

# IMC1812RQ220K Datasheet



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|                              |   |
|------------------------------|---|
| DiGi Electronics Part Number | IMC1812RQ220K-DG  |
| Manufacturer                 | <a href="#">Vishay Dale</a>   |
| Manufacturer Product Number  | IMC1812RQ220K   |
| Description                  | FIXED IND 22UH 180MA 3.2 OHM SMD  |
| Detailed Description         | 22 $\mu$ H Unshielded Drum Core, Wirewound Inductor<br>180 mA 3.2Ohm Max 1812 (4532 Metric) |



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## Purchase and inquiry

Manufacturer Product Number:

IMC1812RQ220K

Series:

IMC-1812

Type:

Drum Core, Wirewound

Inductance:

22  $\mu$ H

Current Rating (Amps):

180 mA

Shielding:

Unshielded

Q @ Freq:

50 @ 2.52MHz

Ratings:

-

Inductance Frequency - Test:

2.52 MHz

Package / Case:

1812 (4532 Metric)

Size / Dimension:

0.177" L x 0.126" W (4.50mm x 3.20mm)

Manufacturer:

Vishay Dale

Product Status:

Active

Material - Core:

Iron Powder

Tolerance:

$\pm$ 10%

Current - Saturation (Isat):

-

DC Resistance (DCR):

3.2Ohm Max

Frequency - Self Resonant:

13MHz

Operating Temperature:

-55°C ~ 125°C

Mounting Type:

Surface Mount

Supplier Device Package:

1812

Height - Seated (Max):

0.134" (3.40mm)

## Environmental & Export classification

RoHS Status:

RoHS non-compliant

REACH Status:

REACH Affected

HTSUS:

8504.50.8000

Moisture Sensitivity Level (MSL):

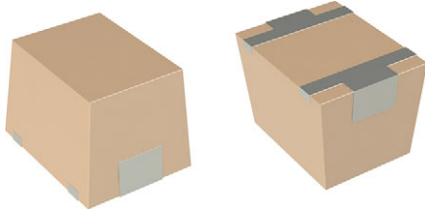
1 (Unlimited)

ECCN:

EAR99



## Wirewound, Surface-Mount, Molded RF Inductors



### FEATURES

- Molded construction provides superior strength and moisture resistance
- RF inductors for high frequency filtering and impedance matching
- Size: 4.5 mm x 3.2 mm x 3.2 mm
- Non-RoHS terminations available (see package code options below)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



### TEST EQUIPMENT

- H/P 4342A Q meter with Vishay Dale test fixture or equivalent
- H/P 4191A RF impedance analyzer (for SRF measurements)
- Wheatstone bridge

### ELECTRICAL SPECIFICATIONS

**Inductance range:** 0.010  $\mu$ H to 1000  $\mu$ H

**Special tolerances available upon request**

**Operating temperature:** -55 °C to +125 °C

**Coilform material:** non-magnetic for 0.010  $\mu$ H to 0.82  $\mu$ H; powdered iron for 1.0  $\mu$ H to 120  $\mu$ H; ferrite for 150  $\mu$ H to 1000  $\mu$ H

| STANDARD ELECTRICAL SPECIFICATIONS |                 |        |                  |        |                |                       |                                      |
|------------------------------------|-----------------|--------|------------------|--------|----------------|-----------------------|--------------------------------------|
| PART NUMBER                        | IND. ( $\mu$ H) | TOL.   | TEST FREQ. (MHz) | Q MIN. | SRF MIN. (MHz) | DCR MAX. ( $\Omega$ ) | RATED DC CURRENT (mA) <sup>(1)</sup> |
|                                    |                 |        | L & Q            |        |                |                       |                                      |
| IMC1812ES10NM                      | 0.010           | ± 20 % | 50.0             | 50     | 1000           | 0.20                  | 450                                  |
| IMC1812ES12NM                      | 0.012           | ± 20 % | 50.0             | 50     | 1000           | 0.20                  | 450                                  |
| IMC1812ES18NM                      | 0.018           | ± 20 % | 50.0             | 50     | 1000           | 0.20                  | 450                                  |
| IMC1812ES22NM                      | 0.022           | ± 20 % | 50.0             | 50     | 1000           | 0.20                  | 450                                  |
| IMC1812ES27NM                      | 0.027           | ± 20 % | 50.0             | 50     | 1000           | 0.20                  | 450                                  |
| IMC1812ES33NM                      | 0.033           | ± 20 % | 50.0             | 50     | 1000           | 0.30                  | 450                                  |
| IMC1812ES39NM                      | 0.039           | ± 20 % | 50.0             | 50     | 1000           | 0.30                  | 450                                  |
| IMC1812ES47NM                      | 0.047           | ± 20 % | 50.0             | 50     | 1000           | 0.30                  | 450                                  |
| IMC1812ES56NM                      | 0.056           | ± 20 % | 50.0             | 40     | 900            | 0.35                  | 450                                  |
| IMC1812ES68NM                      | 0.068           | ± 20 % | 50.0             | 40     | 800            | 0.35                  | 450                                  |
| IMC1812ES82NM                      | 0.082           | ± 20 % | 50.0             | 40     | 700            | 0.40                  | 450                                  |
| IMC1812ESR10M                      | 0.10            | ± 20 % | 25.2             | 30     | 650            | 0.32                  | 450                                  |
| IMC1812ESR12M                      | 0.12            | ± 20 % | 25.2             | 30     | 600            | 0.30                  | 450                                  |
| IMC1812ESR15M                      | 0.15            | ± 20 % | 25.2             | 30     | 500            | 0.30                  | 450                                  |
| IMC1812ESR18M                      | 0.18            | ± 20 % | 25.2             | 30     | 400            | 0.35                  | 450                                  |
| IMC1812ESR22M                      | 0.22            | ± 20 % | 25.2             | 30     | 350            | 0.40                  | 450                                  |
| IMC1812ESR27M                      | 0.27            | ± 20 % | 25.2             | 30     | 300            | 0.45                  | 450                                  |
| IMC1812ESR33M                      | 0.33            | ± 20 % | 25.2             | 30     | 250            | 0.55                  | 430                                  |
| IMC1812ESR39M                      | 0.39            | ± 20 % | 25.2             | 30     | 220            | 0.70                  | 380                                  |
| IMC1812ESR47K                      | 0.47            | ± 10 % | 25.2             | 30     | 190            | 0.80                  | 355                                  |
| IMC1812ESR56K                      | 0.56            | ± 10 % | 25.2             | 30     | 170            | 1.20                  | 285                                  |
| IMC1812ESR68K                      | 0.68            | ± 10 % | 25.2             | 30     | 150            | 1.40                  | 270                                  |
| IMC1812ESR82K                      | 0.82            | ± 10 % | 25.2             | 30     | 140            | 1.60                  | 250                                  |
| IMC1812ES1R0K                      | 1.0             | ± 10 % | 7.96             | 50     | 100            | 0.50                  | 450                                  |
| IMC1812ES1R2K                      | 1.2             | ± 10 % | 7.96             | 50     | 80.0           | 0.55                  | 430                                  |
| IMC1812ES1R5K                      | 1.5             | ± 10 % | 7.96             | 50     | 70.0           | 0.60                  | 410                                  |
| IMC1812ES1R8K                      | 1.8             | ± 10 % | 7.96             | 50     | 60.0           | 0.65                  | 390                                  |



**STANDARD ELECTRICAL SPECIFICATIONS**

| PART NUMBER   | IND. (μH) | TOL.   | TEST FREQ. (MHz) | Q MIN. | SRF MIN. (MHz) | DCR MAX. (Ω) | RATED DC CURRENT (mA) <sup>(1)</sup> |
|---------------|-----------|--------|------------------|--------|----------------|--------------|--------------------------------------|
|               |           |        | L & Q            |        |                |              |                                      |
| IMC1812ES2R2K | 2.2       | ± 10 % | 7.96             | 50     | 55.0           | 0.70         | 380                                  |
| IMC1812ES2R7K | 2.7       | ± 10 % | 7.96             | 50     | 50.0           | 0.75         | 370                                  |
| IMC1812ES3R3K | 3.3       | ± 10 % | 7.96             | 50     | 45.0           | 0.80         | 355                                  |
| IMC1812ES3R9K | 3.9       | ± 10 % | 7.96             | 50     | 40.0           | 0.90         | 330                                  |
| IMC1812ES4R7K | 4.7       | ± 10 % | 7.96             | 50     | 35.0           | 1.00         | 315                                  |
| IMC1812ES5R6K | 5.6       | ± 10 % | 7.96             | 50     | 33.0           | 1.10         | 300                                  |
| IMC1812ES6R8K | 6.8       | ± 10 % | 7.96             | 50     | 27.0           | 1.20         | 285                                  |
| IMC1812ES8R2K | 8.2       | ± 10 % | 7.96             | 50     | 25.0           | 1.40         | 270                                  |
| IMC1812ES100K | 10.0      | ± 10 % | 2.52             | 50     | 20.0           | 1.60         | 250                                  |
| IMC1812ES120K | 12.0      | ± 10 % | 2.52             | 50     | 18.0           | 2.00         | 225                                  |
| IMC1812ES150K | 15.0      | ± 10 % | 2.52             | 50     | 17.0           | 2.50         | 200                                  |
| IMC1812ES180K | 18.0      | ± 10 % | 2.52             | 50     | 15.0           | 2.80         | 190                                  |
| IMC1812ES220K | 22.0      | ± 10 % | 2.52             | 50     | 13.0           | 3.20         | 180                                  |
| IMC1812ES270K | 27.0      | ± 10 % | 2.52             | 50     | 12.0           | 3.60         | 170                                  |
| IMC1812ES330K | 33.0      | ± 10 % | 2.52             | 50     | 11.0           | 4.00         | 160                                  |
| IMC1812ES390K | 39.0      | ± 10 % | 2.52             | 50     | 11.0           | 4.50         | 150                                  |
| IMC1812ES470K | 47.0      | ± 10 % | 2.52             | 50     | 10.0           | 5.00         | 140                                  |
| IMC1812ES560K | 56.0      | ± 10 % | 2.52             | 50     | 9.0            | 5.50         | 135                                  |
| IMC1812ES680K | 68.0      | ± 10 % | 2.52             | 50     | 9.0            | 6.00         | 130                                  |
| IMC1812ES820K | 82.0      | ± 10 % | 2.52             | 50     | 8.0            | 7.00         | 120                                  |
| IMC1812ES101K | 100.0     | ± 10 % | 0.79             | 40     | 8.0            | 8.00         | 110                                  |
| IMC1812ES121K | 120.0     | ± 10 % | 0.79             | 40     | 6.0            | 8.00         | 110                                  |
| IMC1812ES151K | 150.0     | ± 10 % | 0.79             | 40     | 5.0            | 9.00         | 105                                  |
| IMC1812ES181K | 180.0     | ± 10 % | 0.79             | 40     | 5.0            | 9.50         | 102                                  |
| IMC1812ES221K | 220.0     | ± 10 % | 0.79             | 40     | 4.0            | 10.0         | 100                                  |
| IMC1812ES271K | 270.0     | ± 10 % | 0.79             | 40     | 4.0            | 12.0         | 92                                   |
| IMC1812ES331K | 330.0     | ± 10 % | 0.79             | 40     | 3.5            | 14.0         | 85                                   |
| IMC1812ES391K | 390.0     | ± 10 % | 0.79             | 40     | 3.0            | 16.0         | 80                                   |
| IMC1812ES471K | 470.0     | ± 10 % | 0.79             | 40     | 3.0            | 26.0         | 62                                   |
| IMC1812ES561K | 560.0     | ± 10 % | 0.79             | 30     | 3.0            | 30.0         | 50                                   |
| IMC1812ES681K | 680.0     | ± 10 % | 0.79             | 30     | 3.0            | 30.0         | 50                                   |
| IMC1812ES821K | 820.0     | ± 10 % | 0.79             | 30     | 2.5            | 35.0         | 30                                   |
| IMC1812ES102K | 1000.0    | ± 10 % | 0.25             | 30     | 2.5            | 40.0         | 30                                   |

**Note**

(1) Rated DC current based on the maximum temperature rise, not to exceed 40 °C at +85 °C ambient

**PART MARKING**

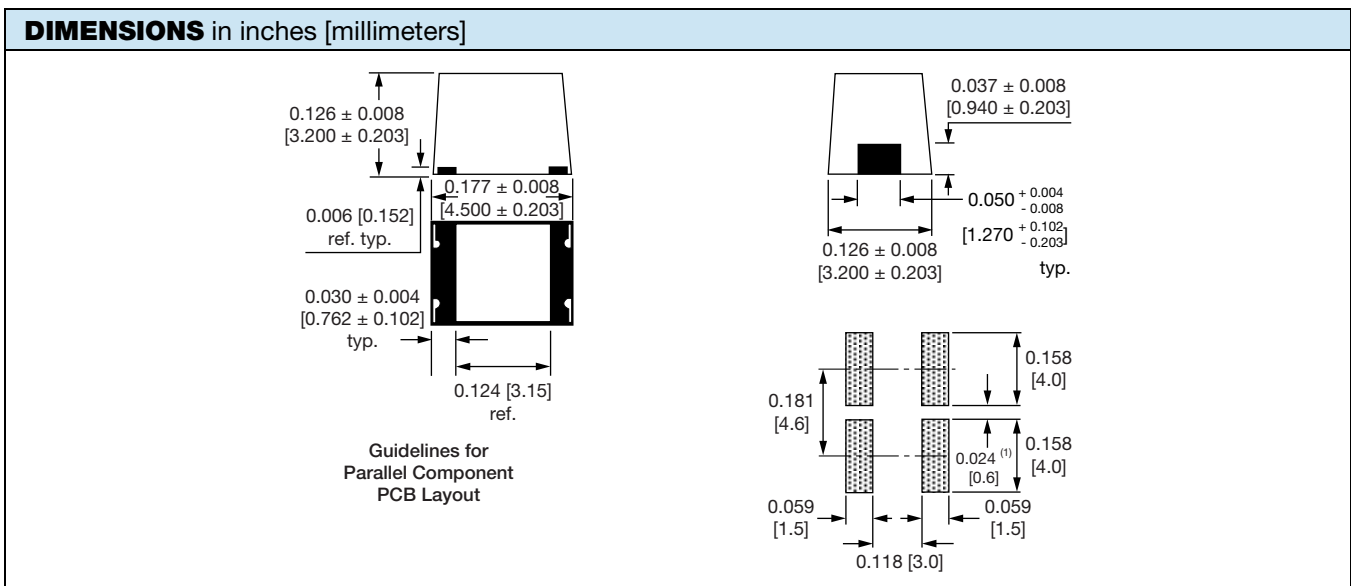
- DALE
- Inductance code
- Date code



| DESCRIPTION |                  |                      |              |
|-------------|------------------|----------------------|--------------|
| IMC-1812    | 10 $\mu$ H       | $\pm 10 \%$          | ES           |
| MODEL       | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE |

| GLOBAL PART NUMBER |         |                    |                  |  |
|--------------------|---------|--------------------|------------------|--|
| I M C              | 1 8 1 2 | E S                | 1 0 0            | K  |
| PRODUCT FAMILY     | SIZE    | PACKAGE CODE       | INDUCTANCE VALUE | INDUCTANCE TOLERANCE   |
|                    |         | ES = tape and reel | 100 = 10 $\mu$ H | M = $\pm 20 \%$<br>K = $\pm 10 \%$<br>J = $\pm 5 \%$<br>H = $\pm 3 \%$ |

| PACKAGE CODE & TERMINATION OPTIONS   |
|--|
| ES = RoHS compliant with tape and reel packaging (2000 pcs on 13-inch reel)    |
| ER = RoHS compliant with tape and reel packaging (500 pcs on 7-inch reel)      |
| EB = RoHS compliant with bulk packaging (500 pcs/bulk)                         |
| RQ = non-RoHS tin-lead with tape and reel packaging (2000 pcs on 13-inch reel) |
| RV = non-RoHS tin-lead with tape and reel packaging (500 pcs on 7-inch reel)   |
| BN = non-RoHS tin-lead with bulk packaging (500 pcs/bulk)                      |



**Note**  
 (1) Recommended minimum spacing between components



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