## NANOCRYSTALLINE CORES

## ㄷ $M_{\text {Series }}$

The FM series coils are made of nano-crystal

## -MAJOR USES

- Signal power line noise control
-DC power line noise control
- AC power line noise control
- Filter line
-Zero-phase reactor


## FEATURES

- The high permeability core is made of nanocrystalline soft magnetic alloy
- High impedance in spite of a small number of turns
- Excellent temperature characteristics
-Conforming to insulating type B and incombustibility UL94V-0


## -CORE STANDARD SPECIFICATIONS

| Core Part No. <br> (Old Core Part No.) | Cross <br> Sectional <br> Area <br> $\mathbf{c m}^{2}$ | Magnetic <br> Path <br> Length <br> $\mathbf{c m}$ | Weight <br> $\mathbf{g}$ | Outside Dimensions <br> Inductance <br> Coefficient <br> (AL Value) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0.63 | 6.40 | 35 | 28.3 | 12.7 | 17.5 | 18.3 |
| LRF322015MK <br> mm <br> (F322015MK) | 0.73 | 8.17 | 50 | 35.2 | 17.5 | 17.3 | 16.6 |
| LRF372315MK <br> (F372315MK) | 0.85 | 9.42 | 67 | 40.5 | 19.5 | 18.0 | 17.2 |
| LRF462715MK <br> (F462715MK) | 1.15 | 11.50 | 110 | 49.4 | 22.7 | 18.0 | 18.6 |
| LRF462725MK <br> (F462725MK) | 1.92 | 11.50 | 176 | 49.4 | 22.7 | 28.0 | 31.0 |
| LRF603525MK <br> (F603525MK) | 2.53 | 14.90 | 310 | 66.7 | 29.3 | 29.2 | 31.6 |
| LRF624520MK <br> (F624520MK) | 1.36 | 16.80 | 200 | 66.0 | 41.0 | 24.0 | 15.2 |

## DIMENSIONS OF CORE

<FREQUENCY - PERMEABILITY CHARACTERISTICS


## NANOCRYSTALLINE COILS

## FMsories

Standard type for single phase

## -MAJOR USES

- Signal power line noise control
-DC power line noise control
- AC power line noise control


## -FEATURES

- The high permeability core is made of nano-crystal
- High impedance in spite of a small number of turns
- Excellent temperature characteristics
- Conforming to insulating type B and incombustibility UL94V-0


Maximum outer diameter : D1(Vertical), D2(Horizontal) Maximum width : W
Total lead length* : $L=30 \pm 3 \mathrm{~mm}$
Soldering boundary ${ }^{*}$ : $\mathrm{a}=1.5 \mathrm{mmMAX}$
The bottom of the core or coil $(\nabla)$ is defined as base surface.
-COIL STANDARD SPECIFICATIONS

| Coil Part No. (Old Coil Part No.) | Rated Current A | Inductance |  |  | Winding mm $\phi \times$ lines | Outside Dimensions |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 10kHz <br> (Typical) | 100kHz (Rating) |  |  | D1 | D2 | W |
|  |  | mH | mH |  |  |  |  |  |
| LDFM001802MS-V0E (FM01393MSPBF) | 1 | 28.0 | 8.0 | 200 | $0.35 \times 1 \mathrm{P}$ | 15.0 | 16.0 | 11.9 |
| LDFM002302MS-V0E (FM02173MSPBF) | 2 | 11.6 | 3.0 | 85 | $0.45 \times 1 \mathrm{P}$ | 15.0 | 16.0 | 11.9 |
| LDFM003152MS-V0E (FM03872MSPBF) | 3 | 5.6 | 1.5 | 45 | $0.55 \times 1 \mathrm{P}$ | 15.0 | 16.0 | 11.9 |
| $\begin{gathered} \hline \text { LDFM003552M5-V0E } \\ \text { (FM03552M5PBF) } \end{gathered}$ | 3 | 22.0 | 5.5 | 56 | $0.7 \times 1 \mathrm{P}$ | 28.0 | 29.0 | 15.0 |
| $\begin{gathered} \text { LDFM003153M6-V0E } \\ \text { (FM03153M6PBF) } \end{gathered}$ | 3 | 60.0 | 15.0 | 82 | $0.7 \times 1 \mathrm{P}$ | 29.0 | 30.5 | 20.5 |
| LDFM005132M5-V0E (FM05132M5PBF) | 5 | 5.4 | 1.3 | 16 | $1.0 \times 1 \mathrm{P}$ | 29.0 | 30.0 | 15.0 |
| $\begin{gathered} \text { LDFM005332M6-V0E } \\ \text { (FM05332M6PBF) } \end{gathered}$ | 5 | 13.0 | 3.3 | 21 | $1.0 \times 1 \mathrm{P}$ | 29.0 | 30.5 | 20.0 |
| $\begin{gathered} \text { LDFM005302MT-V0E } \\ \text { (FM05302MTPBF) } \end{gathered}$ | 5 | 13.0 | 3.0 | 17 | $1.1 \times 1 \mathrm{P}$ | 34.0 | 36.0 | 20.0 |
| $\begin{aligned} & \text { LDFM005502MT-V0E } \\ & \text { (FM05502MTPBF) } \\ & \hline \end{aligned}$ | 5 | 23.0 | 5.0 | 23 | $1.1 \times 1 \mathrm{P}$ | 34.5 | 36.5 | 20.5 |
| $\begin{aligned} & \text { LDFM005103MR-V0E } \\ & \text { (FM05103MRPBF) } \end{aligned}$ | 5 | 39.0 | 10.0 | 33 | $1.1 \times 1 \mathrm{P}$ | 39.0 | 41.0 | 25.5 |
| $\begin{gathered} \text { LDFM008451M5-V0E } \\ \text { (FM08451M5PBF) } \end{gathered}$ | 8 | 1.8 | 0.45 | 6.5 | $1.3 \times 1 \mathrm{P}$ | 29.5 | 31.0 | 15.0 |
| $\begin{gathered} \text { LDFM008102M6-V0E } \\ \text { (FM08102M6PBF) } \end{gathered}$ | 8 | 4.2 | 1.0 | 9 | $1.3 \times 1 \mathrm{P}$ | 29.5 | 31.5 | 20.5 |
| $\begin{gathered} \text { LDFM010102MT-V0E } \\ \text { (FM10102MTPBF) } \end{gathered}$ | 10 | 5.8 | 1.0 | 8 | $1.5 \times 1 \mathrm{P}$ | 34.0 | 38.0 | 22.0 |
| $\begin{gathered} \text { LDFM010302MT-V0E } \\ \text { (FM10302MTPBF) } \\ \hline \end{gathered}$ | 10 | 13.0 | 3.0 | 11 | $1.4 \times 1 \mathrm{P}$ | 36.0 | 38.0 | 22.0 |
| LDFM010502MR-V0E (FM10502MRPBF) | 10 | 24.0 | 5.0 | 15 | $1.5 \times 1 \mathrm{P}$ | 40.0 | 43.0 | 27.0 |
| LDFM010103MJ-V0E <br> (FM10103MJPBF) | 10 | 46.5 | 10.0 | 20 | $1.5 \times 1 \mathrm{P}$ | 46.5 | 47.5 | 27.5 |
| $\begin{gathered} \text { LDFM015102MT-V0E } \\ \text { (FM15102MTPBF) } \end{gathered}$ | 15 | 3.7 | 1.0 | 6 | $1.6 \times 1 \mathrm{P}$ | 34.5 | 38.0 | 20.5 |
| LDFM015302MR-V0E <br> (FM15302MRPBF) | 15 | 15.0 | 3.0 | 10 | $1.8 \times 1 \mathrm{P}$ | 40.0 | 42.5 | 29.0 |
| LDFM015502MJ-V0E (FM15502MJPBF) | 15 | 24.8 | 5.0 | 11 | $1.8 \times 1 \mathrm{P}$ | 47.0 | 49.0 | 28.0 |
| $\begin{gathered} \hline \text { LDFM020102MR-V0E } \\ \text { (FM20102MRPBF) } \end{gathered}$ | 20 | 4.2 | 1.0 | 5 | $1.5 \times 2 \mathrm{P}$ | 42.5 | 43.0 | 28.0 |
| LDFM020302MJ-VOE (FM20302MJPBF) | 20 | 13.5 | 3.0 | 7 | $1.5 \times 2 \mathrm{P}$ | 46.5 | 48.0 | 30.0 |
| LDFM025252MJ-V0E (FM25252MJPBF) | 25 | 11.6 | 2.5 | 5 | $1.6 \times 2 \mathrm{P}$ | 47.0 | 49.0 | 31.0 |
| $\begin{gathered} \hline \text { LDFM030102MR-V0E } \\ \text { (FM30102MRPBF) } \end{gathered}$ | 30 | 4.2 | 1.0 | 5 | $1.7 \times 2 \mathrm{P}$ | 39.5 | 44.0 | 29.5 |
| $\begin{gathered} \text { LDFM030202MJ-V0E } \\ \text { (FM30202MJPBF) } \\ \hline \end{gathered}$ | 30 | 9.9 | 2.0 | 6 | $1.7 \times 2 \mathrm{P}$ | 47.0 | 48.5 | 31.0 |

There is a horizontal putting type in all items in the a
" V " changes into " H " in last the third digit of the name of items.

## $\square$ - $/$ Series

## ROHS2 Compliant

High voltage type for single phase

## -MAJOR USES

-Common mode coils for noise filter in inverter or large capacity power supply

## -FEATURES

- Applicable to input voltage (700V)
-Remarkably miniaturized in profile benefited by high permeability core
- High inductance in spite of a small number of turns
- Low temperature rise and low D.C. resistance
-Stable frequency performance of noise suppression in wide frequency range
- Excellent temperature characteristics


## COIL STANDARD SPECIFICATIONS

| Coil Part No. (OId Coil Part No.) | Rated Current A | Inductance |  | D.C.R. $\mathrm{m} \Omega$ (max) | Winding $\mathrm{mm} \phi \times$ lines | Outside Dimensions |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 10kHz | 100kHz |  |  | $\begin{aligned} & \text { D1 } \\ & \text { mm } \end{aligned}$ | $\begin{gathered} \mathrm{D} 2 \\ \mathrm{~mm} \end{gathered}$ | $\begin{gathered} \text { w } \\ \text { mm } \end{gathered}$ | Dimensions |
|  |  | Typical mH | Rating mH |  |  |  |  |  |  |
| LDFM010402MBUB0E (FM10402MBUBPBF) | 10 | 16.0 | 4.0 | 12 | $1.5 \times 1 \mathrm{P}$ | 42.0 | 42.0 | 32.0 | Fig1 |
| LDFM015132MBUB0E (FM15132MBUBPBF) | 15 | 5.1 | 1.3 | 6 | $1.9 \times 1 \mathrm{P}$ | 42.0 | 42.0 | 32.5 | Fig1 |
| LDFM020342MJUV0E (FM20342MJUPBF) | 20 | 13.5 | 3.4 | 8 | $1.4 \times 2 \mathrm{P}$ | 49.0 | 49.0 | 31.0 | Fig2 |
| LDFM025252MJUV0E (FM25252MJUPBF) | 25 | 9.9 | 2.5 | 6 | $1.6 \times 2 \mathrm{P}$ | 50.0 | 50.0 | 32.0 | Fig2 |

LDFM010402MBPB0E, LDFM015132MBPB0E listed in the above table are coils of lying type with pedestal.
For LDFM020342MJPV0E, LDFM025252MJPV0E, lying type is also available. "V" changes into " H " in last the third digit of the name of items.
\&FREQUENCY - IMPEDANCE CHARACTERISTICS
\&FREQUENCY - INDUCTANCE CHARACTERISTICS



## NANOCRYSTALLINE COILS

## ㄷ $M_{\text {Series }}$

For three-phase circuit

## -MAJOR USES

-Common mode coils for noise filter in inverter or large capacity power supply

## -FEATURES

-Small profile, light through adoption of high permeability core

- High inductance in spite of a small number of turns
- Low temperature rise and, low D.C. resistance
- Stable frequency performance of noise suppression in wide frequency range

- Excellent temperature characteristics
-Conforming to insulating type B and incombustibility UL94V-0
-COIL STANDARD SPECIFICATIONS

| Coil Part No. (OId Coil Part No.) | RatedCurrent $\underset{A}{\text { Current }}$ | Inductance |  | $\begin{gathered} \text { D.C.R. } \\ \operatorname{m} \Omega \\ (\max ) \end{gathered}$ | Winding $\mathrm{mm} \phi \times$ lines | Outside Dimensions |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 10kHz | 100kHz |  |  | $\begin{gathered} \text { D1 } \\ \text { mm } \end{gathered}$ | $\begin{aligned} & \text { D2 } \\ & \text { mm } \end{aligned}$ | $\begin{gathered} \mathrm{w} \\ \mathrm{~mm} \end{gathered}$ |
|  |  | Typical mH | Rating mH |  |  |  |  |  |
| LDFM015802MGQH0E <br> (FM15802MGQPBF) | 15 | 30.0 | 8.0 | 15 | $2.0 \times 1 \mathrm{P}$ | 65.0 | 65.0 | 35.0 |
| LDFM020402MGQHOE <br> (FM20402MGQPBF) | 20 | 16.0 | 4.0 | 6 | $2.3 \times 1 \mathrm{P}$ | 65.0 | 65.0 | 35.0 |
| LDFMO25282MGQHOE (FM25282MGQPBF) | 25 | 10.0 | 2.8 | 5 | $1.8 \times 2 \mathrm{P}$ | 65.0 | 65.0 | 35.0 |
| LDFM030172MGQHOE (FM30172MGQPBF) | 30 | 7.0 | 1.7 | 4 | $2.0 \times 2 \mathrm{P}$ | 65.0 | 65.0 | 35.0 |

## \&REQUENCY - IMPEDANCE CHARACTERISTICS



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