



SMTDR SERIES

UNSHIELDED SMT POWER INDUCTORS

Applications :

- Power supply for VTRs.
- LCD televisions.
- Notebook PCs.
- Portable communication equipment.
- DC/DC converters, etc.



Shape and Dimensions (Dimensions are in mm) :



| Item | A | B | C |
|----------|----------|---------|----------|
| SMTDR31 | 3.5±0.3 | 3.0±0.3 | 1.1±0.3 |
| SMTDR32 | 3.5±0.3 | 3.0±0.3 | 2.0±0.3 |
| SMTDR43 | 4.5±0.3 | 4.0±0.3 | 3.2±0.3 |
| SMTDR52 | 5.8±0.3 | 5.2±0.3 | 2.5±0.3 |
| SMTDR53 | 5.8±0.3 | 5.2±0.3 | 3.0±0.3 |
| SMTDR54 | 5.8±0.3 | 5.2±0.3 | 4.5±0.35 |
| SMTDR73 | 7.8±0.3 | 7.0±0.3 | 3.5±0.5 |
| SMTDR75 | 7.8±0.3 | 7.0±0.3 | 5.0±0.5 |
| SMTDR104 | 10.0±0.3 | 9.0±0.3 | 4.0±0.5 |
| SMTDR105 | 10.0±0.3 | 9.0±0.3 | 5.4±0.4 |
| SMTDR107 | 10.0±0.3 | 9.0±0.3 | 7.5 Max. |

| Item | H | I | J |
|----------|-----|------|-----|
| SMTDR31 | 3.5 | 1.6 | 0.8 |
| SMTDR32 | 3.5 | 1.6 | 0.8 |
| SMTDR43 | 4.5 | 1.75 | 1.5 |
| SMTDR52 | 5.5 | 2.15 | 1.7 |
| SMTDR53 | 5.5 | 2.15 | 1.7 |
| SMTDR54 | 5.5 | 2.15 | 1.7 |
| SMTDR73 | 7.5 | 3.0 | 2.0 |
| SMTDR75 | 7.5 | 3.0 | 2.0 |
| SMTDR104 | 9.5 | 3.75 | 2.5 |
| SMTDR105 | 9.5 | 3.75 | 2.5 |
| SMTDR107 | 9.5 | 3.75 | 2.5 |

Features :

- Silver Plated Type, Low cost designed.
- High power, High saturation inductors.
- Ideal inductors for DC-DC conversion.
- Available on tape and reel for auto surface mounting.

Characteristics :

- Rated Current: It is either the inductance is 10% lower than its initial value in DC. saturation characteristics or temperature raise becomes $\Delta T=40^{\circ}\text{C}$ ($T_a=20^{\circ}\text{C}$), whichever is lower.
- Operating temperature : -30°C to 105°C .

Product identification :

SMT DR105 - 331 K

(1) (2) (3) (4)

- (1) Type : Surface Mountable Type .
- (2) Style : DR Core : OD=10mm, HT=5.4mm.
- (3) Inductance : 331 for 330 uH.
- (4) Inductance tolerance : "M": ±20%; "L": ±15%; "K": ±10%

Test equipments :

- Inductance measured at 0A_{dc} on HP 4284A LCR meter or equivalent.
- DCR measured on Chroma 16502 micro-ohmmeter or equivalent.
- Electrical specifications at 25°C.


● SMTDR31 series

| Part No. | Inductance L (uH) | Test Freq. (0.1V) | DCR (Ω) Max. | Rated Current (A) Max. |
|--------------|-------------------|-------------------|--------------|------------------------|
| SMTDR31-2R2M | 2.2 | 100 KHz | 0.24 | 1.20 |
| SMTDR31-3R3M | 3.3 | 100 KHz | 0.27 | 1.08 |
| SMTDR31-4R7M | 4.7 | 100 KHz | 0.30 | 1.00 |
| SMTDR31-6R8M | 6.8 | 100 KHz | 0.47 | 0.80 |
| SMTDR31-8R2M | 8.2 | 100 KHz | 0.52 | 0.76 |
| SMTDR31-100M | 10.0 | 100 KHz | 0.55 | 0.70 |
| SMTDR31-120M | 12.0 | 100 KHz | 0.75 | 0.60 |
| SMTDR31-150M | 15.0 | 100 KHz | 0.91 | 0.50 |
| SMTDR31-220M | 22.0 | 100 KHz | 1.20 | 0.40 |
| SMTDR31-270M | 27.0 | 100 KHz | 1.50 | 0.36 |

● SMTDR series

| Part No. | L (uH) | DC resistance (Ω) Max. | | | | | Rated current (Amp) Max. | | | | |
|----------|--------|------------------------|--------|-------|------|------|--------------------------|------|------|------|------|
| | | DR32 | DR43 | DR52 | DR53 | DR54 | DR32 | DR43 | DR52 | DR53 | DR54 |
| 1R0 | 1.0 | 0.045 | 0.0487 | | 0.03 | | 2.20 | 2.56 | | 4.50 | |
| 1R2 | 1.2 | 0.050 | | 0.050 | 0.03 | | 2.10 | | 4.20 | 4.20 | |
| 1R4 | 1.4 | | 0.0562 | | | | | 2.52 | | | |
| 1R5 | 1.5 | 0.055 | | 0.060 | 0.03 | | 1.70 | | 4.00 | 4.10 | |
| 1R8 | 1.8 | 0.070 | 0.0637 | 0.065 | 0.03 | | 1.65 | 1.95 | 3.70 | 3.70 | |
| 2R2 | 2.2 | 0.085 | 0.0712 | 0.07 | 0.03 | | 1.60 | 1.75 | 3.50 | 3.50 | |
| 2R7 | 2.7 | 0.100 | 0.0787 | 0.08 | 0.04 | | 1.40 | 1.58 | 3.20 | 3.20 | |
| 3R3 | 3.3 | 0.120 | 0.0862 | 0.10 | 0.05 | | 1.04 | 1.44 | 2.70 | 2.80 | |
| 3R9 | 3.9 | 0.125 | 0.0937 | 0.12 | 0.06 | | 1.00 | 1.33 | 2.40 | 2.60 | |
| 4R7 | 4.7 | 0.135 | 0.1087 | 0.14 | 0.07 | | 1.00 | 1.15 | 2.00 | 2.50 | |
| 5R6 | 5.6 | 0.145 | 0.1257 | 0.15 | 0.08 | | 0.95 | 0.99 | 1.80 | 2.40 | |
| 6R8 | 6.8 | 0.20 | 0.1312 | 0.16 | 0.09 | | 0.95 | 0.95 | 1.50 | 2.20 | |
| 8R2 | 8.2 | 0.25 | 0.1462 | 0.17 | 0.10 | | 0.92 | 0.84 | 1.40 | 2.00 | |
| 100 | 10 | 0.32 | 0.182 | 0.20 | 0.13 | 0.10 | 0.90 | 1.04 | 1.30 | 1.80 | 1.44 |
| 120 | 12 | 0.35 | 0.210 | 0.23 | 0.16 | 0.12 | 0.85 | 0.97 | 1.10 | 1.75 | 1.40 |
| 150 | 15 | 0.46 | 0.235 | 0.25 | 0.19 | 0.14 | 0.75 | 0.85 | 1.05 | 1.70 | 1.30 |
| 180 | 18 | 0.52 | 0.338 | 0.30 | 0.21 | 0.15 | 0.70 | 0.74 | 1.00 | 1.60 | 1.23 |
| 220 | 22 | 0.65 | 0.378 | 0.35 | 0.28 | 0.18 | 0.60 | 0.68 | 0.90 | 1.50 | 1.11 |
| 270 | 27 | 0.75 | 0.522 | 0.40 | 0.32 | 0.20 | 0.55 | 0.62 | 0.85 | 1.40 | 0.97 |
| 330 | 33 | 0.92 | 0.540 | 0.50 | 0.38 | 0.23 | 0.50 | 0.56 | 0.75 | 1.10 | 0.88 |
| 390 | 39 | 1.12 | 0.587 | 0.55 | 0.42 | 0.32 | 0.48 | 0.52 | 0.70 | 1.00 | 0.80 |
| 470 | 47 | 1.27 | 0.844 | 0.65 | 0.52 | 0.37 | 0.45 | 0.44 | 0.60 | 0.90 | 0.72 |
| 560 | 56 | 1.50 | 0.937 | 0.75 | 0.56 | 0.42 | 0.30 | 0.42 | 0.55 | 0.85 | 0.68 |
| 680 | 68 | 2.00 | 1.117 | 0.95 | 0.68 | 0.46 | 0.26 | 0.37 | 0.50 | 0.80 | 0.61 |
| 820 | 82 | 2.15 | | 1.20 | 0.82 | 0.60 | 0.23 | | 0.45 | 0.65 | 0.58 |
| 101 | 100 | 2.80 | | 1.40 | 1.10 | 0.70 | 0.20 | | 0.40 | 0.60 | 0.52 |
| 121 | 120 | 3.40 | | 1.75 | 1.20 | 0.93 | 0.18 | | 0.35 | 0.58 | 0.48 |
| 151 | 150 | 4.20 | | 2.00 | 1.50 | 1.10 | 0.16 | | 0.25 | 0.43 | 0.40 |
| 181 | 180 | 4.50 | | 2.60 | 1.80 | 1.38 | 0.15 | | 0.22 | 0.41 | 0.38 |
| 221 | 220 | 5.70 | | 3.00 | 2.00 | 1.57 | 0.14 | | 0.20 | 0.38 | 0.35 |



● **SMTDR series**

| Part No. | L (uH) | DC resistance (Ω) Max. | | | | | Rated current (Amp) Max. | | | | |
|----------|-----------|------------------------|------|------|------|------|--------------------------|------|------|------|------|
| | | DR32 | DR43 | DR52 | DR53 | DR54 | DR32 | DR43 | DR52 | DR53 | DR54 |
| 271 | 270 | 8.50 | | 3.70 | 2.90 | | 0.10 | | 0.18 | 0.35 | |
| 331 | 330 | 9.50 | | 4.30 | 3.30 | | 0.09 | | 0.17 | 0.28 | |
| 391 | 390 | | | 6.00 | 3.70 | | | | 0.16 | 0.26 | |
| 471 | 470 | | | 6.70 | 4.90 | | | | 0.15 | 0.20 | |

Measuring Frequency :

1.0~8.2uH @ 7.96MHz 0.25V; 10~82uH @ 2.52MHz 0.25V; 100~470uH @ 1kHz 0.25V

Tolerance of Inductance :

SMTDR32 1.0~18uH (M) ± 20%; 22~330uH (K) ± 10%. SMTDR43 1.0~27uH (M) ± 20%; 33~68uH (K) ± 10%.
 SMTDR52 1.2~18uH (M) ± 20%; 22~470uH (K) ± 10%. SMTDR53 1.0~18uH (M) ± 20%; 22~470uH (K) ± 10%.
 SMTDR54 10~27uH (M) ± 20%; 33~220uH (K) ± 10%.

● **SMTDR series**

| Part No. | L (uH) | DC resistance (Ω) Max. | | | | Rated current (Amp) Max. | | | |
|----------|-----------|------------------------|------|-------|-------|--------------------------|------|-------|-------|
| | | DR73 | DR75 | DR104 | DR105 | DR73 | DR75 | DR104 | DR105 |
| 100 | 10 | 0.0803 | 0.07 | 0.053 | 0.06 | 1.44 | 2.30 | 2.38 | 2.60 |
| 120 | 12 | 0.0897 | 0.08 | 0.061 | 0.07 | 1.39 | 2.00 | 2.13 | 2.45 |
| 150 | 15 | 0.104 | 0.09 | 0.070 | 0.08 | 1.24 | 1.80 | 1.87 | 2.27 |
| 180 | 18 | 0.111 | 0.10 | 0.081 | 0.09 | 1.12 | 1.60 | 1.73 | 2.15 |
| 220 | 22 | 0.129 | 0.11 | 0.088 | 0.10 | 1.07 | 1.50 | 1.60 | 1.95 |
| 270 | 27 | 0.153 | 0.12 | 0.100 | 0.11 | 0.94 | 1.30 | 1.44 | 1.76 |
| 330 | 33 | 0.170 | 0.13 | 0.120 | 0.12 | 0.85 | 1.20 | 1.26 | 1.50 |
| 390 | 39 | 0.217 | 0.16 | 0.151 | 0.14 | 0.74 | 1.10 | 1.20 | 1.37 |
| 470 | 47 | 0.252 | 0.18 | 0.170 | 0.17 | 0.68 | 1.10 | 1.10 | 1.28 |
| 560 | 56 | 0.282 | 0.24 | 0.199 | 0.19 | 0.64 | 0.94 | 1.01 | 1.17 |
| 680 | 68 | 0.332 | 0.28 | 0.223 | 0.22 | 0.59 | 0.85 | 0.91 | 1.11 |
| 820 | 82 | 0.406 | 0.37 | 0.252 | 0.25 | 0.54 | 0.78 | 0.85 | 1.00 |
| 101 | 100 | 0.481 | 0.43 | 0.344 | 0.35 | 0.51 | 0.72 | 0.74 | 0.97 |
| 121 | 120 | 0.536 | 0.47 | 0.396 | 0.40 | 0.49 | 0.66 | 0.69 | 0.89 |
| 151 | 150 | 0.755 | 0.64 | 0.544 | 0.47 | 0.40 | 0.58 | 0.61 | 0.78 |
| 181 | 180 | 1.022 | 0.71 | 0.621 | 0.63 | 0.36 | 0.51 | 0.56 | 0.72 |
| 221 | 220 | 1.200 | 0.96 | 0.721 | 0.73 | 0.31 | 0.49 | 0.53 | 0.66 |
| 271 | 270 | 1.306 | 1.11 | 0.949 | 0.97 | 0.29 | 0.42 | 0.45 | 0.57 |
| 331 | 330 | 1.495 | 1.26 | 1.100 | 1.15 | 0.28 | 0.40 | 0.42 | 0.52 |
| 391 | 390 | | 1.77 | 1.245 | 1.30 | | 0.36 | 0.38 | 0.48 |
| 471 | 470 | | 1.96 | 1.526 | 1.48 | | 0.34 | 0.35 | 0.42 |
| 561 | 560 | | | 1.904 | 1.90 | | | 0.32 | 0.33 |
| 681 | 680 | | | | 2.25 | | | | 0.28 |
| 821 | 820 | | | | 2.55 | | | | 0.24 |

Measuring Frequency :

10~82uH @ 2.52MHz 0.25V; 100~330uH @ 1kHz 0.25V

Tolerance of Inductance :

SMTDR73 10~470uH (K) ± 10%; 56~330uH (K) ± 10%.
 SMTDR75 10~470uH (K) ± 10%.
 SMTDR104 10~47uH (M) ± 20%; 56~560uH (K) ± 10%.
 SMTDR105 10~39uH (M) ± 20%; 47~820uH (K) ± 10%.



● **SMTDR 107 series**

| Part No. | Inductance L (μH) | Test Freq. (0.25V) | DCR (mΩ) Max. | I sat (A) Max. | I rms (A) Max. |
|-----------------|---|-----------------------------------|--|-------------------------------|-------------------------------|
| SMTDR107-100M | 10.0 | 2.52MHz | 34 | 8.0 | 5.0 |
| SMTDR107-120M | 12.0 | 2.52MHz | 37 | 7.5 | 4.0 |
| SMTDR107-150M | 15.0 | 2.52MHz | 46 | 6.5 | 3.5 |
| SMTDR107-180M | 18.0 | 2.52MHz | 52 | 6.2 | 3.2 |
| SMTDR107-220M | 22.0 | 2.52MHz | 66 | 5.6 | 3.0 |
| SMTDR107-270M | 27.0 | 2.52 MHz | 78 | 5.1 | 2.8 |
| SMTDR107-330M | 33.0 | 2.52MHz | 89 | 4.7 | 2.7 |
| SMTDR107-390M | 39.0 | 2.52MHz | 116 | 4.4 | 2.4 |
| SMTDR107-470M | 47.0 | 2.52MHz | 124 | 3.9 | 2.2 |
| SMTDR107-560M | 56.0 | 2.52MHz | 153 | 3.5 | 2.0 |
| SMTDR107-680M | 68.0 | 2.52 MHz | 185 | 3.3 | 1.6 |
| SMTDR107-820M | 82.0 | 2.52MHz | 207 | 3.0 | 1.5 |
| SMTDR107-101K | 100.0 | 1 KHz | 272 | 2.7 | 1.45 |
| SMTDR107-121K | 120.0 | 1 KHz | 299 | 2.5 | 1.4 |
| SMTDR107-151K | 150.0 | 1 KHz | 381 | 2.3 | 1.3 |
| SMTDR107-181K | 180.0 | 1 KHz | 431 | 2.1 | 1.25 |
| SMTDR107-221K | 220.0 | 1 KHz | 549 | 1.8 | 1.1 |
| SMTDR107-271K | 270.0 | 1 KHz | 621 | 1.7 | 1.05 |
| SMTDR107-331K | 330.0 | 1 KHz | 815 | 1.5 | 0.9 |
| SMTDR107-391K | 390.0 | 1 KHz | 906 | 1.4 | 0.85 |
| SMTDR107-561K | 560.0 | 1 KHz | 1295 | 1.1 | 0.7 |
| SMTDR107-681K | 680.0 | 1 KHz | 1662 | 1.0 | 0.61 |
| SMTDR107-821K | 820.0 | 1 KHz | 1924 | 0.9 | 0.57 |

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