

## Inductors

Epoxy Conformal Coated  
Uniform Roll Coated



### FEATURES

- Flame-retardant coating and 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.

### ELECTRICAL SPECIFICATIONS

**Inductance Tolerance:**  $\pm 5\%$ ,  $\pm 10\%$ ,  $\pm 20\%$ .  
Other tolerances available on request.

**Insulation Resistance:** 1000 Megohm minimum per MIL-STD-202, Method 302, Test Condition B.

**Operating Temperature Range:**  $-55^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$ .

### 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 gram maximum.  
IRF-3 = 0.6 gram maximum.

### TEST EQUIPMENT\*

- H/P 4342A Q-Meter.
- Measurements Corporation Megacycle Meter, Model 59.
- Wheatstone bridge.

\*Test procedures per MIL-PRF-15305.

### 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] | 0.165<br>[4.19] | 0.410<br>[10.41] | $0.025 \pm 0.002$<br>[0.635 $\pm$ 0.051]   |

### ENVIRONMENTAL PERFORMANCE

| TEST                         | CONDITIONS       | SPECIFICATIONS          |
|------------------------------|------------------|-------------------------|
| Flammability                 | —                | MIL-STD-202, Method 111 |
| Overload                     | —                | MIL-PRF-15305           |
| Resistance to Soldering Heat | Test Condition A | MIL-STD-202, Method 210 |
| Resistance to Solvents       | —                | MIL-STD-202, Method 215 |

### STANDARD ELECTRICAL SPECIFICATIONS

| MODEL | INDUCTANCE ( $\mu\text{H}$ ) | TOLERANCE  | Q MINIMUM | TEST FREQUENCY L & Q (MHz) | SELF-RESONANT* FREQ. MIN. (MHz) | DCR MAXIMUM (Ohms) | RATED DC** CURRENT (mA) |
|-------|------------------------------|------------|-----------|----------------------------|---------------------------------|--------------------|-------------------------|
| 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                     |
| 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                     |

\*Measured with full length lead. \*\*Rated DC current based on a temperature rise of  $15^{\circ}\text{C}$  at  $+90^{\circ}\text{C}$  ambient.

| <b>STANDARD ELECTRICAL SPECIFICATIONS</b> |   |                  |                      |   |   |                                   |  |
|---|---|------------------|----------------------|---|---|-----------------------------------|--|
| <b>MODEL</b>                              | <b>INDUCTANCE<br/>(<math>\mu</math>H)</b> | <b>TOLERANCE</b> | <b>Q<br/>MINIMUM</b> | <b>TEST<br/>FREQUENCY<br/>L &amp; Q<br/>(MHz)</b> | <b>SELF-<br/>RESONANT*<br/>FREQ. MIN.<br/>(MHz)</b> | <b>DCR<br/>MAXIMUM<br/>(Ohms)</b> | <b>RATED DC**<br/>CURRENT<br/>(mA)</b> |
| 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                                    |
| 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                                    |

\*Measured with full length lead. \*\*Rated DC current based on a temperature rise of 15°C at + 90°C ambient.

| <b>ORDERING INFORMATION</b> |                         |                              |
|-----------------------------|-------------------------|------------------------------|
| <b>IRF-1</b>                | <b>10</b>               | <b><math>\pm 10\%</math></b> |
| <b>MODEL</b>                | <b>INDUCTANCE VALUE</b> | <b>INDUCTANCE TOLERANCE</b>  |



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