

## Inductors, Miniature, Shielded, Axial Leaded



### ELECTRICAL SPECIFICATIONS

**Inductance Tolerance:**  $\pm 10\%$  on Q-meter for 0.10  $\mu\text{H}$  to 22  $\mu\text{H}$   $\pm 5\%$  on 1KC bridge for 27  $\mu\text{H}$  to 1000  $\mu\text{H}$   $\pm 10\%$  on 1KC bridge for 1200  $\mu\text{H}$  to 56 000  $\mu\text{H}$

**Dielectric Strength:** 700  $V_{\text{RMS}}$  at sea level

**Operating Temperature:**  $-55\text{ }^{\circ}\text{C}$  to  $+125\text{ }^{\circ}\text{C}$

**Self-Resonant Frequency:** Minimum SRF measured with full length leads on grid-dip meter

**Q:** Measured on a Q-meter

**Maximum Current:** Based on temperature rise not to exceed  $40\text{ }^{\circ}\text{C}$  at  $+85\text{ }^{\circ}\text{C}$  ambient

### FEATURES

- Miniature shielded inductor
- High inductance-to-size ratio
- Inductance range is 0.10  $\mu\text{H}$  to 56 000  $\mu\text{H}$
- Encapsulated non-flammable shielded unit
- 0.164" [4.17 mm] diameter by 0.450" [11.43 mm] long envelope
- Offers extremely high inductance for density packaging
- Compliant to RoHS Directive 2002/95/EC



**RoHS**  
COMPLIANT

### MECHANICAL SPECIFICATIONS

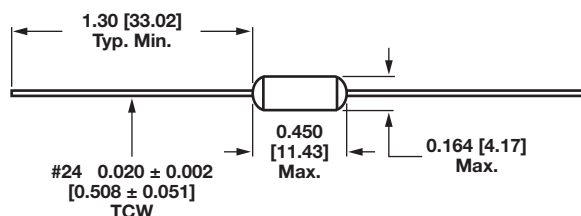
**Terminal Strength:** Meets 5 lb pull test

### DENSITY SPECIFICATIONS

**Weight:** 0.75 g maximum

**Shielding:** Less than 3 % coupling with two units mounted side by side at 1000 cycles

### DIMENSIONS in inches [millimeters]



### STANDARD ELECTRICAL SPECIFICATIONS

| MODEL      | IND. ( $\mu\text{H}$ ) | TOL. (%) | Q MIN. | TEST FREQUENCY Q (MHz) | SRF MIN. (MHz) | DCR MAX. ( $\Omega$ ) | RATED DC CURRENT (mA) | INCREMENTAL CURRENT (mA) <sup>(1)</sup> |          |
|------------|------------------------|----------|--------|------------------------|----------------|-----------------------|-----------------------|-----------------------------------------|----------|
| IMS-5WD-40 | 0.10                   | $\pm 10$ | 55     | 25                     | 400            | 0.020                 | 4000                  | 4000                                    | PHENOLIC |
| IMS-5WD-40 | 0.12                   | $\pm 10$ | 55     | 25                     | 400            | 0.029                 | 3350                  | 3350                                    |          |
| IMS-5WD-40 | 0.15                   | $\pm 10$ | 55     | 25                     | 400            | 0.032                 | 3000                  | 3000                                    |          |
| IMS-5WD-40 | 0.18                   | $\pm 10$ | 50     | 25                     | 366            | 0.040                 | 2850                  | 2850                                    |          |
| IMS-5WD-40 | 0.22                   | $\pm 10$ | 56     | 25                     | 331            | 0.045                 | 2700                  | 2700                                    |          |
| IMS-5WD-40 | 0.27                   | $\pm 10$ | 50     | 25                     | 298            | 0.08                  | 2000                  | 2000                                    |          |
| IMS-5WD-40 | 0.33                   | $\pm 10$ | 48     | 25                     | 270            | 0.09                  | 1900                  | 1900                                    |          |
| IMS-5WD-40 | 0.39                   | $\pm 10$ | 48     | 25                     | 248            | 0.16                  | 1420                  | 1420                                    |          |
| IMS-5WD-40 | 0.47                   | $\pm 10$ | 48     | 25                     | 226            | 0.17                  | 1400                  | 1400                                    |          |
| IMS-5WD-40 | 0.56                   | $\pm 10$ | 45     | 25                     | 206            | 0.36                  | 960                   | 960                                     |          |
| IMS-5WD-40 | 0.68                   | $\pm 10$ | 45     | 25                     | 188            | 0.37                  | 940                   | 940                                     | IRON     |
| IMS-5WD-40 | 0.82                   | $\pm 10$ | 41     | 25                     | 171            | 0.46                  | 870                   | 870                                     |          |
| IMS-5WD-40 | 1.0                    | $\pm 10$ | 42     | 7.9                    | 131            | 0.062                 | 2300                  | 2300                                    |          |
| IMS-5WD-40 | 1.2                    | $\pm 10$ | 43     | 7.9                    | 120            | 0.067                 | 2200                  | 2200                                    |          |
| IMS-5WD-40 | 1.5                    | $\pm 10$ | 41     | 7.9                    | 108            | 0.16                  | 1420                  | 1420                                    |          |
| IMS-5WD-40 | 1.8                    | $\pm 10$ | 42     | 7.9                    | 99             | 0.17                  | 1370                  | 1370                                    |          |
| IMS-5WD-40 | 2.2                    | $\pm 10$ | 42     | 7.9                    | 90             | 0.19                  | 1300                  | 1300                                    |          |
| IMS-5WD-40 | 2.7                    | $\pm 10$ | 41     | 7.9                    | 86             | 0.20                  | 1270                  | 1270                                    |          |
| IMS-5WD-40 | 3.3                    | $\pm 10$ | 40     | 7.9                    | 73             | 0.31                  | 1030                  | 1030                                    |          |

#### Note

<sup>(1)</sup> Incremental current: The DC current required to cause a 5 % reduction in the nominal inductance value

| STANDARD ELECTRICAL SPECIFICATIONS |                    |             |           |                           |                   |                          |                             |                                               |         |
|------------------------------------|--------------------|-------------|-----------|---------------------------|-------------------|--------------------------|-----------------------------|-----------------------------------------------|---------|
| MODEL                              | IND.<br>( $\mu$ H) | TOL.<br>(%) | Q<br>MIN. | TEST FREQUENCY Q<br>(MHz) | SRF MIN.<br>(MHz) | DCR MAX.<br>( $\Omega$ ) | RATED DC<br>CURRENT<br>(mA) | INCREMENTAL<br>CURRENT<br>(mA) <sup>(1)</sup> |         |
| IMS-5WD-40                         | 3.9                | $\pm 10$    | 40        | 7.9                       | 68                | 0.33                     | 1000                        | 1000                                          | IRON    |
| IMS-5WD-40                         | 4.7                | $\pm 10$    | 40        | 7.9                       | 61                | 0.58                     | 750                         | 750                                           |         |
| IMS-5WD-40                         | 5.6                | $\pm 10$    | 40        | 7.9                       | 56                | 0.64                     | 710                         | 710                                           |         |
| IMS-5WD-40                         | 6.8                | $\pm 10$    | 40        | 7.9                       | 51                | 0.68                     | 680                         | 680                                           |         |
| IMS-5WD-40                         | 8.2                | $\pm 10$    | 45        | 2.5                       | 46                | 1.3                      | 500                         | 500                                           |         |
| IMS-5WD-40                         | 10                 | $\pm 10$    | 46        | 2.5                       | 42                | 1.4                      | 480                         | 480                                           |         |
| IMS-5WD-40                         | 12                 | $\pm 10$    | 47        | 2.5                       | 38                | 1.5                      | 460                         | 460                                           |         |
| IMS-5WD-40                         | 15                 | $\pm 10$    | 47        | 2.5                       | 34                | 1.7                      | 440                         | 440                                           |         |
| IMS-5WD-40                         | 18                 | $\pm 10$    | 45        | 2.5                       | 43                | 0.88                     | 610                         | 235                                           | FERRITE |
| IMS-5WD-40                         | 22                 | $\pm 10$    | 47        | 2.5                       | 38                | 0.95                     | 590                         | 220                                           |         |
| IMS-5WD-40                         | 27                 | $\pm 10$    | 42        | 2.5                       | 35                | 1.15                     | 530                         | 200                                           |         |
| IMS-5WD-40                         | 33                 | $\pm 10$    | 43        | 2.5                       | 32                | 1.2                      | 520                         | 193                                           |         |
| IMS-5WD-40                         | 39                 | $\pm 10$    | 45        | 2.5                       | 30                | 1.6                      | 450                         | 183                                           |         |
| IMS-5WD-40                         | 47                 | $\pm 10$    | 46        | 2.5                       | 26                | 1.8                      | 420                         | 177                                           |         |
| IMS-5WD-40                         | 56                 | $\pm 10$    | 40        | 2.5                       | 24                | 2.2                      | 390                         | 170                                           |         |
| IMS-5WD-40                         | 68                 | $\pm 10$    | 40        | 2.5                       | 22                | 2.3                      | 375                         | 165                                           |         |
| IMS-5WD-40                         | 82                 | $\pm 10$    | 42        | 0.79                      | 14                | 2.4                      | 360                         | 160                                           |         |
| IMS-5WD-40                         | 100                | $\pm 10$    | 63        | 0.79                      | 12                | 2.6                      | 345                         | 157                                           |         |
| IMS-5WD-40                         | 120                | $\pm 10$    | 62        | 0.79                      | 11                | 2.9                      | 330                         | 145                                           |         |
| IMS-5WD-40                         | 150                | $\pm 10$    | 63        | 0.79                      | 10                | 3.3                      | 315                         | 126                                           |         |
| IMS-5WD-40                         | 180                | $\pm 10$    | 60        | 0.79                      | 9.2               | 3.6                      | 300                         | 110                                           |         |
| IMS-5WD-40                         | 220                | $\pm 10$    | 57        | 0.79                      | 8.8               | 4.1                      | 280                         | 105                                           |         |
| IMS-5WD-40                         | 270                | $\pm 10$    | 52        | 0.79                      | 8.0               | 4.8                      | 260                         | 91                                            |         |
| IMS-5WD-40                         | 330                | $\pm 10$    | 50        | 0.79                      | 7.2               | 5.6                      | 240                         | 87                                            |         |
| IMS-5WD-40                         | 390                | $\pm 10$    | 43        | 0.79                      | 6.8               | 6.2                      | 230                         | 72                                            |         |
| IMS-5WD-40                         | 470                | $\pm 10$    | 66        | 0.79                      | 6.4               | 10.0                     | 180                         | 67                                            |         |
| IMS-5WD-40                         | 560                | $\pm 10$    | 64        | 0.79                      | 6.0               | 11.5                     | 170                         | 65                                            |         |
| IMS-5WD-40                         | 680                | $\pm 10$    | 71        | 0.79                      | 5.2               | 12.0                     | 160                         | 60                                            |         |
| IMS-5WD-40                         | 820                | $\pm 10$    | 67        | 0.79                      | 4.8               | 13.8                     | 150                         | 55                                            |         |
| IMS-5WD-40                         | 1000               | $\pm 10$    | 62        | 0.250                     | 4.5               | 16.0                     | 140                         | 52                                            |         |
| IMS-5WD-40                         | 1200               | $\pm 10$    | 52        | 0.250                     | 1.2               | 18.2                     | 135                         | 50                                            |         |
| IMS-5WD-40                         | 1500               | $\pm 10$    | 51        | 0.250                     | 1.2               | 23.7                     | 118                         | 48                                            |         |
| IMS-5WD-40                         | 1800               | $\pm 10$    | 51        | 0.250                     | 1.1               | 30.2                     | 105                         | 42                                            |         |
| IMS-5WD-40                         | 2200               | $\pm 10$    | 50        | 0.250                     | 1.0               | 33.7                     | 99                          | 37                                            |         |
| IMS-5WD-40                         | 2700               | $\pm 10$    | 51        | 0.250                     | 0.94              | 43.1                     | 87                          | 33                                            |         |
| IMS-5WD-40                         | 3300               | $\pm 10$    | 52        | 0.250                     | 0.84              | 48.7                     | 82                          | 30                                            |         |
| IMS-5WD-40                         | 3900               | $\pm 10$    | 48        | 0.250                     | 0.77              | 62.7                     | 72                          | 29                                            |         |
| IMS-5WD-40                         | 4700               | $\pm 10$    | 48        | 0.250                     | 0.67              | 70.5                     | 68                          | 28                                            |         |
| IMS-5WD-40                         | 5600               | $\pm 10$    | 48        | 0.250                     | 0.65              | 104                      | 56                          | 24                                            |         |
| IMS-5WD-40                         | 6800               | $\pm 10$    | 45        | 0.250                     | 0.59              | 118                      | 53                          | 20                                            |         |
| IMS-5WD-40                         | 8200               | $\pm 10$    | 38        | 0.250                     | 0.46              | 146                      | 47                          | 18                                            |         |
| IMS-5WD-40                         | 10 000             | $\pm 10$    | 36        | 0.079                     | 0.38              | 76.6                     | 66                          | 15                                            |         |
| IMS-5WD-40                         | 12 000             | $\pm 10$    | 36        | 0.079                     | 0.30              | 109                      | 55                          | 14                                            |         |
| IMS-5WD-40                         | 15 000             | $\pm 10$    | 38        | 0.079                     | 0.26              | 119                      | 52                          | 13                                            |         |
| IMS-5WD-40                         | 18 000             | $\pm 10$    | 38        | 0.079                     | 0.24              | 138                      | 49                          | 13                                            |         |
| IMS-5WD-40                         | 22 000             | $\pm 10$    | 32        | 0.079                     | 0.23              | 219                      | 39                          | 12                                            |         |
| IMS-5WD-40                         | 27 000             | $\pm 10$    | 32        | 0.079                     | 0.22              | 259                      | 35                          | 12                                            |         |
| IMS-5WD-40                         | 33 000             | $\pm 10$    | 32        | 0.079                     | 0.20              | 296                      | 33                          | 11                                            |         |
| IMS-5WD-40                         | 39 000             | $\pm 10$    | 30        | 0.079                     | 0.17              | 395                      | 29                          | 10                                            |         |
| IMS-5WD-40                         | 47 000             | $\pm 10$    | 25        | 0.079                     | 0.16              | 452                      | 27                          | 9                                             |         |
| IMS-5WD-40                         | 56 000             | $\pm 10$    | 25        | 0.079                     | 0.15              | 499                      | 26                          | 8                                             |         |

**Note**

<sup>(1)</sup> Incremental current: The DC current required to cause a 5 % reduction in the nominal inductance value

**MARKING**

- Model
- Inductance value
- Tolerance
- Date code

**ORDERING INFORMATION**

|                   |                               |                      |              |                               |
|-------------------|-------------------------------|----------------------|--------------|-------------------------------|
| <b>IMS-5WD-40</b> | <b>0.10 <math>\mu</math>H</b> | <b>10 %</b>          | <b>ER</b>    | <b>e2</b>                     |
| MODEL             | INDUCTANCE VALUE              | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |

**GLOBAL PART NUMBER**

|       |   |   |   |   |   |   |              |   |                  |   |   |                      |        |   |
|-------|---|---|---|---|---|---|--------------|---|------------------|---|---|----------------------|--------|---|
| I     | M | S | 0 | 5 | W | D | E            | R | R                | 1 | 0 | K                    | 4      | 0 |
| MODEL |   |   |   |   |   |   | PACKAGE CODE |   | INDUCTANCE VALUE |   |   | INDUCTANCE TOLERANCE | SERIES |   |



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