

TDRH Series (Rev. 1.0)



Features

- * RoHS compliant
- * Available in magnetic shielding
- * Low DC resistance
- * Suitable for large currents
- * Ideal for DC-DC converter inductor applications
- * Available on tape and reel for automatic surface mounting

Product Identification

TDRH 74 - 6R8
1 2 3

1. Product Code
2. Size Code
3. Inductance: 6.8uH

Applications

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

Operating & Storage Condition

- * Operating Temp :Stand Type:-40 to +85°C
- * Storage Temp : Stand Type -40 to +85°C
- * Storage Life Time :12 months @25°C, RH 65%

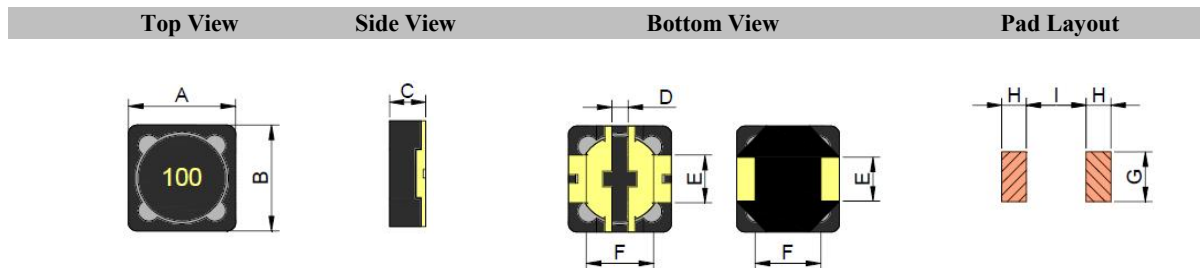
Test Equipment

- * HP4284A,HP42841A-L,IDC,Q,RDC
- * HP8753D NETWORK ANALYZER-SRF

Standard Atmospheric Conditions

- * Ambient Temp : 20+/-15°C
- * Relative Humidity : 65+/-20%

Dimension & Recommended Pad Layout: [mm]



| Size Code | A(±0.5) | B(±0.5) | C(max.) | D(ref.) | E(±0.5) | F(±0.2) | G(ref.) | H(ref.) | I(ref.) |
|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 62 | 6.3 | 6.3 | 3.0 | 1.0 | 1.5 | 4.6 | 1.9 | 1.3 | 4.2 |
| 64 | 6.3 | 6.3 | 5.0 | 1.0 | 1.5 | 4.6 | 1.9 | 1.3 | 4.2 |
| 73 | 7.3 | 7.3 | 3.5 | 1.3 | 2.0 | 4.8 | 2.4 | 1.7 | 4.4 |
| 74 | 7.3 | 7.3 | 4.5 | 1.2 | 2.0 | 4.8 | 2.4 | 1.7 | 4.4 |
| 124 | 12.0 | 12.0 | 5.0 | 1.5 | 5.0 | 7.6 | 5.6 | 2.8 | 7.0 |
| 125 | 12.0 | 12.0 | 6.0 | 1.5 | 5.0 | 7.6 | 5.6 | 2.8 | 7.0 |
| 127 | 12.0 | 12.0 | 8.0 | 1.5 | 5.0 | 7.6 | 5.6 | 2.8 | 7.0 |
| 129 | 12.0 | 12.0 | 10.0 | 1.5 | 5.0 | 7.6 | 5.6 | 2.8 | 7.0 |



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Electrical Characteristics

| L Code | Inductance (uH) | DCR (Ω) max. / Rated Current (A) max. | | | | | | | |
|--------|-----------------|--|------|-------|------|------|------|------|------|
| | | 62 | | 64 | | 73 | | 74 | |
| 1R2 | 1.2 | | | | | | | | |
| 1R5 | 1.5 | | | | | 18m | 3.40 | | |
| 1R8 | 1.8 | | | | | | | 18m | 5.50 |
| 2R2 | 2.2 | | | | | 25m | 3.00 | 24m | 4.00 |
| 3R3 | 3.3 | 68m | 1.94 | 30m | 2.20 | 34m | 3.50 | 30m | 3.60 |
| 3R5 | 3.5 | | | | | | | | |
| 3R9 | 3.9 | | | | | | | | |
| 4R7 | 4.7 | 80m | 1.63 | 40m | 1.80 | | | 44m | 2.70 |
| 5R6 | 5.6 | | | | | | | | |
| 6R1 | 6.1 | | | | | | | | |
| 6R8 | 6.8 | | | 0.09m | 1.80 | | | 46m | 2.40 |
| 7R6 | 7.6 | | | | | | | | |
| 8R2 | 8.2 | | | | | | | 48m | 2.00 |
| 100 | 10.0 | 0.15 | 1.10 | 0.12 | 1.35 | 72m | 1.68 | 49m | 1.84 |
| 120 | 12.0 | 0.20 | 1.00 | 0.13 | 1.20 | 98m | 1.52 | 58m | 1.71 |
| 150 | 15.0 | 0.23 | 0.90 | 0.18 | 1.10 | 0.13 | 1.33 | 81m | 1.47 |
| 180 | 18.0 | 0.27 | 0.80 | 0.24 | 1.00 | 0.14 | 1.20 | 91m | 1.31 |
| 220 | 22.0 | 0.34 | 0.74 | 0.27 | 0.91 | 0.19 | 1.07 | 0.11 | 1.23 |
| 270 | 27.0 | 0.38 | 0.66 | 0.30 | 0.82 | 0.21 | 0.96 | 0.15 | 1.12 |
| 330 | 33.0 | 0.45 | 0.59 | 0.33 | 0.75 | 0.24 | 0.91 | 0.17 | 0.96 |
| 390 | 39.0 | 0.49 | 0.54 | 0.37 | 0.69 | 0.32 | 0.77 | 0.23 | 0.91 |
| 470 | 47.0 | 0.69 | 0.50 | 0.52 | 0.62 | 0.36 | 0.76 | 0.26 | 0.88 |
| 560 | 56.0 | 0.78 | 0.46 | 0.56 | 0.58 | 0.47 | 0.68 | 0.35 | 0.75 |
| 680 | 68.0 | 1.07 | 0.42 | 0.63 | 0.52 | 0.52 | 0.61 | 0.38 | 0.69 |
| 820 | 82.0 | 1.21 | 0.38 | 0.71 | 0.47 | 0.69 | 0.57 | 0.43 | 0.61 |
| 101 | 100.0 | 1.39 | 0.34 | 1.03 | 0.43 | 0.79 | 0.50 | 0.61 | 0.60 |
| 121 | 120.0 | 1.90 | 0.31 | 1.15 | 0.39 | 0.89 | 0.49 | 0.66 | 0.52 |
| 151 | 150.0 | 2.18 | 0.28 | 1.68 | 0.35 | 1.27 | 0.43 | 0.88 | 0.46 |
| 181 | 180.0 | 2.77 | 0.26 | 1.87 | 0.32 | 1.45 | 0.39 | 0.98 | 0.42 |
| 221 | 220.0 | 3.12 | 0.23 | 2.08 | 0.29 | 1.65 | 0.35 | 1.17 | 0.36 |
| 271 | 270.0 | 4.38 | 0.22 | 2.37 | 0.26 | 2.31 | 0.32 | 1.64 | 0.34 |
| 331 | 330.0 | 4.94 | 0.19 | 2.67 | 0.23 | 2.62 | 0.28 | 1.86 | 0.32 |
| 391 | 390.0 | | | 2.94 | 0.22 | 2.94 | 0.26 | 2.85 | 0.29 |
| 471 | 470.0 | | | 3.39 | 0.20 | 4.18 | 0.24 | 3.01 | 0.26 |
| 561 | 560.0 | | | 5.43 | 0.18 | 4.67 | 0.22 | 3.62 | 0.23 |
| 681 | 680.0 | | | 7.32 | 0.17 | 5.73 | 0.19 | 4.63 | 0.22 |
| 821 | 820.0 | | | 8.24 | 0.15 | 6.54 | 0.18 | 5.20 | 0.20 |
| 102 | 1000.0 | | | 9.26 | 0.14 | 9.44 | 0.16 | 6.00 | 0.18 |

* Test Condition: 1.0~8.2 uH ($\pm 30\%$) @100KHz / 0.3V; 10uH and above ($\pm 20\%$) @1KHz / 0.3V

* Rated Current: the current at which the inductance decreases by 25% from the initial value; or the current at which temperature rise is $\Delta T \leq 40^\circ\text{C}$ ($T_a = 20^\circ\text{C}$), whichever is smaller.



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Electrical Characteristics

| L Code | Inductance (uH) | DCR (Ω) max./ Rated Current (A) max. | | | | | | | |
|--------|-----------------|---|------|-------|------|-------|-------|-------|-------|
| | | 124 | | 125 | | 127 | | 129 | |
| 1R0 | 1.0 | 8.0m | 7.80 | 11.0m | 8.50 | 6.5m | 10.40 | 5.0m | 16.00 |
| 1R5 | 1.5 | 11.0m | 7.20 | 13.0m | 7.50 | 7.0m | 9.80 | 5.0m | 15.10 |
| 2R2 | 2.2 | 13.0m | 6.00 | 15.5m | 6.50 | 11.5m | 8.00 | 6.0m | 13.20 |
| 2R4 | 2.4 | | | | | 11.5m | 8.00 | | |
| 3R3 | 3.3 | 21.0m | 6.00 | 18.0m | 5.70 | 13.5m | 7.50 | 7.0m | 11.90 |
| 3R5 | 3.5 | | | | | 13.5m | 7.50 | | |
| 3R9 | 3.9 | 21.0m | 5.10 | | | | | | |
| 4R7 | 4.7 | 22.0m | 4.80 | 20.5m | 4.70 | 15.8m | 6.80 | 8.0m | 10.80 |
| 5R6 | 5.6 | | | | | | | 10.0m | 9.60 |
| 6R1 | 6.1 | | | | | 17.6m | 6.60 | | |
| 6R8 | 6.8 | 26.0m | 4.20 | 25.0m | 4.50 | 19.0m | 6.60 | 12.0m | 8.70 |
| 7R6 | 7.6 | | | | | 20.0m | 5.90 | | |
| 8R2 | 8.2 | 31.0m | 4.00 | | | 20.0m | 5.60 | | |
| 100 | 10.0 | 39.0m | 3.90 | 25.0m | 4.00 | 21.6m | 5.40 | 17.0m | 8.00 |
| 120 | 12.0 | 44.0m | 3.40 | 27.0m | 3.50 | 24.3m | 4.90 | | |
| 150 | 15.0 | 55.0m | 3.20 | 30.0m | 3.30 | 27.0m | 4.50 | 28.0m | 7.00 |
| 180 | 18.0 | 65.0m | 2.90 | 34.0m | 3.00 | 39.2m | 3.90 | | |
| 220 | 22.0 | 75.0m | 2.50 | 36.0m | 2.80 | 43.2m | 3.60 | 32.0m | 5.60 |
| 270 | 27.0 | 86.0m | 2.25 | 51.0m | 2.30 | 45.9m | 3.40 | | |
| 330 | 33.0 | 0.112 | 2.00 | 57.0m | 2.10 | 64.8m | 3.00 | 51.0m | 4.80 |
| 390 | 39.0 | 0.121 | 1.90 | 68.0m | 2.00 | 72.9m | 2.75 | | |
| 470 | 47.0 | 0.160 | 1.80 | 75.0m | 1.80 | 0.100 | 2.50 | 78.0m | 3.90 |
| 560 | 56.0 | 0.190 | 1.70 | 0.110 | 1.70 | 0.110 | 2.35 | | |
| 680 | 68.0 | 0.220 | 1.50 | 0.120 | 1.50 | 0.140 | 2.10 | 0.105 | 2.70 |
| 820 | 82.0 | 0.260 | 1.30 | 0.140 | 1.40 | 0.160 | 1.95 | | |
| 101 | 100 | 0.308 | 1.20 | 0.160 | 1.30 | 0.220 | 1.70 | 0.150 | 2.10 |
| 121 | 120 | 0.380 | 1.10 | 0.170 | 1.10 | 0.250 | 1.60 | | |
| 151 | 150 | 0.530 | 0.95 | 0.230 | 1.00 | 0.280 | 1.42 | | |
| 181 | 180 | 0.620 | 0.85 | 0.290 | 0.90 | 0.350 | 1.30 | | |
| 221 | 220 | 0.700 | 0.80 | 0.400 | 0.80 | 0.420 | 1.16 | | |
| 271 | 270 | 0.870 | 0.60 | 0.460 | 0.75 | 0.560 | 1.06 | | |
| 331 | 330 | 0.990 | 0.50 | 0.510 | 0.68 | 0.640 | 0.95 | | |
| 391 | 390 | | | 0.690 | 0.65 | 0.700 | 0.88 | | |
| 471 | 470 | | | 0.770 | 0.58 | 0.980 | 0.79 | | |
| 561 | 560 | | | 0.860 | 0.54 | 1.070 | 0.73 | | |
| 681 | 680 | | | 1.200 | 0.48 | 1.460 | 0.67 | | |
| 821 | 820 | | | 1.340 | 0.43 | 1.640 | 0.60 | | |
| 102 | 1000 | | | 1.530 | 0.40 | 1.820 | 0.55 | 1.220 | 0.79 |
| 122 | 1200 | | | | | | | 1.330 | 0.78 |
| 152 | 1500 | | | | | | | 1.990 | 0.58 |
| 182 | 1800 | | | | | | | 2.180 | 0.54 |
| 222 | 2200 | | | | | | | 2.580 | 0.52 |

* Test Condition: 1.0~8.2 uH ($\pm 30\%$) @100KHz / 0.3V; 10uH and above ($\pm 20\%$) @1KHz / 0.3V

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