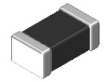


Multilayer Chip Ferrite Inductors---MLF Series



Feature

- High reliability.
- No cross coupling due to magnetic shield.
- Perfect shape for mounting with no directionality.
- RoHS compliant.
- Operating temperature range $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (Including self - temperature rise).

Application

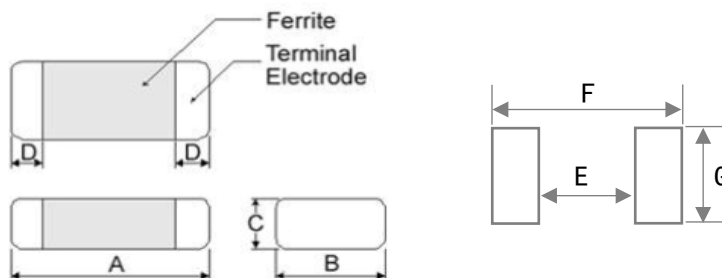
- Communications, Computer, Remote control, etc.
- Filter switches.
- Adjustment networks.

Production identification

MLF
①
1608
②
- 2R2
③
K
④

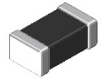
- ① Series name
- ② Size: $1.6 \times 0.8 \times 0.8\text{mm}$
- ③ Inductance: $2.2\mu\text{H}$
- ④ Tolerance: K= $\pm 10\%$, M= 20%

Series Shape and Dimensions (Unit:mm)



| Series | A(mm) | B(mm) | C(mm) | D(mm) | E _{Typ} | F _{Typ} | G _{Typ} | SPQ |
|-----------|----------|----------|----------|----------|------------------|------------------|------------------|-------|
| MLF1005 | 1.0±0.15 | 0.5±0.15 | 0.5±0.15 | 0.25±0.1 | 0.5 | 1.2 | 0.5 | 10000 |
| MLF1608/A | 1.6±0.2 | 0.8±0.2 | 0.8±0.2 | 0.3±0.2 | 0.7 | 2.2 | 0.8 | 4000 |
| MLF2012/A | 2.0±0.2 | 1.2±0.2 | 0.9±0.2 | 0.5±0.3 | 1.2 | 3.0 | 1.0 | 4000 |
| | | | 1.2±0.2 | | | | | 3000 |
| MLF3216/A | 3.2±0.2 | 1.6±0.2 | 0.9±0.2 | 0.5±0.3 | 2.0 | 4.2 | 1.2 | 4000 |
| | | | 1.1±0.2 | | | | | 3000 |

Multilayer Chip Ferrite Inductors---MLF Series

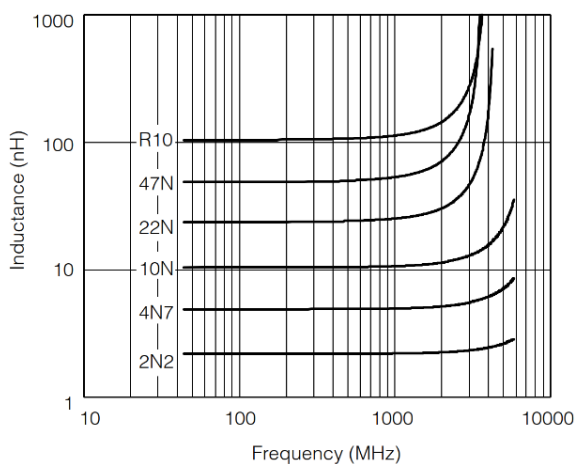


Electrical Characteristics

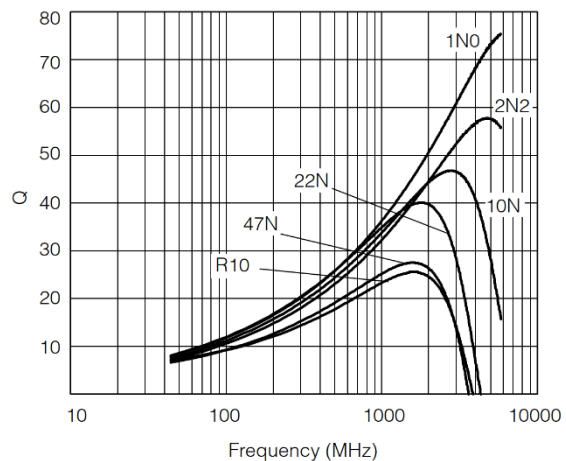
| Part Number | Inductance (μH) | Quality Factor(Min) | Test Freq. (MHz) | S.R.F (MHz) | DCR Max(Ω) | Current (mA) |
|--------------|-----------------|---------------------|------------------|-------------|------------|--------------|
| MLF1005-47NK | 0.047 | 10 | 50 | 220 | 0.45 | 25 |
| MLF1005-56NK | 0.056 | 10 | 50 | 210 | 0.45 | 25 |
| MLF1005-68NK | 0.068 | 10 | 50 | 210 | 0.45 | 25 |
| MLF1005-82NK | 0.082 | 10 | 50 | 200 | 0.45 | 25 |
| MLF1005-R10K | 0.10 | 15 | 25 | 200 | 0.70 | 25 |
| MLF1005-R12K | 0.12 | 15 | 25 | 165 | 0.70 | 25 |
| MLF1005-R15K | 0.15 | 15 | 25 | 140 | 0.80 | 25 |
| MLF1005-R18K | 0.18 | 15 | 25 | 120 | 0.80 | 25 |
| MLF1005-R22K | 0.22 | 15 | 25 | 110 | 1.00 | 25 |
| MLF1005-R27K | 0.27 | 15 | 25 | 95 | 1.20 | 25 |
| MLF1005-R33K | 0.33 | 15 | 25 | 85 | 1.20 | 25 |
| MLF1005-R39k | 0.39 | 15 | 10 | 70 | 0.60 | 20 |
| MLF1005-R47K | 0.47 | 15 | 10 | 68 | 0.70 | 20 |
| MLF1005-R56K | 0.56 | 15 | 10 | 55 | 0.80 | 20 |
| MLF1005-R68K | 0.68 | 15 | 10 | 50 | 0.90 | 20 |
| MLF1005-R82K | 0.82 | 15 | 10 | 45 | 0.90 | 18 |
| MLF1005-1R0K | 1.0 | 20 | 10 | 40 | 0.90 | 15 |
| MLF1005-1R2K | 1.2 | 20 | 10 | 35 | 1.20 | 15 |

Typical Electrical Graphs

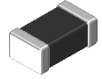
Inductance vs. Frequency



Q vs. Frequency



Multilayer Chip Ferrite Inductors---MLF Series

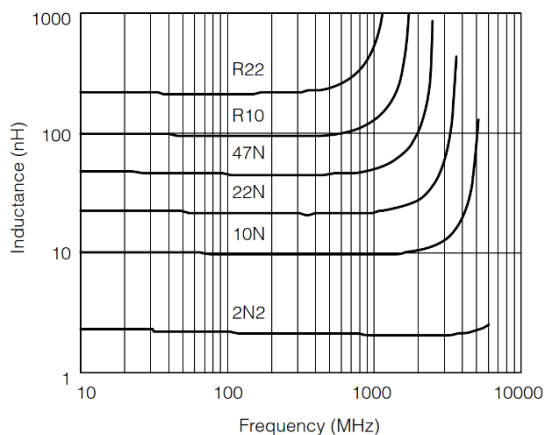


MLF1608 Electrical Characteristics

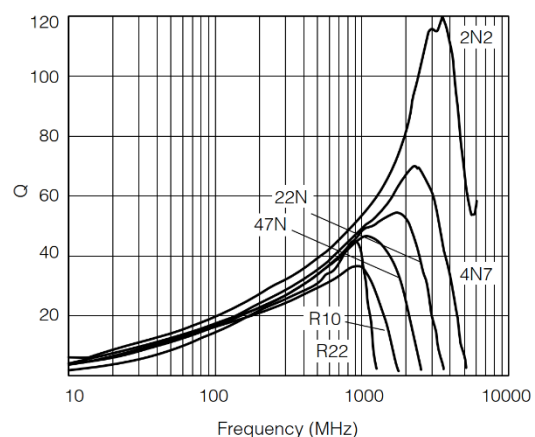
| Part Number | Inductance (μH) | Quality Factor(Min) | Test Freq. (MHz) | S.R.F (MHz) | DCR Max(Ω) | Current (mA) |
|--------------|-----------------|---------------------|------------------|-------------|------------|--------------|
| MLF1608-47NK | 0.047 | 15 | 50 | 260 | 0.20 | 50 |
| MLF1608-68NK | 0.068 | 15 | 50 | 250 | 0.20 | 50 |
| MLF1608-R10K | 0.10 | 20 | 25 | 240 | 0.25 | 50 |
| MLF1608-R15K | 0.15 | 20 | 25 | 180 | 0.30 | 50 |
| MLF1608-R22K | 0.22 | 20 | 25 | 150 | 0.40 | 50 |
| MLF1608-R27K | 0.27 | 20 | 25 | 136 | 0.45 | 50 |
| MLF1608-R33K | 0.33 | 20 | 25 | 125 | 0.50 | 50 |
| MLF1608-R39k | 0.39 | 20 | 25 | 110 | 0.60 | 50 |
| MLF1608-R47K | 0.47 | 20 | 25 | 105 | 0.70 | 50 |
| MLF1608-R56K | 0.56 | 20 | 25 | 95 | 0.70 | 50 |
| MLF1608-R68K | 0.68 | 20 | 25 | 90 | 0.90 | 50 |
| MLF1608-R82K | 0.82 | 20 | 25 | 85 | 1.00 | 50 |
| MLF1608-1R0K | 1.0 | 25 | 10 | 75 | 0.50 | 25 |
| MLF1608-1R5K | 1.5 | 25 | 10 | 60 | 0.70 | 25 |
| MLF1608-1R8K | 1.8 | 25 | 10 | 55 | 0.75 | 25 |
| MLF1608-2R2K | 2.2 | 25 | 10 | 50 | 0.80 | 25 |
| MLF1608-2R7K | 2.7 | 25 | 10 | 45 | 0.90 | 15 |
| MLF1608-3R3K | 3.3 | 25 | 10 | 40 | 1.00 | 15 |
| MLF1608-4R7K | 4.7 | 25 | 10 | 33 | 1.50 | 15 |
| MLF1608-5R6K | 5.6 | 12 | 4 | 22 | 1.55 | 5 |
| MLF1608-6R8K | 6.8 | 12 | 4 | 20 | 1.55 | 5 |
| MLF1608-8R2K | 8.2 | 12 | 4 | 18 | 1.65 | 5 |
| MLF1608-100K | 10 | 20 | 2 | 17 | 1.75 | 3 |
| MLF1608-120K | 12 | 20 | 2 | 15 | 1.85 | 3 |
| MLF1608-150M | 15 | 20 | 1 | 14 | 2.50 | 1 |
| MLF1608-180M | 18 | 20 | 1 | 13 | 2.70 | 1 |
| MLF1608-220M | 22 | 20 | 1 | 12 | 3.00 | 1 |

Typical Electrical Graphs

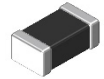
Inductance vs. Frequency



Q vs. Frequency



Multilayer Chip Ferrite Inductors---MLF Series

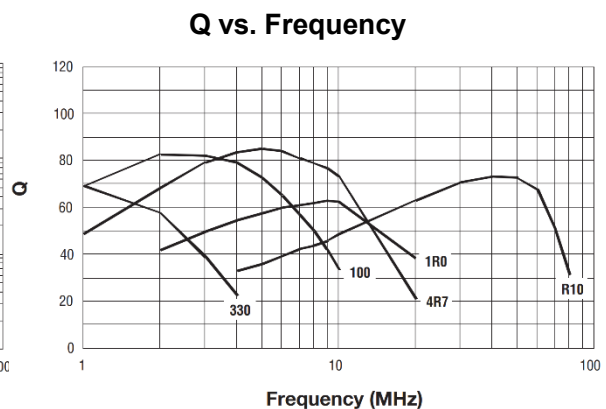
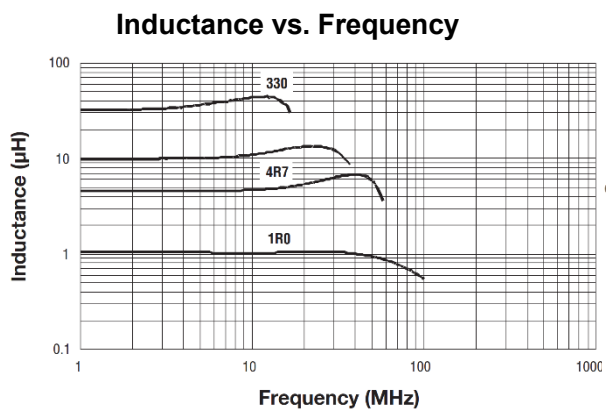


MLF2012 Electrical Characteristics

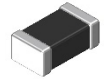
| Part Number | Inductance (μH) | Quality Factor(Min) | Test Freq. (MHz) | S.R.F (MHz) | DCR Max(Ω) | Current (mA) |
|---------------|-----------------|---------------------|------------------|-------------|------------|--------------|
| MLF2012-47NK | 0.047 | 25 | 50 | 320 | 0.15 | 300 |
| MLF2012-R10K | 0.10 | 20 | 25 | 235 | 0.20 | 250 |
| MLF2012-R15K | 0.15 | 20 | 25 | 200 | 0.25 | 250 |
| MLF2012-R22K | 0.22 | 20 | 25 | 170 | 0.30 | 250 |
| MLF2012-R27K | 0.27 | 20 | 25 | 150 | 0.40 | 250 |
| MLF2012-R33K | 0.33 | 20 | 25 | 145 | 0.40 | 250 |
| MLF2012-R47K | 0.47 | 25 | 25 | 125 | 0.50 | 200 |
| MLF2012-R56K | 0.56 | 25 | 25 | 115 | 0.60 | 150 |
| MLF2012-R68K | 0.68 | 25 | 25 | 105 | 0.65 | 150 |
| MLF2012-R82K | 0.82 | 25 | 25 | 100 | 0.82 | 150 |
| MLF2012-1R0K | 1.0 | 35 | 10 | 75 | 0.40 | 50 |
| MLF2012-1R5K | 1.5 | 35 | 10 | 60 | 0.40 | 50 |
| MLF2012-1R8K | 1.8 | 35 | 10 | 55 | 0.40 | 50 |
| MLF2012-2R2K | 2.2 | 35 | 10 | 50 | 0.60 | 50 |
| MLF2012-3R3K | 3.3 | 35 | 10 | 41 | 0.60 | 50 |
| MLF2012-4R7K | 4.7 | 35 | 10 | 35 | 0.90 | 30 |
| MLF2012-5R6K | 5.6 | 30 | 4 | 32 | 1.00 | 15 |
| MLF2012-6R8K | 6.8 | 30 | 4 | 29 | 1.05 | 15 |
| MLF2012-8R2K | 8.2 | 30 | 4 | 26 | 1.05 | 15 |
| MLF2012-100K | 10 | 30 | 2 | 24 | 1.15 | 15 |
| MLF2012-120K | 12 | 30 | 2 | 22 | 1.15 | 15 |
| MLF2012-150K | 15 | 25 | 1 | 18 | 1.15 | 5 |
| MLF2012-180K | 18 | 25 | 1 | 16 | 1.20 | 5 |
| MLF2012-220K | 22 | 25 | 1 | 16 | 1.20 | 5 |
| MLF2012-330M | 33 | 25 | 1 | 16 | 1.50 | 5 |
| MLF2012-390M* | 39 | 25 | 1 | 16 | 1.50 | 5 |
| MLF2012-470M* | 47 | 25 | 1 | 15 | 1.70 | 5 |

* The height is 1.2±0.2 mm, the other height is 0.9±0.2mm.

Typical Electrical Graphs



Multilayer Chip Ferrite Inductors---MLF Series

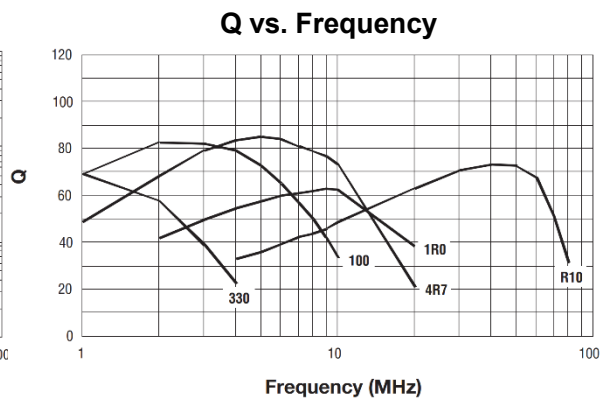
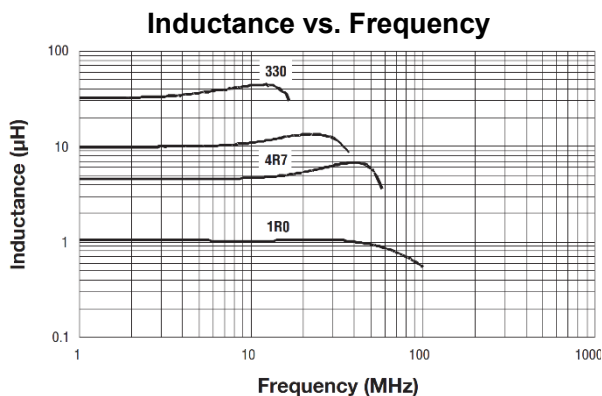


MLF3216 Electrical Characteristics

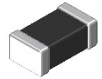
| Part Number | Inductance (μH) | Quality Factor(Min) | Test Freq. (MHz) | S.R.F (MHz) | DCR Max(Ω) | Current (mA) |
|---------------|-----------------|---------------------|------------------|-------------|------------|--------------|
| MLF3216-47NK | 0.047 | 30 | 50 | 320 | 0.15 | 300 |
| MLF3216-R10K | 0.10 | 25 | 25 | 235 | 0.25 | 250 |
| MLF3216-R15K | 0.15 | 25 | 25 | 200 | 0.25 | 250 |
| MLF3216-R22K | 0.22 | 25 | 25 | 170 | 0.30 | 250 |
| MLF3216-R33K | 0.33 | 25 | 25 | 145 | 0.30 | 250 |
| MLF3216-R47K | 0.47 | 30 | 25 | 125 | 0.50 | 200 |
| MLF3216-R68K | 0.68 | 30 | 25 | 105 | 0.50 | 150 |
| MLF3216-1R0K | 1.0 | 35 | 10 | 75 | 0.30 | 100 |
| MLF3216-1R2K | 1.2 | 35 | 10 | 65 | 0.40 | 100 |
| MLF3216-1R5K | 1.5 | 35 | 10 | 60 | 0.40 | 50 |
| MLF3216-1R8K | 1.8 | 35 | 10 | 55 | 0.40 | 50 |
| MLF3216-2R2K | 2.2 | 35 | 10 | 50 | 0.50 | 50 |
| MLF3216-2R7K | 2.7 | 35 | 10 | 45 | 0.50 | 50 |
| MLF3216-3R3K | 3.3 | 35 | 10 | 41 | 0.50 | 50 |
| MLF3216-3R9K | 3.9 | 35 | 10 | 38 | 0.60 | 50 |
| MLF3216-4R7K | 4.7 | 35 | 10 | 35 | 0.65 | 25 |
| MLF3216-6R8K | 6.8 | 35 | 4 | 29 | 0.80 | 25 |
| MLF3216-8R2K | 8.2 | 35 | 4 | 26 | 0.80 | 25 |
| MLF3216-100K | 10 | 35 | 2 | 24 | 0.80 | 25 |
| MLF3216-220K | 22 | 30 | 1 | 16 | 1.20 | 5 |
| MLF3216-330K | 33 | 30 | 1 | 13 | 1.30 | 5 |
| MLF3216-390K | 39 | 30 | 1 | 13 | 1.30 | 5 |
| MLF3216-470K* | 47 | 30 | 1 | 12 | 1.60 | 5 |
| MLF3216-560M* | 56 | 30 | 1 | 12 | 1.80 | 5 |
| MLF3216-680M* | 68 | 30 | 1 | 11 | 2.00 | 5 |

* The height is 1.1±0.2 mm, the other height is 0.9±0.2mm.

Typical Electrical Graphs



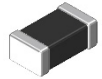
Multilayer Chip Ferrite Inductors---MLF Series



MLF1608A Electrical Characteristics

| Part Number | Inductance (μH) | Tolerance (±%) | Test Freq. (MHz) | S.R.F (MHz) | DCR Max(Ω) | Current (mA) |
|---------------|-----------------|----------------|------------------|-------------|------------|--------------|
| MLF1608A-47NM | 0.047 | 20 | 1 | 260 | 0.12 | 150 |
| MLF1608A-47NM | 0.056 | 20 | 1 | 260 | 0.12 | 150 |
| MLF1608A-68NM | 0.068 | 20 | 1 | 250 | 0.12 | 150 |
| MLF1608A-82NM | 0.082 | 20 | 1 | 245 | 0.12 | 150 |
| MLF1608A-R10M | 0.10 | 20 | 1 | 240 | 0.15 | 150 |
| MLF1608A-R12M | 0.12 | 20 | 1 | 205 | 0.20 | 150 |
| MLF1608A-R15M | 0.15 | 20 | 1 | 180 | 0.20 | 150 |
| MLF1608A-R18M | 0.18 | 20 | 1 | 165 | 0.20 | 150 |
| MLF1608A-R22M | 0.22 | 20 | 1 | 150 | 0.25 | 150 |
| MLF1608A-R27M | 0.27 | 20 | 1 | 136 | 0.30 | 100 |
| MLF1608A-R33M | 0.33 | 20 | 1 | 125 | 0.30 | 100 |
| MLF1608A-R39M | 0.39 | 20 | 1 | 110 | 0.35 | 100 |
| MLF1608A-R47M | 0.47 | 20 | 1 | 105 | 0.45 | 100 |
| MLF1608A-R56M | 0.56 | 20 | 1 | 95 | 0.45 | 100 |
| MLF1608A-R68M | 0.68 | 20 | 1 | 90 | 0.55 | 100 |
| MLF1608A-R82M | 0.82 | 20 | 1 | 85 | 0.60 | 100 |
| MLF1608A-1R0M | 1.0 | 20 | 1 | 75 | 0.30 | 150 |
| MLF1608A-1R2M | 1.2 | 20 | 1 | 65 | 0.30 | 150 |
| MLF1608A-1R5M | 1.5 | 20 | 1 | 60 | 0.35 | 120 |
| MLF1608A-1R8M | 1.8 | 20 | 1 | 55 | 0.40 | 120 |
| MLF1608A-2R2M | 2.2 | 20 | 1 | 50 | 0.50 | 120 |
| MLF1608A-2R7M | 2.7 | 20 | 1 | 45 | 0.60 | 100 |
| MLF1608A-3R3M | 3.3 | 20 | 1 | 40 | 0.65 | 100 |
| MLF1608A-3R9M | 3.9 | 20 | 1 | 35 | 0.70 | 80 |
| MLF1608A-4R7M | 4.7 | 20 | 1 | 33 | 0.75 | 80 |
| MLF1608A-5R6M | 5.6 | 20 | 1 | 22 | 0.90 | 60 |
| MLF1608A-6R8M | 6.8 | 20 | 1 | 20 | 0.90 | 60 |
| MLF1608A-8R2M | 8.2 | 20 | 1 | 18 | 1.05 | 60 |
| MLF1608A-100M | 10 | 20 | 1 | 17 | 1.15 | 60 |
| MLF1608A-120M | 12 | 20 | 1 | 15 | 1.25 | 60 |

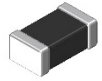
Multilayer Chip Ferrite Inductors---MLF Series



MLF2012A Electrical Characteristics

| Part Number | Inductance (μH) | Tolerance (±%) | Test Freq. (MHz) | S.R.F (MHz) | DCR Max(Ω) | Current (mA) |
|---------------|-----------------|----------------|------------------|-------------|------------|--------------|
| MLF2012A-47NM | 0.047 | 20 | 1 | 280 | 0.10 | 1100 |
| MLF2012A-56NM | 0.056 | 20 | 1 | 280 | 0.10 | 1100 |
| MLF2012A-68NM | 0.068 | 20 | 1 | 250 | 0.15 | 1100 |
| MLF2012A-82NM | 0.082 | 20 | 1 | 250 | 0.15 | 1100 |
| MLF2012A-R10M | 0.10 | 20 | 1 | 210 | 0.15 | 1100 |
| MLF2012A-R12M | 0.12 | 20 | 1 | 200 | 0.15 | 1100 |
| MLF2012A-R15M | 0.15 | 20 | 1 | 175 | 0.15 | 1100 |
| MLF2012A-R18M | 0.18 | 20 | 1 | 160 | 0.15 | 1100 |
| MLF2012A-R22M | 0.22 | 20 | 1 | 150 | 0.15 | 1100 |
| MLF2012A-R27M | 0.27 | 20 | 1 | 130 | 0.15 | 1100 |
| MLF2012A-R33M | 0.33 | 20 | 1 | 120 | 0.15 | 1100 |
| MLF2012A-R39M | 0.39 | 20 | 1 | 110 | 0.15 | 1100 |
| MLF2012A-R47M | 0.47 | 20 | 1 | 100 | 0.15 | 1100 |
| MLF2012A-R56M | 0.56 | 20 | 1 | 100 | 0.36 | 800 |
| MLF2012A-R68M | 0.68 | 20 | 1 | 95 | 0.36 | 800 |
| MLF2012A-R82M | 0.82 | 20 | 1 | 90 | 0.36 | 800 |
| MLF2012A-1R0M | 1.0 | 20 | 1 | 75 | 0.24 | 800 |
| MLF2012A-1R2M | 1.2 | 20 | 1 | 65 | 0.24 | 800 |
| MLF2012A-1R5M | 1.5 | 20 | 1 | 60 | 0.30 | 700 |
| MLF2012A-1R8M | 1.8 | 20 | 1 | 55 | 0.36 | 600 |
| MLF2012A-2R2M | 2.2 | 20 | 1 | 50 | 0.36 | 600 |
| MLF2012A-2R7M | 2.7 | 20 | 1 | 45 | 0.36 | 600 |
| MLF2012A-3R3M | 3.3 | 20 | 1 | 41 | 0.40 | 350 |
| MLF2012A-3R9M | 3.9 | 20 | 1 | 38 | 0.40 | 350 |
| MLF2012A-4R7M | 4.7 | 20 | 1 | 35 | 0.40 | 350 |
| MLF2012A-5R6M | 5.6 | 20 | 1 | 32 | 0.50 | 250 |
| MLF2012A-6R8M | 6.8 | 20 | 1 | 29 | 0.50 | 250 |
| MLF2012A-8R2M | 8.2 | 20 | 1 | 26 | 0.56 | 250 |
| MLF2012A-100M | 10 | 20 | 1 | 24 | 0.56 | 250 |
| MLF2012A-120M | 12 | 20 | 1 | 22 | 0.56 | 250 |
| MLF2012A-150M | 15 | 20 | 1 | 19 | 0.65 | 100 |
| MLF2012A-180M | 18 | 20 | 1 | 18 | 0.65 | 100 |
| MLF2012A-220M | 22 | 20 | 1 | 16 | 0.65 | 100 |

Multilayer Chip Ferrite Inductors---MLF Series



MLF3216A Electrical Characteristics

| Part Number | Inductance (μ H) | Tolerance (\pm %) | Test Freq. (MHz) | S.R.F (MHz) | DCR Max(Ω) | Current (mA) |
|---------------|--------------------------|-------------------------|---------------------|----------------|------------------------|-----------------|
| MLF3216A-1R0M | 1.0 | 20 | 1 | 60 | 0.15 | 1200 |
| MLF3216A-1R2M | 1.2 | 20 | 1 | 65 | 0.15 | 1200 |
| MLF3216A-1R5M | 1.5 | 20 | 1 | 60 | 0.17 | 1000 |
| MLF3216A-1R8M | 1.8 | 20 | 1 | 55 | 0.24 | 900 |
| MLF3216A-2R2M | 2.2 | 20 | 1 | 50 | 0.24 | 900 |
| MLF3216A-2R7M | 2.7 | 20 | 1 | 45 | 0.30 | 800 |
| MLF3216A-3R3M | 3.3 | 20 | 1 | 41 | 0.30 | 800 |
| MLF3216A-3R9M | 3.9 | 20 | 1 | 38 | 0.38 | 700 |
| MLF3216A-4R7M | 4.7 | 20 | 1 | 35 | 0.38 | 700 |
| MLF3216A-5R6M | 5.6 | 20 | 1 | 32 | 0.45 | 500 |
| MLF3216A-6R8M | 6.8 | 20 | 1 | 29 | 0.45 | 500 |
| MLF3216A-8R2M | 8.2 | 20 | 1 | 26 | 0.55 | 300 |
| MLF3216A-100M | 10 | 20 | 1 | 24 | 0.55 | 300 |
| MLF3216A-120M | 12 | 20 | 1 | 22 | 0.55 | 300 |
| MLF3216A-150M | 15 | 20 | 1 | 19 | 0.65 | 100 |
| MLF3216A-180M | 18 | 20 | 1 | 18 | 0.65 | 100 |

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