



## 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 :  $-30^{\circ}\text{C}$  to  $105^{\circ}\text{C}$ .

### 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<sub>dc</sub> 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<br>(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<br>(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<br>L<br>( $\mu$ H) | Test<br>Freq.<br>(0.25V) | DCR<br>(m $\Omega$ )<br>Max. | I sat<br>(A)<br>Max. | I rms<br>(A)<br>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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