

## Inductors, Epoxy Conformal Coated, Uniform Roll Coated, Axial Leaded



### ELECTRICAL SPECIFICATIONS

**Inductance Tolerance:**  $\pm 5\%$ ,  $\pm 10\%$ ,  $\pm 20\%$

Other tolerances available on request

**Insulation Resistance:** 1000 M $\Omega$  minimum per MIL-STD-202, method 302, test condition B

**Operating Temperature:** - 55 °C to + 105 °C

### MATERIAL SPECIFICATIONS

**Coating:** Epoxy-uniform roll coated

**Lead:** Tinned copper

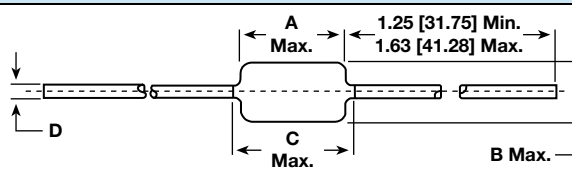
**Core:** Ferrite

### MECHANICAL SPECIFICATIONS

**Terminal Strength:** 5 pounds pull per MIL-STD-202, method 211, test condition A

**Weight:** IRF-1 = 0.3 g maximum

IRF-3 = 0.6 g maximum

| DIMENSIONS in inches [millimeters]                                                  |                 |                 |                  |                                            |
|-------------------------------------------------------------------------------------|-----------------|-----------------|------------------|--------------------------------------------|
|  |                 |                 |                  |                                            |
| MODEL                                                                               | A (MAX.)        | B (MAX.)        | C (MAX.)         | D                                          |
| IRF-1                                                                               | 0.260<br>[6.60] | 0.120<br>[3.05] | 0.330<br>[8.38]  | 0.0200 $\pm$ 0.0015<br>[0.508 $\pm$ 0.038] |
| IRF-3                                                                               | 0.385<br>[9.78] | 0.170<br>[4.32] | 0.410<br>[10.41] | 0.025 $\pm$ 0.002<br>[0.635 $\pm$ 0.051]   |

### FEATURES

- Flame-retardant coating
- Color band identification
- Uniform coating is excellent for automatic insertion
- Available in bulk, ammo and reel pack per EIA RS/296
- Superior electrical specifications high Q and self resonant frequency, low DC resistance, high rated DC current
- Compliant to RoHS Directive 2002/95/EC



**RoHS**  
COMPLIANT

### TEST EQUIPMENT <sup>(1)</sup>

- H/P 4342A Q-meter
- Measurements corporation megacycle meter, model 59
- Whearstone bridge

#### Note

<sup>(1)</sup> Test procedures per MIL-PRF-15305

| ENVIRONMENTAL PERFORMANCE    |            |                         |
|------------------------------|------------|-------------------------|
| TEST                         | CONDITIONS | SPECIFICATIONS          |
| Flammability                 | -          | MIL-STD-202, method 111 |
| Overload                     | -          | MIL-PRF-15305           |
| Resistance to Soldering Heat | A          | MIL-STD-202, method 210 |
| Resistance to Solvents       | -          | MIL-STD-202, method 215 |

| STANDARD ELECTRICAL SPECIFICATIONS |                 |          |        |                              |                               |                       |                                      |
|------------------------------------|-----------------|----------|--------|------------------------------|-------------------------------|-----------------------|--------------------------------------|
| MODEL                              | IND. ( $\mu$ H) | TOL. (%) | Q MIN. | TEST FREQUENCY L AND Q (MHz) | SRF MIN. (MHz) <sup>(1)</sup> | DCR MAX. ( $\Omega$ ) | RATED DC CURRENT (mA) <sup>(2)</sup> |
| IRF-1                              | 0.10            | $\pm 20$ | 40     | 25.0                         | 400.0                         | 0.06                  | 1350                                 |
| IRF-1                              | 0.12            | $\pm 20$ | 40     | 25.0                         | 400.0                         | 0.06                  | 1270                                 |
| IRF-1                              | 0.15            | $\pm 20$ | 40     | 25.0                         | 400.0                         | 0.07                  | 1200                                 |
| IRF-1                              | 0.18            | $\pm 20$ | 40     | 25.0                         | 400.0                         | 0.075                 | 1155                                 |
| IRF-1                              | 0.22            | $\pm 20$ | 40     | 25.0                         | 380.0                         | 0.075                 | 1150                                 |
| IRF-1                              | 0.27            | $\pm 20$ | 40     | 25.0                         | 360.0                         | 0.08                  | 1110                                 |
| IRF-1                              | 0.33            | $\pm 20$ | 40     | 25.0                         | 350.0                         | 0.08                  | 1110                                 |
| IRF-1                              | 0.39            | $\pm 20$ | 40     | 25.0                         | 320.0                         | 0.09                  | 1000                                 |
| IRF-1                              | 0.47            | $\pm 20$ | 40     | 25.0                         | 300.0                         | 0.10                  | 1000                                 |
| IRF-1                              | 0.56            | $\pm 20$ | 40     | 25.0                         | 280.0                         | 0.11                  | 950                                  |
| IRF-1                              | 0.68            | $\pm 20$ | 40     | 25.0                         | 250.0                         | 0.12                  | 900                                  |
| IRF-1                              | 0.82            | $\pm 20$ | 40     | 25.0                         | 200.0                         | 0.12                  | 900                                  |
| IRF-1                              | 1.0             | $\pm 10$ | 50     | 25.0                         | 180.0                         | 0.15                  | 815                                  |
| IRF-1                              | 1.2             | $\pm 10$ | 50     | 7.9                          | 165.0                         | 0.18                  | 740                                  |
| IRF-1                              | 1.5             | $\pm 10$ | 50     | 7.9                          | 150.0                         | 0.20                  | 700                                  |

#### Notes

<sup>(1)</sup> Measured with full length lead

<sup>(2)</sup> Rated DC current based on maximum temperature rise of 15 °C at + 90 °C ambient

**STANDARD ELECTRICAL SPECIFICATIONS**

| MODEL | IND.<br>( $\mu$ H) | TOL.<br>(%) | Q<br>MIN. | TEST FREQUENCY L AND Q<br>(MHz) | SRF MIN.<br>(MHz) <sup>(1)</sup> | DCR MAX.<br>( $\Omega$ ) | RATED DC CURRENT<br>(mA) <sup>(2)</sup> |
|-------|--------------------|-------------|-----------|---------------------------------|----------------------------------|--------------------------|-----------------------------------------|
| IRF-1 | 1.8                | $\pm 10$    | 50        | 7.9                             | 125.0                            | 0.23                     | 655                                     |
| IRF-1 | 2.2                | $\pm 10$    | 50        | 7.9                             | 115.0                            | 0.25                     | 630                                     |
| IRF-1 | 2.7                | $\pm 10$    | 50        | 7.9                             | 100.0                            | 0.28                     | 595                                     |
| IRF-1 | 3.3                | $\pm 10$    | 50        | 7.9                             | 90.0                             | 0.30                     | 575                                     |
| IRF-1 | 3.9                | $\pm 10$    | 50        | 7.9                             | 80.0                             | 0.32                     | 555                                     |
| IRF-1 | 4.7                | $\pm 10$    | 50        | 7.9                             | 75.0                             | 0.35                     | 530                                     |
| IRF-1 | 5.6                | $\pm 10$    | 50        | 7.9                             | 65.0                             | 0.40                     | 500                                     |
| IRF-1 | 6.8                | $\pm 10$    | 50        | 7.9                             | 60.0                             | 0.45                     | 470                                     |
| IRF-1 | 8.2                | $\pm 10$    | 50        | 7.9                             | 55.0                             | 0.55                     | 425                                     |
| IRF-1 | 10.0               | $\pm 10$    | 50        | 7.9                             | 50.0                             | 0.72                     | 370                                     |
| IRF-1 | 12.0               | $\pm 10$    | 50        | 2.5                             | 40.0                             | 0.80                     | 350                                     |
| IRF-1 | 15.0               | $\pm 10$    | 50        | 2.5                             | 35.0                             | 0.88                     | 335                                     |
| IRF-1 | 18.0               | $\pm 10$    | 50        | 2.5                             | 30.0                             | 1.0                      | 315                                     |
| IRF-1 | 22.0               | $\pm 10$    | 50        | 2.5                             | 25.0                             | 1.2                      | 285                                     |
| IRF-1 | 27.0               | $\pm 10$    | 50        | 2.5                             | 20.0                             | 1.35                     | 270                                     |
| IRF-1 | 33.0               | $\pm 10$    | 50        | 2.5                             | 24.0                             | 1.5                      | 255                                     |
| IRF-1 | 39.0               | $\pm 10$    | 50        | 2.5                             | 22.0                             | 1.7                      | 240                                     |
| IRF-1 | 47.0               | $\pm 10$    | 60        | 2.5                             | 20.0                             | 2.3                      | 205                                     |
| IRF-1 | 56.0               | $\pm 10$    | 60        | 2.5                             | 18.0                             | 2.6                      | 195                                     |
| IRF-1 | 68.0               | $\pm 10$    | 60        | 2.5                             | 15.0                             | 2.9                      | 185                                     |
| IRF-1 | 82.0               | $\pm 10$    | 60        | 2.5                             | 14.0                             | 3.2                      | 175                                     |
| IRF-1 | 100.0              | $\pm 10$    | 60        | 2.5                             | 13.0                             | 3.5                      | 165                                     |
| IRF-1 | 120.0              | $\pm 10$    | 60        | 0.79                            | 5.40                             | 3.8                      | 160                                     |
| IRF-1 | 150.0              | $\pm 10$    | 60        | 0.79                            | 4.75                             | 4.4                      | 150                                     |
| IRF-1 | 180.0              | $\pm 10$    | 60        | 0.79                            | 4.35                             | 5.0                      | 140                                     |
| IRF-1 | 220.0              | $\pm 10$    | 60        | 0.79                            | 4.0                              | 5.7                      | 130                                     |
| IRF-1 | 270.0              | $\pm 10$    | 60        | 0.79                            | 3.70                             | 6.5                      | 120                                     |
| IRF-1 | 330.0              | $\pm 10$    | 60        | 0.79                            | 3.40                             | 9.5                      | 100                                     |
| IRF-1 | 390.0              | $\pm 10$    | 60        | 0.79                            | 2.80                             | 10.5                     | 95                                      |
| IRF-1 | 470.0              | $\pm 10$    | 60        | 0.79                            | 2.55                             | 11.6                     | 90                                      |
| IRF-1 | 560.0              | $\pm 10$    | 60        | 0.79                            | 2.35                             | 13.0                     | 85                                      |
| IRF-1 | 680.0              | $\pm 10$    | 60        | 0.79                            | 2.0                              | 18.0                     | 75                                      |
| IRF-1 | 820.0              | $\pm 10$    | 60        | 0.79                            | 1.85                             | 23.0                     | 65                                      |
| IRF-1 | 1000.0             | $\pm 10$    | 60        | 0.79                            | 1.40                             | 26.0                     | 60                                      |
| IRF-3 | 0.22               | $\pm 20$    | 55        | 25.0                            | 380.0                            | 0.10                     | 1400                                    |
| IRF-3 | 0.27               | $\pm 20$    | 55        | 25.0                            | 340.0                            | 0.11                     | 1320                                    |
| IRF-3 | 0.33               | $\pm 20$    | 55        | 25.0                            | 300.0                            | 0.12                     | 1280                                    |
| IRF-3 | 0.39               | $\pm 20$    | 55        | 25.0                            | 280.0                            | 0.13                     | 1200                                    |
| IRF-3 | 0.47               | $\pm 20$    | 55        | 25.0                            | 250.0                            | 0.14                     | 1150                                    |
| IRF-3 | 0.56               | $\pm 20$    | 55        | 25.0                            | 230.0                            | 0.15                     | 1100                                    |
| IRF-3 | 0.68               | $\pm 20$    | 55        | 25.0                            | 210.0                            | 0.16                     | 1030                                    |
| IRF-3 | 0.82               | $\pm 20$    | 55        | 25.0                            | 172.0                            | 0.17                     | 980                                     |
| IRF-3 | 1.0                | $\pm 10$    | 55        | 25.0                            | 157.0                            | 0.19                     | 920                                     |
| IRF-3 | 1.2                | $\pm 10$    | 50        | 7.9                             | 144.0                            | 0.21                     | 880                                     |
| IRF-3 | 1.5                | $\pm 10$    | 50        | 7.9                             | 131.0                            | 0.23                     | 830                                     |
| IRF-3 | 1.8                | $\pm 10$    | 55        | 7.9                             | 121.0                            | 0.25                     | 790                                     |
| IRF-3 | 2.2                | $\pm 10$    | 55        | 7.9                             | 110.0                            | 0.28                     | 750                                     |
| IRF-3 | 2.7                | $\pm 10$    | 60        | 7.9                             | 100.0                            | 0.30                     | 720                                     |
| IRF-3 | 3.3                | $\pm 10$    | 65        | 7.9                             | 94.0                             | 0.34                     | 670                                     |
| IRF-3 | 3.9                | $\pm 10$    | 65        | 7.9                             | 86.0                             | 0.37                     | 640                                     |
| IRF-3 | 4.7                | $\pm 10$    | 70        | 7.9                             | 80.0                             | 0.39                     | 620                                     |
| IRF-3 | 5.6                | $\pm 10$    | 70        | 7.9                             | 74.0                             | 0.43                     | 590                                     |
| IRF-3 | 6.8                | $\pm 10$    | 75        | 7.9                             | 68.0                             | 0.48                     | 550                                     |
| IRF-3 | 8.2                | $\pm 10$    | 80        | 7.9                             | 53.0                             | 0.52                     | 530                                     |
| IRF-3 | 10.0               | $\pm 10$    | 85        | 7.9                             | 45.0                             | 0.58                     | 500                                     |
| IRF-3 | 12.0               | $\pm 10$    | 75        | 2.5                             | 42.0                             | 0.63                     | 480                                     |
| IRF-3 | 15.0               | $\pm 10$    | 70        | 2.5                             | 40.0                             | 0.72                     | 460                                     |
| IRF-3 | 18.0               | $\pm 10$    | 65        | 2.5                             | 34.0                             | 0.77                     | 430                                     |
| IRF-3 | 22.0               | $\pm 10$    | 60        | 2.5                             | 30.0                             | 0.84                     | 410                                     |
| IRF-3 | 27.0               | $\pm 10$    | 55        | 2.5                             | 25.0                             | 0.94                     | 390                                     |
| IRF-3 | 33.0               | $\pm 10$    | 55        | 2.5                             | 19.0                             | 1.03                     | 370                                     |
| IRF-3 | 39.0               | $\pm 10$    | 50        | 2.5                             | 14.5                             | 1.12                     | 350                                     |

**Notes**<sup>(1)</sup> Measured with full length lead<sup>(2)</sup> Rated DC current based on maximum temperature rise of 15 °C at + 90 °C ambient

**STANDARD ELECTRICAL SPECIFICATIONS**

| MODEL | IND.<br>( $\mu$ H) | TOL.<br>(%) | Q<br>MIN. | TEST FREQUENCY L AND Q<br>(MHz) | SRF MIN.<br>(MHz) <sup>(1)</sup> | DCR MAX.<br>( $\Omega$ ) | RATED DC CURRENT<br>(mA) <sup>(2)</sup> |
|-------|--------------------|-------------|-----------|---------------------------------|----------------------------------|--------------------------|-----------------------------------------|
| IRF-3 | 47.0               | $\pm 10$    | 45        | 2.5                             | 13.0                             | 1.22                     | 340                                     |
| IRF-3 | 56.0               | $\pm 10$    | 40        | 2.5                             | 12.0                             | 1.34                     | 320                                     |
| IRF-3 | 68.0               | $\pm 10$    | 40        | 2.5                             | 11.0                             | 1.47                     | 305                                     |
| IRF-3 | 82.0               | $\pm 10$    | 35        | 2.5                             | 10.3                             | 1.62                     | 290                                     |
| IRF-3 | 100.0              | $\pm 10$    | 30        | 2.5                             | 9.5                              | 1.8                      | 275                                     |
| IRF-3 | 120.0              | $\pm 10$    | 70        | 0.79                            | 3.8                              | 3.7                      | 185                                     |
| IRF-3 | 150.0              | $\pm 10$    | 70        | 0.79                            | 3.5                              | 4.2                      | 175                                     |
| IRF-3 | 180.0              | $\pm 10$    | 70        | 0.79                            | 3.3                              | 4.6                      | 165                                     |
| IRF-3 | 220.0              | $\pm 10$    | 70        | 0.79                            | 3.0                              | 5.1                      | 155                                     |
| IRF-3 | 270.0              | $\pm 10$    | 70        | 0.79                            | 2.8                              | 5.8                      | 145                                     |
| IRF-3 | 330.0              | $\pm 10$    | 70        | 0.79                            | 2.6                              | 6.4                      | 137                                     |
| IRF-3 | 390.0              | $\pm 10$    | 65        | 0.79                            | 2.4                              | 7.0                      | 133                                     |
| IRF-3 | 470.0              | $\pm 10$    | 65        | 0.79                            | 2.25                             | 7.7                      | 126                                     |
| IRF-3 | 560.0              | $\pm 10$    | 65        | 0.79                            | 2.1                              | 8.5                      | 120                                     |
| IRF-3 | 680.0              | $\pm 10$    | 65        | 0.79                            | 1.95                             | 9.4                      | 113                                     |
| IRF-3 | 820.0              | $\pm 10$    | 65        | 0.79                            | 1.85                             | 10.5                     | 105                                     |
| IRF-3 | 1000.0             | $\pm 10$    | 65        | 0.79                            | 1.4                              | 14.0                     | 100                                     |

**Notes**<sup>(1)</sup> Measured with full length lead<sup>(2)</sup> Rated DC current based on maximum temperature rise of 15 °C at + 90 °C ambient**ORDERING INFORMATION**

| IRF-1 | 10 $\mu$ H       | $\pm 10$ %           | ER           | e2                            |
|-------|------------------|----------------------|--------------|-------------------------------|
| MODEL | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |

**GLOBAL PART NUMBER**

|       |   |   |   |   |              |   |                  |   |   |                      |
|-------|---|---|---|---|--------------|---|------------------|---|---|----------------------|
| I     | R | F | 0 | 1 | E            | R | 1                | 0 | 0 | K                    |
| MODEL |   |   |   |   | PACKAGE CODE |   | INDUCTANCE VALUE |   |   | INDUCTANCE TOLERANCE |



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**