

# SMD Power Inductor

VMPI42F-Series

## 1. Features

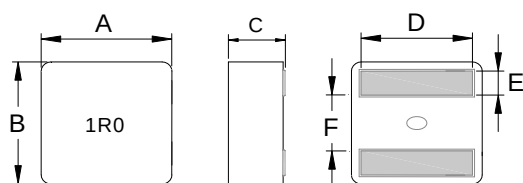
1. Soft saturation.
2. High current · low DCR · high efficiency.
3. Very low acoustic noise and very low leakage flux noise.
4. High reliability.
5. 100% Lead(Pb)-Free and RoHS compliant.
6. Operating temperature -40~+125℃ (Including self - temperature rise)



## 2. Applications

Note PC power system · incl. IMVP-6  
DC/DC converter .

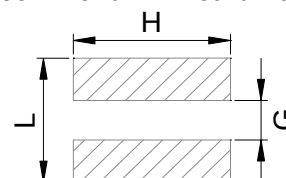
## 3. Dimensions



| Series  | A       | B       | C       | D       | E        | F        |
|---------|---------|---------|---------|---------|----------|----------|
| VMPI42F | 4.1±0.2 | 4.1±0.2 | 1.9±0.2 | 3.4±0.3 | 0.88±0.2 | 1.6±0.25 |

Unit:mm

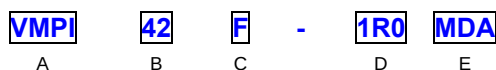
### Recommend PC Board Pattern



| L(mm)   | G(mm)   | H(mm)   |
|---------|---------|---------|
| 3.4 ref | 1.4 ref | 3.8 ref |

Note: 1、 The above PCB layout reference only.  
2、 Recommend solder paste thickness at 0.12mm and above.

## 4. Part Numbering



A: Series  
B: Dimension  
C: Type  
D: Inductance  
E: Inductance Tolerance

BxC  
Material.  
1R0=1.00uH  
M=±20%  
Marking: Black.1R0 and 1901(19 YY, 01 WW, follow production date).

## 5. Specification

| Part Number    | Inductance(uH)<br>±20% @ 0 A | I rms(A) Typ |             | I sat(A) |      | DCR(mΩ)<br>Typ. | DCR(mΩ)<br>Max. |
|----------------|------------------------------|--------------|-------------|----------|------|-----------------|-----------------|
|                |                              | 20℃<br>rise  | 40℃<br>rise | Typ      | Max  |                 |                 |
| VMPI42F-R10MDA | 0.10                         | 13.5         | 18.0        | 38.0     | 33.0 | 2.2             | 2.42            |
| VMPI42F-R22MDA | 0.22                         | 13.0         | 16.8        | 19.5     | 18.8 | 4.1             | 4.6             |
| VMPI42F-R60MDA | 0.60                         | 8.0          | 11.7        | 13.7     | 12.3 | 8.6             | 9.52            |
| VMPI42F-1R0MDA | 1.00                         | 6.8          | 9.6         | 9.6      | 8.8  | 13.3            | 14.6            |
| VMPI42F-1R5MDA | 1.50                         | 5.8          | 7.6         | 8.0      | 7.4  | 21.0            | 23.5            |
| VMPI42F-2R2MDA | 2.20                         | 4.6          | 5.6         | 6.5      | 6.0  | 35.2            | 38.7            |

Note:

1. Test frequency : L : 100KHz /0.1V.
2. All test data referenced to 25℃ ambient.
3. Testing Instrument : L: HP4284A,HP4395A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER,or EQU.
4. Current that causes the specified temperature rise from 25℃ ambient.
5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
6. The part temperature (ambient + temp rise) should not exceed 125℃ under worst case operating conditions.Circuit design,component,PCB trace size and thickness,airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
7. Special inquiries besides the above common used types can be met on your requirement.
8. Rated operating voltage(across inductor) 15V ref ( 1.5uH ) .  
Rated operating voltage(across inductor) 40V ref ( 1.0uH and below).

## 6. Typical Performance Curves

