

FSD series (Rev. 4.0)



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

FSD 53 - 100 M
1 2 3 4

1. Product Code
2. Size Code: 5.0 * 5.0 * 3.0mm
3. Inductance: 10uH
4. Tolerance: M=±20%, N=±30%

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 +105 ℃
- * Storage Temp : Stand Type:-40 to +105 ℃
- * Storage Life Time :12 Months @25 ℃,RH 65%

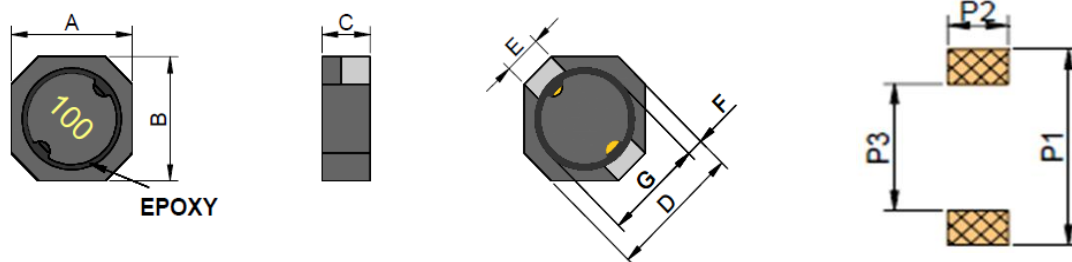
Test Equipment :

- * HP4284A,HP42841A-L,IDC,Q,RDC
- * HP8753D Network Analyzer-SRF

Standard Atmospheric Conditions :

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

Dimension & Recommended PAD Layout: [mm]



| Size Code | A(ref.) | B(ref.) | C(ref.) | D(±0.3) | E(ref.) | F(ref.) | G(ref.) | P1 | P2 | P3 |
|-----------|---------|---------|---------|---------|---------|---------|---------|-----|-----|-----|
| FSD31 | 3.85 | 3.85 | 1.30 | 3.80 | 1.6 | 0.5 | 3.2 | 4.9 | 1.7 | 2.5 |
| FSD32 | 3.85 | 3.85 | 2.00 | 4.10 | 1.6 | 0.5 | 3.2 | 4.9 | 1.7 | 2.5 |
| FSD33 | 3.85 | 3.85 | 3.00 | 3.90 | 1.6 | 0.5 | 3.2 | 4.9 | 1.7 | 2.5 |
| FSD52 | 5.00 | 5.00 | 2.00 | 5.50 | 1.6 | 0.5 | 4.2 | 6.5 | 1.8 | 3.4 |
| FSD53 | 5.00 | 5.00 | 3.00 | 5.50 | 1.6 | 0.5 | 4.2 | 6.5 | 1.8 | 3.4 |

FSD series (Rev. 4.0)

Electrical Characteristics

| L Code | L (uH) | Tolerance (±%) | DCR (mΩ) max. / IDC (A) max. | | | | | | | | | | | |
|-----------|-----------|-------------------|------------------------------|------|-----------|-------|-----------|------|------------|------|-----------|------|-----------|------|
| | | | FSD 31 | | FSD 32 | | FSD 33 | | FSD 33H | | FSD 52 | | FSD 53 | |
| R47N | 0.47 | 30 | | | 17 | 1.84 | | | | | 15 | 2.33 | | |
| 1R0N | 1.00 | 30 | 60 | 1.60 | 30 | 1.80 | 9 | 1.90 | | | 24 | 2.27 | 15 | 4.00 |
| 1R2N | 1.20 | 30 | 65 | 1.40 | 83 | 1.70 | 10 | 1.75 | | | 44 | 2.15 | 22 | 3.80 |
| 1R5N | 1.50 | 30 | 77 | 1.24 | 52 | 1.60 | 13 | 1.45 | 15 | 1.90 | | | 22 | 3.80 |
| 1R8N | 1.80 | 30 | 93 | 1.22 | 56 | 1.55 | | | 18 | 1.76 | | | | |
| 2R0N | 2.00 | 30 | | | | | 16 | 1.25 | | | 46 | 1.90 | 27 | 2.92 |
| 2R2N | 2.20 | 30 | 125 | 1.20 | 58 | 1.50 | 17 | 1.15 | | | 59 | 1.63 | 29 | 2.41 |
| 2R4N | 2.40 | 30 | 139 | 0.98 | | | 22 | 1.65 | | | | | | |
| 2R5N | 2.50 | 30 | | | 59 | 1.40 | 18 | 1.05 | | | | | | |
| 2R7N | 2.70 | 30 | | | 60 | 1.35 | 20 | 1.00 | 28 | 1.45 | | | | |
| 3R3N | 3.30 | 30 | 187 | 0.89 | 64 | 1.30 | 24 | 0.96 | 32 | 1.44 | 62 | 1.50 | 34 | 2.36 |
| 3R5N | 3.50 | 30 | 210 | 0.85 | 127 | 1.30 | 25 | 0.95 | | | 73 | 1.34 | | |
| 3R6N | 3.60 | 30 | | | | | | | 35 | 1.43 | | | | |
| 3R9N | 3.90 | 30 | 220 | 0.78 | | | 33 | 0.87 | 37 | 1.32 | | | | |
| 4R3N | 4.30 | 30 | | | | | | | 43 | 1.00 | | | | |
| 4R7N | 4.70 | 30 | 240 | 0.71 | 146 | 11.00 | 39 | 0.78 | 45 | 0.97 | 87 | 1.14 | 45 | 1.87 |
| 5R1N | 5.10 | 30 | | | | | | | 46 | 0.94 | | | | |
| 5R6N | 5.60 | 30 | 320 | 0.62 | 176 | 0.95 | 44 | 0.74 | | | | | 52 | 1.60 |
| 6R2N | 6.20 | 30 | | | 220 | 0.91 | | | | | | | 62 | 1.55 |
| 6R8N | 6.80 | 30 | 350 | 0.57 | 238 | 0.90 | 51 | 0.68 | 65 | 0.87 | 105 | 0.95 | 68 | 1.51 |
| 8R2N | 8.20 | 30 | 470 | 0.52 | 272 | 0.80 | 65 | 0.57 | 91 | 0.77 | 139 | 0.90 | 75 | 1.40 |
| 100M | 10.00 | 20 | 570 | 0.47 | 299 | 0.70 | 92 | 0.43 | 105 | 0.70 | 150 | 0.76 | 90 | 1.33 |
| 120M | 12.00 | 20 | 750 | 0.43 | 355 | 0.65 | 100 | 0.38 | 119 | 0.67 | | | 100 | 1.15 |
| 150M | 15.00 | 20 | 810 | 0.38 | 472 | 0.61 | 113 | 0.33 | 140 | 0.54 | 210 | 0.63 | 142 | 1.05 |
| 180M | 18.00 | 20 | 1060 | 0.35 | 500 | 0.58 | 125 | 0.30 | 175 | 0.50 | | | 162 | 0.95 |
| 220M | 22.00 | 20 | 1150 | 0.32 | 592 | 0.52 | 146 | 0.28 | 201 | 0.48 | 275 | 0.56 | 208 | 0.86 |
| 270M | 27.00 | 20 | 1670 | 0.29 | 630 | 0.44 | 176 | 0.26 | 227 | 0.40 | | | 238 | 0.80 |
| 330M | 33.00 | 20 | 1840 | 0.28 | 1075 | 0.43 | 214 | 0.23 | 287 | 0.35 | 455 | 0.44 | 257 | 0.72 |
| 390M | 39.00 | 20 | 2310 | 0.25 | | | 225 | 0.21 | 341 | 0.33 | | | 320 | 0.65 |
| 470M | 47.00 | 20 | 2630 | 0.22 | 1309 | 0.34 | 304 | 0.19 | 430 | 0.32 | 730 | 0.35 | 352 | 0.62 |
| 560M | 56.00 | 20 | 2860 | 0.20 | 1800 | 0.30 | 324 | 0.17 | 471 | 0.30 | | | 500 | 0.62 |
| 680M | 68.00 | 20 | 3940 | 0.18 | 2316 | 0.25 | 472 | 0.16 | 532 | 0.27 | 935 | 0.30 | 525 | 0.51 |
| 820M | 82.00 | 20 | 4900 | 0.16 | 2950 | 0.20 | 539 | 0.14 | 675 | 0.23 | | | 770 | 0.48 |
| 101M | 100.00 | 20 | 5740 | 0.14 | 3255 | 0.19 | 608 | 0.13 | 850 | 0.21 | 1500 | 0.23 | 801 | 0.43 |
| 121M | 120.00 | 20 | 7310 | 0.13 | 3350 | 0.15 | 757 | 0.12 | 1100 | 0.20 | 1910 | 0.22 | 850 | 0.34 |
| 151M | 150.00 | 20 | 9080 | 0.12 | 3500 | 0.12 | 882 | 0.11 | 1230 | 0.17 | 2680 | 0.21 | 1100 | 0.26 |
| 181M | 180.00 | 20 | 9500 | 0.11 | 4000 | 0.11 | 1130 | 0.09 | 1560 | 0.15 | 3040 | 0.20 | 1190 | 0.24 |
| 221M | 220.00 | 20 | | | 4800 | 0.10 | 1269 | 0.09 | 1800 | 0.14 | 3520 | 0.20 | 1530 | 0.20 |
| 271M | 270.00 | 20 | | | 5100 | 0.09 | 1570 | 0.08 | 2200 | 0.13 | 4380 | 0.19 | 1960 | 0.19 |
| 331M | 330.00 | 20 | | | 7280 | 0.08 | 1930 | 0.08 | 2640 | 0.12 | 5560 | 0.19 | 2030 | 0.19 |

* Test Condition: 0.47-8.2uH @100KHz/ 0.25V; 10uH and above @1KHz/ 0.25V.

* Irms DC current (A) that will cause an approximate ΔT of 40°C

* Isat DC current (A) that will cause L to drop approximately 25%

* Tolerance: M= ±20%, N= ±30%