 |
| SD18-1R2 | 1.20 | 1.21 | C | 2.97 | 2.95 | 0.0294 | 3.70 |
| SD18-1R5 | 1.50 | 1.69 | D | 2.73 | 2.49 | 0.0345 | 4.37 |
| SD18-2R2 | 2.20 | 2.25 | E | 2.55 | 2.16 | 0.0398 | 5.04 |
| SD18-3R3 | 3.30 | 3.61 | F | 2.07 | 1.71 | 0.0605 | 6.38 |
| SD18-4R7 | 4.70 | 4.41 | G | 1.77 | 1.54 | 0.0824 | 7.06 |
| SD18-6R2 | 6.20 | 6.25 | H | 1.61 | 1.30 | 0.1000 | 8.40 |
| SD18-8R2 | 8.20 | 8.41 | J | 1.38 | 1.12 | 0.1351 | 9.74 |
| SD18-100 | 10.0 | 10.89 | K | 1.28 | 0.982 | 0.1584 | 11.09 |
| SD18-150 | 15.0 | 15.21 | L | 1.06 | 0.831 | 0.2278 | 13.10 |
| SD18-220 | 22.0 | 22.09 | M | 0.876 | 0.689 | 0.3366 | 15.79 |
| SD18-330 | 33.0 | 32.49 | N | 0.715 | 0.568 | 0.5057 | 19.15 |
| SD18-470 | 47.0 | 47.61 | O | 0.578 | 0.470 | 0.7732 | 23.18 |
| SD18-680 | 68.0 | 68.89 | P | 0.514 | 0.390 | 0.9798 | 27.89 |
| SD18-820 | 82.0 | 82.81 | Q | 0.446 | 0.356 | 1.30 | 30.58 |
| SD18-101 | 100 | 102.01 | R | 0.419 | 0.321 | 1.47 | 33.94 |
| SD18-151 | 150 | 151.29 | S | 0.345 | 0.263 | 2.18 | 41.33 |
| SD18-221 | 220 | 222.01 | T | 0.296 | 0.217 | 2.95 | 50.06 |
| SD18-331 | 330 | 334.89 | U | 0.248 | 0.177 | 4.20 | 61.49 |
| SD18-471 | 470 | 479.61 | V | 0.201 | 0.148 | 6.39 | 73.58 |
| SD18-681 | 680 | 681.21 | W | 0.167 | 0.124 | 9.28 | 87.70 |
| SD18-821 | 820 | 823.69 | X | 0.145 | 0.113 | 12.35 | 96.43 |
| SD18-102 | 1000 | 1004 | Y | 0.136 | 0.102 | 14.01 | 107 |
| SD20-R47 | 0.47 | 0.490 | A | 3.59 | 4.00 | 0.0200 | 2.28 |
| SD20-1R2 | 1.20 | 1.21 | B | 3.07 | 2.55 | 0.0275 | 3.58 |
| SD20-1R5 | 1.50 | 1.69 | C | 2.88 | 2.15 | 0.0312 | 4.23 |
| SD20-2R2 | 2.20 | 2.25 | D | 2.45 | 1.87 | 0.0429 | 4.88 |
| SD20-3R3 | 3.30 | 3.61 | E | 2.17 | 1.47 | 0.0547 | 6.18 |
| SD20-4R7 | 4.70 | 4.41 | F | 2.05 | 1.33 | 0.0612 | 6.83 |
| SD20-6R2 | 6.20 | 6.25 | G | 1.89 | 1.12 | 0.0720 | 8.13 |
| SD20-8R2 | 8.20 | 8.41 | H | 1.61 | 0.966 | 0.1000 | 9.43 |
| SD20-100 | 10.0 | 9.61 | J | 1.53 | 0.903 | 0.1100 | 10.08 |
| SD20-150 | 15.0 | 15.21 | K | 1.25 | 0.718 | 0.1655 | 12.68 |
| SD20-220 | 22.0 | 22.09 | L | 1.12 | 0.596 | 0.2053 | 15.28 |
| SD20-330 | 33.0 | 32.49 | M | 0.913 | 0.491 | 0.3100 | 18.53 |
| SD20-470 | 47.0 | 47.61 | N | 0.745 | 0.406 | 0.4650 | 22.43 |
| SD20-680 | 68.0 | 68.89 | O | 0.610 | 0.337 | 0.6947 | 26.98 |
| SD20-820 | 82.0 | 82.81 | P | 0.576 | 0.308 | 0.7785 | 29.58 |
| SD20-101 | 100 | 98.01 | Q | 0.495 | 0.283 | 1.06 | 32.18 |
| SD20-151 | 150 | 151.3 | R | 0.435 | 0.228 | 1.37 | 39.98 |
| SD20-221 | 220 | 222.0 | S | 0.356 | 0.188 | 2.04 | 48.43 |
| SD20-331 | 330 | 327.6 | T | 0.294 | 0.155 | 2.99 | 58.83 |
| SD20-471 | 470 | 470.9 | U | 0.263 | 0.129 | 3.74 | 70.53 |
| SD20-681 | 680 | 681.2 | V | 0.216 | 0.107 | 5.56 | 84.83 |
| SD20-821 | 820 | 823.7 | W | 0.204 | 0.098 | 6.22 | 93.28 |
| SD20-102 | 1000 | 1004.9 | X | 0.172 | 0.088 | 8.73 | 103 |
| SD25-R47 | 0.47 | 0.466 | A | 3.88 | 6.00 | 0.0177 | 2.13 |
| SD25-R82 | 0.82 | 0.770 | B | 3.58 | 4.67 | 0.0208 | 2.74 |
| SD25-1R2 | 1.20 | 1.15 | C | 3.33 | 3.81 | 0.0240 | 3.34 |
| SD25-1R5 | 1.50 | 1.61 | D | 3.12 | 3.23 | 0.0274 | 3.95 |
| SD25-2R2 | 2.20 | 2.14 | E | 2.93 | 2.80 | 0.0311 | 4.56 |

(1) Open Circuit Inductance Test Parameters: 100KHz, 0.25Vrms, 0.0Adc.
(2) RMS current for an approximate ΔT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.
(3) Peak current for approximate 30% roll off at 20°C.

(4) DCR limits @ 20°C.
(5) Applied Volt-Time product (V-uS) across the inductor at 100KHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise.

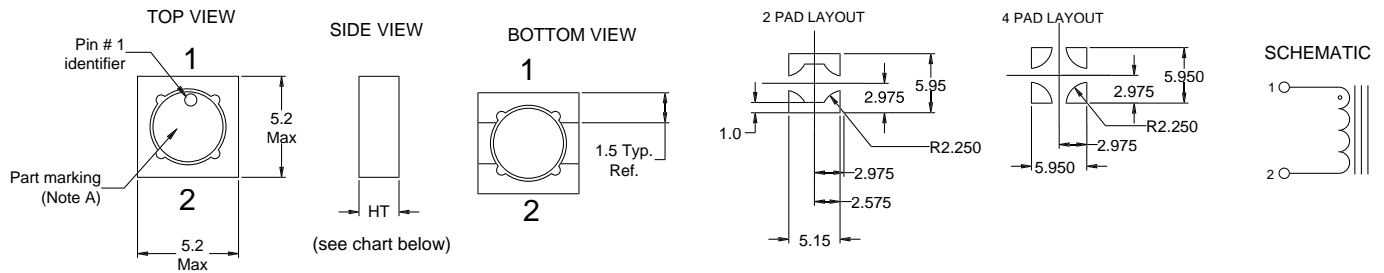
| Part Number | Rated Inductance (µH) | OCL (1) +/-20% (µH) | Part Marking | I _{rms} (2) Amperes | I _{sat} (3) Amperes | DCR (4) (Ω) Typ. | Volt u-sec Typ. |
|-------------|-----------------------|---------------------|--------------|------------------------------|------------------------------|------------------|-----------------|
| SD25-3R3 | 3.30 | 3.43 | F | 2.64 | 2.21 | 0.0384 | 5.78 |
| SD25-4R7 | 4.70 | 5.03 | G | 2.39 | 1.83 | 0.0467 | 6.99 |
| SD25-6R8 | 6.80 | 6.93 | H | 2.19 | 1.56 | 0.0556 | 8.21 |
| SD25-8R2 | 8.20 | 7.99 | J | 1.92 | 1.45 | 0.0724 | 8.82 |
| SD25-100 | 10.0 | 10.35 | K | 1.80 | 1.27 | 0.0824 | 10.03 |
| SD25-150 | 15.0 | 14.45 | L | 1.67 | 1.08 | 0.0956 | 11.86 |
| SD25-220 | 22.0 | 22.81 | M | 1.34 | 0.857 | 0.1478 | 14.90 |
| SD25-330 | 33.0 | 33.07 | N | 1.11 | 0.711 | 0.2149 | 17.94 |
| SD25-470 | 47.0 | 47.89 | O | 0.919 | 0.592 | 0.3156 | 21.58 |
| SD25-680 | 68.0 | 68.64 | P | 0.741 | 0.482 | 0.4850 | 25.84 |
| SD25-820 | 82.0 | 82.17 | Q | 0.713 | 0.441 | 0.5242 | 28.27 |
| SD25-101 | 100 | 100.79 | R | 0.670 | 0.398 | 0.5937 | 31.31 |
| SD25-151 | 150 | 148.4 | S | 0.553 | 0.328 | 0.8723 | 38.00 |
| SD25-221 | 220 | 222.4 | T | 0.446 | 0.268 | 1.34 | 46.51 |
| SD25-331 | 330 | 332.2 | U | 0.359 | 0.219 | 2.07 | 56.85 |
| SD25-471 | 470 | 472.4 | V | 0.293 | 0.184 | 3.10 | 67.79 |
| SD25-681 | 680 | 677.2 | W | 0.262 | 0.154 | 3.88 | 81.17 |
| SD25-821 | 820 | 826.7 | X | 0.230 | 0.139 | 5.04 | 89.68 |
| SD25-102 | 1000 | 1003.4 | Y | 0.216 | 0.126 | 5.70 | 98.80 |

- (1) Open Circuit Inductance Test Parameters: 100KHz, 0.25Vrms, 0.0Adc.
 (2) RMS current for an approximate ΔT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.
 (3) Peak current for approximate 30% roll off at 20°C.

- (4) DCR limits @ 20°C.
 (5) Applied Volt-Time product (V-uS) across the inductor at 100kHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise.

Mechanical Diagrams

SD Series



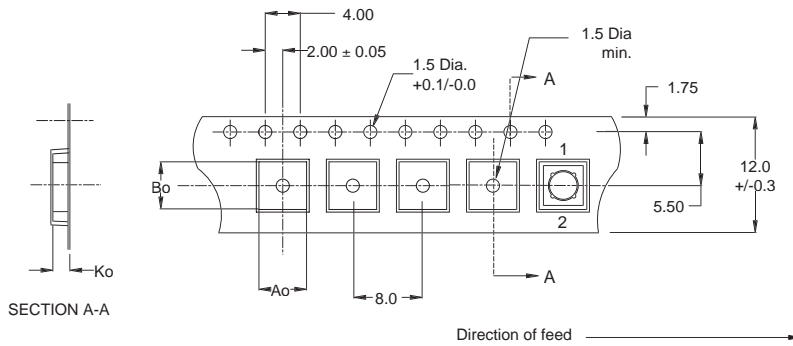
| Series | HT |
|--------|-----------|
| SD10 | 1.0mm max |
| SD12 | 1.2mm max |
| SD18 | 1.8mm max |
| SD20 | 2.0mm max |
| SD25 | 2.5mm max |

A) Part Marking: Line 1: (1st digit indicates the inductance value per part marking designator in chart above)
 (2nd digit is a bi-weekly production date code)
 (3rd digit is the last digit of the year produced)
 Line 2: 12 (indicates the product size code)

Packaging Information

SD10 Series

Ao=5.45mm
Bo=5.45mm
Ko=1.20mm

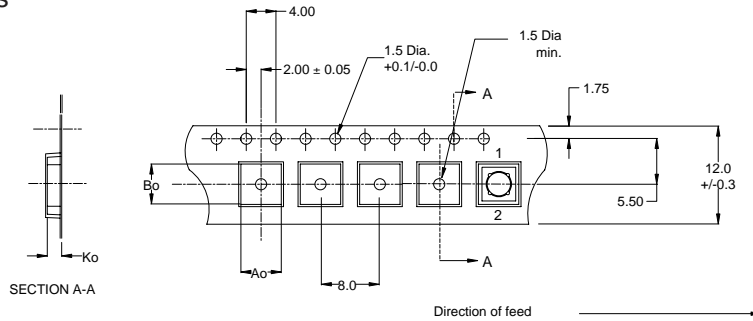


ACTUAL SIZE
SD10

Parts packaged on 13" Diameter reel,
3,800 parts per reel.

SD12/18 Series

Ao=5.45mm
Bo=5.45mm
Ko=2.00mm



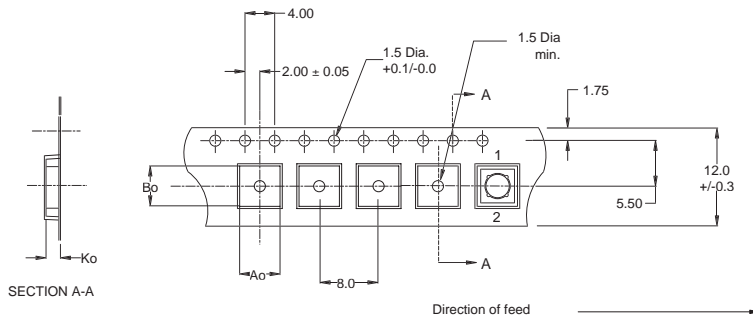
ACTUAL SIZE
SD12

ACTUAL SIZE
SD18

Parts packaged on 13" Diameter reel,
3,800 parts per reel.

SD20/25 Series

Ao=5.45mm
Bo=5.45mm
Ko=2.70mm



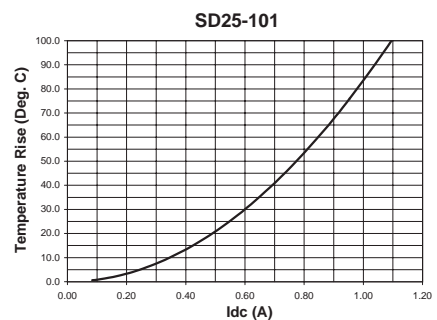
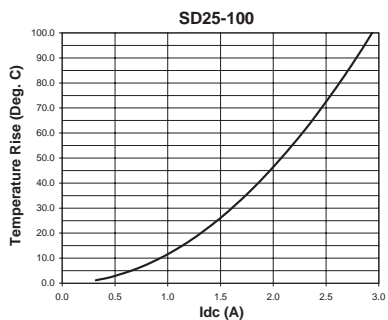
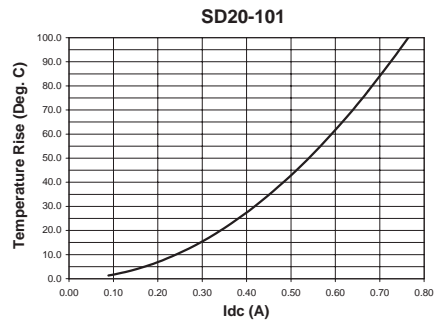
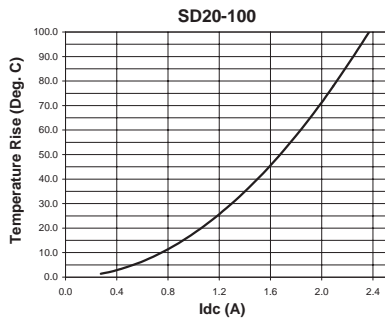
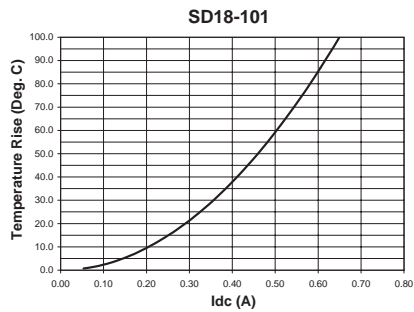
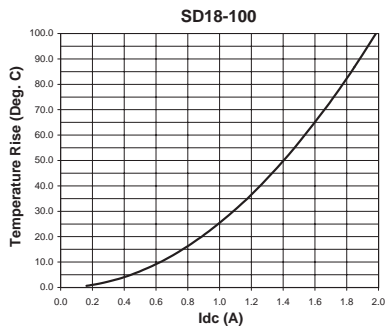
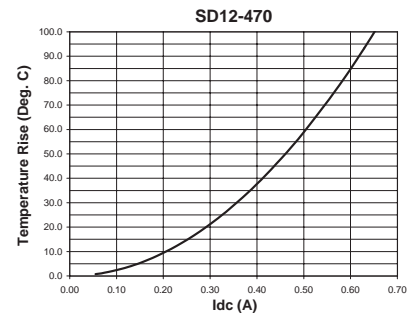
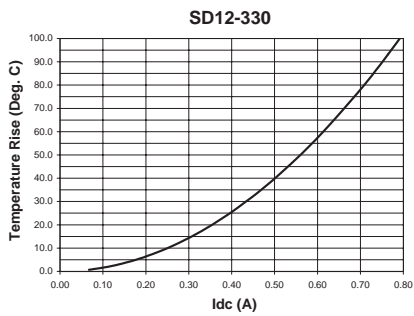
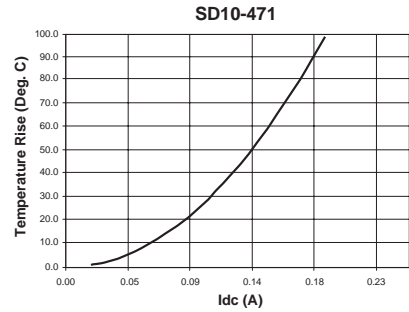
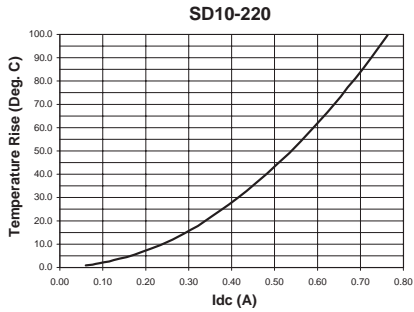
ACTUAL SIZE
SD20

ACTUAL SIZE
SD25

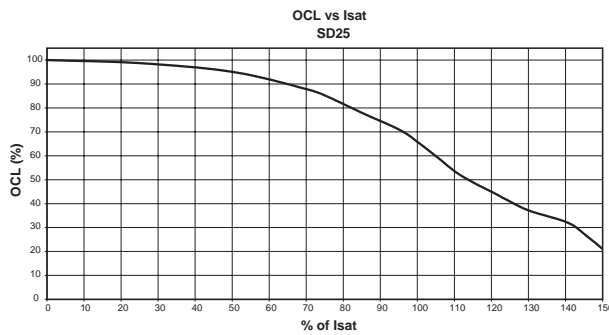
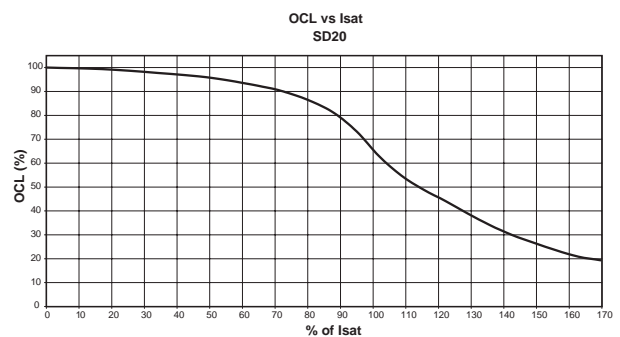
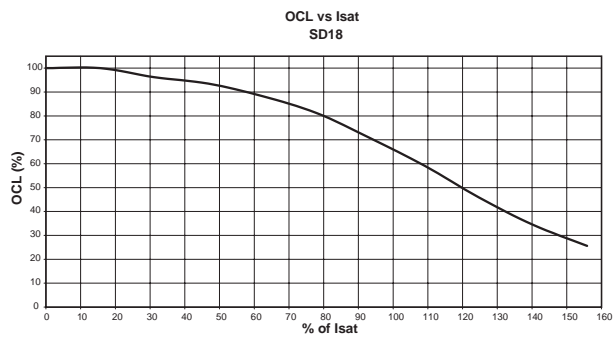
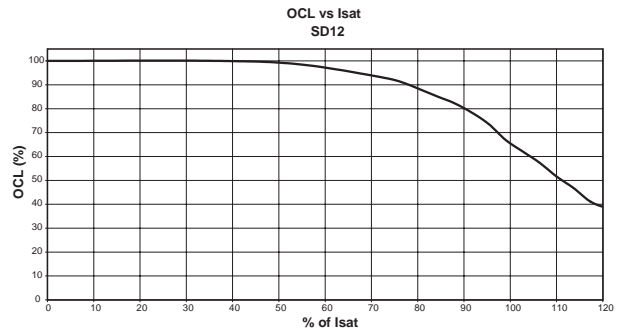
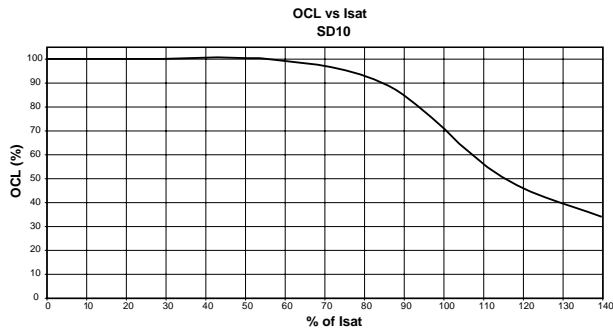
Parts packaged on 13" Diameter reel,
2,900 parts per reel.

Dimensions are in millimeters.

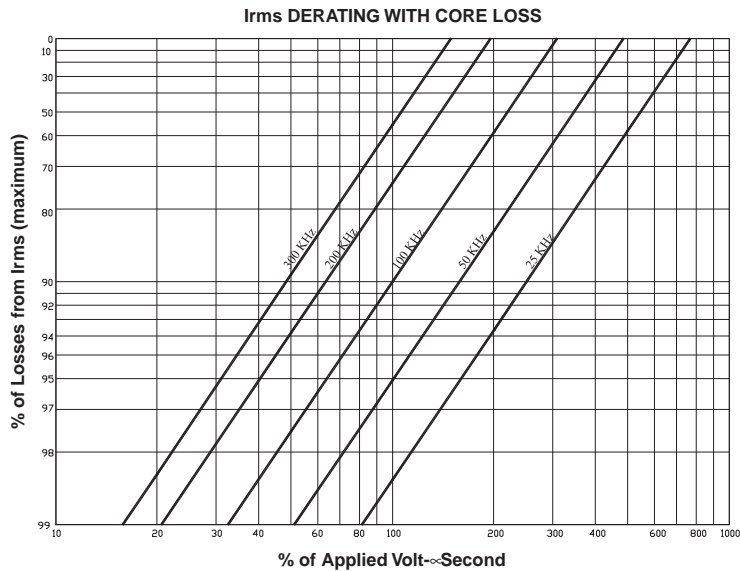
DC Current vs. Temperature



Rolloff



Core Loss



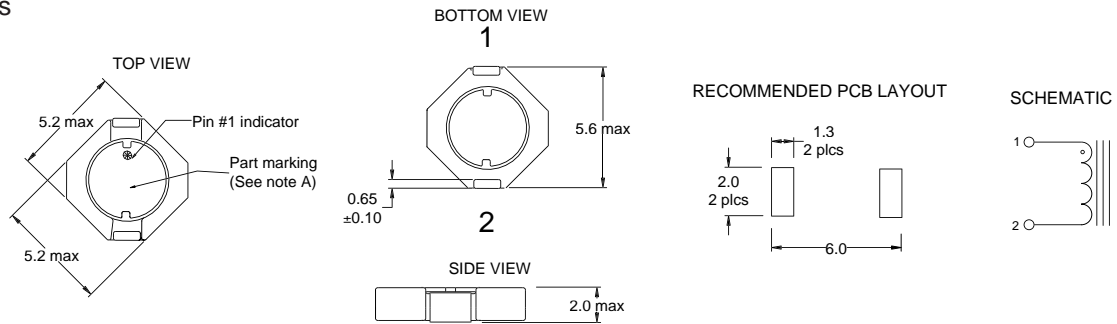
| Part Number | Rated Inductance (µH) | OCL (1) +/-20% (µH) | Part Marking | I _{rms} (2) Amperes | I _{sat} (3) Amperes | DCR (4) (Ω) Typ. | Volt u-sec Typ. |
|-------------|-----------------------|---------------------|--------------|------------------------------|------------------------------|------------------|-----------------|
| SD52-1R2 | 1.20 | 1.20 | A | 2.33 | 3.14 | 0.0279 | 1.49 |
| SD52-2R2 | 2.20 | 2.20 | B | 1.98 | 2.30 | 0.0385 | 2.03 |
| SD52-3R5 | 3.50 | 3.50 | C | 1.73 | 1.82 | 0.0503 | 2.57 |
| SD52-4R7 | 4.70 | 4.70 | D | 1.63 | 1.64 | 0.0568 | 2.84 |
| SD52-6R8 | 6.80 | 6.80 | E | 1.39 | 1.28 | 0.0777 | 3.65 |
| SD52-100 | 10.0 | 10.0 | F | 1.11 | 1.11 | 0.1215 | 4.19 |
| SD52-150 | 15.0 | 15.0 | G | 0.97 | 0.88 | 0.1618 | 5.27 |
| SD52-220 | 22.0 | 22.0 | H | 0.86 | 0.73 | 0.2042 | 6.35 |
| SD52-270 | 27.0 | 27.0 | J | 0.73 | 0.65 | 0.2864 | 7.16 |
| SD52-330 | 33.0 | 33.0 | K | 0.70 | 0.61 | 0.3074 | 7.70 |
| SD52-470 | 47.0 | 47.0 | L | 0.58 | 0.50 | 0.4465 | 9.32 |
| SD52-680 | 68.0 | 68.0 | M | 0.47 | 0.42 | 0.6829 | 11.21 |
| SD52-101 | 100 | 100 | N | 0.39 | 0.35 | 1.0000 | 13.37 |

(1) Open Circuit Inductance Test Parameters: 100KHz, 0.25Vrms, 0.0Adc.
 (2) RMS current for an approximate ΔT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.
 (3) Peak current for approximate 30% roll off at 20°C.

(4) DCR limits @ 20°C.
 (5) Applied Volt-Time product (V-uS) across the inductor at 100kHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise.

Mechanical Diagrams

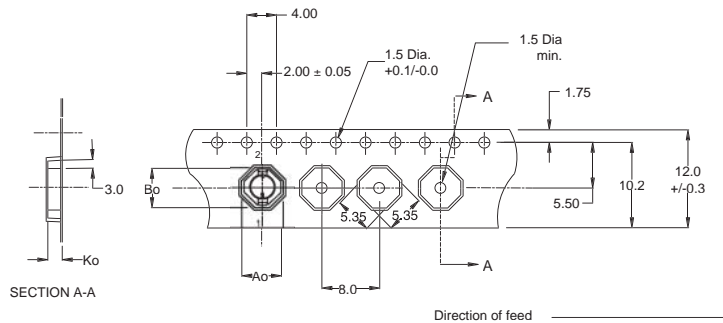
SD52 Series



A) Part Marking: Line 1: (1st digit indicates the inductance value per part marking designator in chart above)
 (2nd digit is a bi-weekly production date code)
 (3rd digit is the last digit of the year produced)
 Line 2: 12 (indicates the product size code)

Packaging Information

SD52 Series



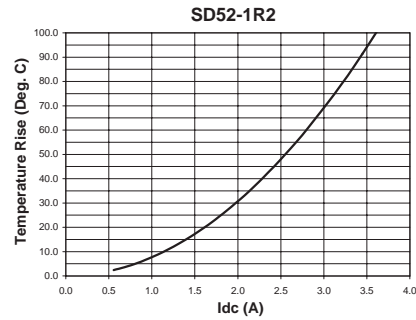
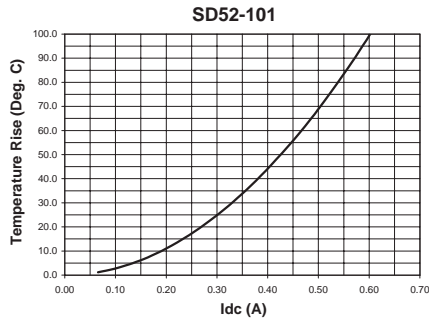
A₀=5.72mm
 B₀=5.72mm
 K₀=2.30mm

**ACTUAL SIZE
SD52**

Parts packaged on 13" Diameter reel,
 3,500 parts per reel.

Dimensions are in millimeters.

DC Current vs. Temperature



Rolloff

