

# DUAL WINDING, SHIELDING INDUCTORS

## SDRH0704D SERIES

### Description:

- Four sizes of shielded drum core inductors
- Windings can be connected in series or parallel offering a broad range of inductance and current ratings
- Surface Mount

### Packaging:

- Supplied in tape and reel packaging 1350 (DRQ73), 1100 (DRQ74) 600 (DRQ125), and 350 (DRQ127) per reel

### Applications:

- As a transformer: SEPIC, flyback
- As an inductor: buck, boost, coupled inductor
- DC-DC converters
- VRM inductor for CPU and DDR power supplies
- Input and output filter chokes

## ELECTRICAL CHARACTERISTICS:

| Part Number    | Rated Inductance (uH) | Parallel ratings |                        |                        |           |              | Series ratings  |                        |                        |           |              |
|----------------|-----------------------|------------------|------------------------|------------------------|-----------|--------------|-----------------|------------------------|------------------------|-----------|--------------|
|                |                       | OCL ±20% (uH) ①  | I <sub>rms</sub> (A) ② | I <sub>sat</sub> (A) ③ | DCR (Ω) ④ | Volt u-sec ⑤ | OCL ±20% (uH) ① | I <sub>rms</sub> (A) ② | I <sub>sat</sub> (A) ③ | DCR (Ω) ④ | Volt u-sec ⑤ |
| SDRH0704D-R33M | 0.33                  | 0.294            | 6.20                   | 18.4                   | 0.0074    | 1.71         | 1.176           | 3.10                   | 9.18                   | 0.0295    | 3.42         |
| SDRH0704D-1R0M | 1.0                   | 0.952            | 5.33                   | 10.2                   | 0.0100    | 3.08         | 3.808           | 2.66                   | 5.10                   | 0.0400    | 6.16         |
| SDRH0704D-1R5M | 1.5                   | 1.422            | 4.96                   | 8.35                   | 0.0115    | 3.76         | 5.688           | 2.48                   | 4.17                   | 0.0461    | 7.52         |
| SDRH0704D-2R2M | 2.2                   | 1.986            | 4.66                   | 7.06                   | 0.0130    | 4.45         | 7.944           | 2.33                   | 3.53                   | 0.0521    | 8.9          |
| SDRH0704D-3R3M | 3.3                   | 3.396            | 3.94                   | 5.40                   | 0.0183    | 5.81         | 13.58           | 1.97                   | 2.70                   | 0.0732    | 11.6         |
| SDRH0704D-4R7M | 4.7                   | 5.182            | 3.34                   | 4.37                   | 0.0254    | 7.18         | 20.73           | 1.67                   | 2.19                   | 0.102     | 14.4         |
| SDRH0704D-6R8M | 6.8                   | 7.344            | 2.60                   | 3.67                   | 0.0418    | 8.55         | 29.38           | 1.30                   | 1.84                   | 0.167     | 17.1         |
| SDRH0704D-8R2M | 8.2                   | 8.566            | 2.53                   | 3.40                   | 0.0441    | 9.23         | 34.26           | 1.27                   | 1.70                   | 0.177     | 18.5         |
| SDRH0704D-100M | 10                    | 9.882            | 2.41                   | 3.17                   | 0.0489    | 9.92         | 39.53           | 1.20                   | 1.58                   | 0.196     | 19.8         |
| SDRH0704D-150M | 15                    | 16.09            | 2.11                   | 2.48                   | 0.0637    | 12.7         | 64.36           | 1.05                   | 1.24                   | 0.255     | 25.4         |
| SDRH0704D-220M | 22                    | 21.73            | 1.75                   | 2.13                   | 0.0925    | 14.7         | 86.92           | 0.874                  | 1.07                   | 0.371     | 29.4         |
| SDRH0704D-330M | 33                    | 33.01            | 1.41                   | 1.73                   | 0.143     | 18.1         | 132.0           | 0.702                  | 0.87                   | 0.574     | 36.2         |
| SDRH0704D-470M | 47                    | 49.64            | 1.15                   | 1.41                   | 0.216     | 22.2         | 198.6           | 0.573                  | 0.71                   | 0.865     | 44.4         |
| SDRH0704D-680M | 68                    | 69.67            | 1.03                   | 1.19                   | 0.265     | 26.3         | 278.7           | 0.517                  | 0.60                   | 1.06      | 52.6         |
| SDRH0704D-820M | 82                    | 80.95            | 0.91                   | 1.11                   | 0.345     | 28.4         | 323.8           | 0.453                  | 0.55                   | 1.38      | 56.8         |
| SDRH0704D-101M | 100                   | 101.6            | 0.86                   | 0.99                   | 0.383     | 31.8         | 406.4           | 0.430                  | 0.49                   | 1.53      | 63.6         |
| SDRH0704D-151M | 150                   | 150.0            | 0.69                   | 0.81                   | 0.591     | 38.6         | 600.0           | 0.346                  | 0.41                   | 2.37      | 77.2         |
| SDRH0704D-221M | 220                   | 227.0            | 0.56                   | 0.66                   | 0.907     | 47.5         | 908.0           | 0.279                  | 0.33                   | 3.63      | 95           |
| SDRH0704D-331M | 330                   | 335.6            | 0.45                   | 0.54                   | 1.41      | 57.8         | 1342            | 0.224                  | 0.27                   | 5.66      | 116          |
| SDRH0704D-471M | 470                   | 465.3            | 0.40                   | 0.46                   | 1.74      | 68.1         | 1861            | 0.202                  | 0.23                   | 6.97      | 136          |
| SDRH0704D-681M | 680                   | 671.2            | 0.33                   | 0.38                   | 2.58      | 81.7         | 2685            | 0.166                  | 0.19                   | 10.3      | 163          |
| SDRH0704D-821M | 820                   | 812.7            | 0.31                   | 0.35                   | 2.93      | 89.9         | 3251            | 0.156                  | 0.17                   | 11.7      | 180          |
| SDRH0704D-102M | 1000                  | 1009             | 0.27                   | 0.31                   | 3.89      | 100          | 4036            | 0.135                  | 0.16                   | 15.6      | 200          |

1) Open Circuit Inductance Test Parameters: 100kHz, 0.25 Vrms, 0.0 Adc Parallel: (1,2 -4,3) Series: (1-4) tie (2-3)

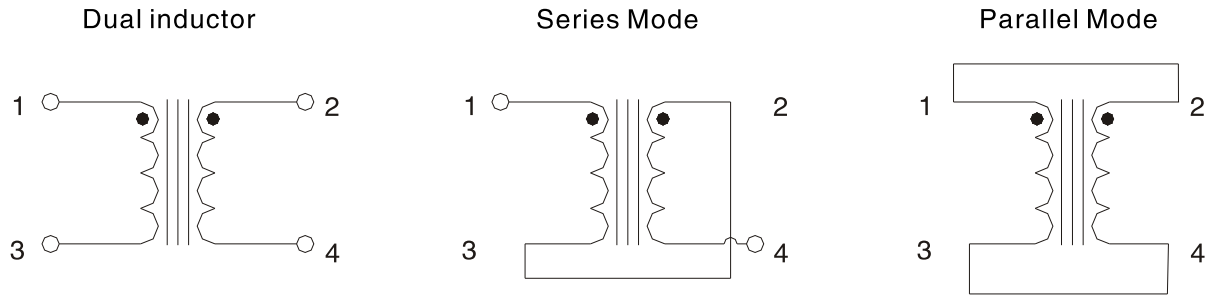
2) RMS current for an approximate DT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.

3) Peak current for approximately 30% roll-off at 20°C

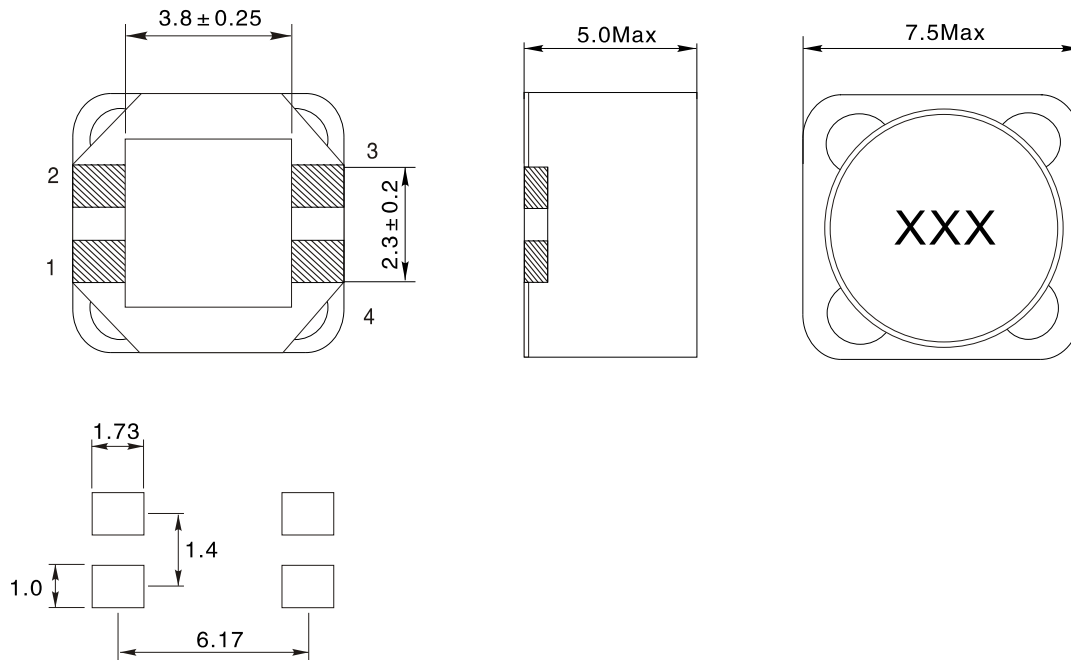
4) DCR limits @ 20°C

5) Applied Volt-Time product (V-μ S) across the inductor. This value represents the applied V-μ Sat 100KHz necessary to generate a core loss equal to 10% of the total losses for a 40° C temperature rise.

## SCHEMATIC



## PHYSICAL CHARACTERISTICS(Dimensions:mm)



Recommended Land Pattern

### Notes:

1. 200Vac Isolation between windings
2. Storage temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
3. Operating temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (range is application specific).
4. Solder reflow temperature:  $260^{\circ}\text{C}$  max. for 10 seconds max.
5. Turns Ratio (1:3):(2-4)=1:1
6. All specifications subject to change without notice.