

# SMD Power Inductor

## 1. Features

1. Low loss with low DCR.
2. High performance realized by metal dust core.
3. Ultralow buzz noise, due to composite construction.
4. 100% Lead(Pb)-Free & Halogen-Free and RoHS compliant.
5. High reliability-complied with AEC-Q200.

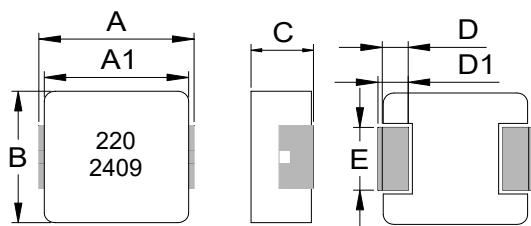
AEC-Q200



## 2. Applications

For automotive applications.

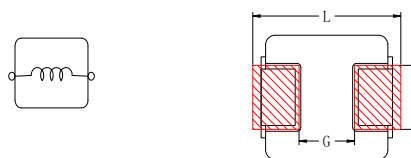
## 3. Dimensions



| A       | A1      | B        | C       | D       | D1      | E       |
|---------|---------|----------|---------|---------|---------|---------|
| 5.5±0.3 | 4.9±0.3 | 5.25±0.2 | 2.8±0.2 | 1.1±0.3 | 1.3±0.3 | 3.0±0.3 |

Unit: mm

Recommend PC Board Pattern



| L   | G   | H   |
|-----|-----|-----|
| 6.7 | 2.1 | 3.5 |

Note:

1. PCB layout is referred to IPC-7351B standard.
2. The above PCB layout is for reference only.

## 4. Part Numbering

FMPV 0503 SPV - 220 MN - D

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

BxC  
Standard.  
220=22.00uH  
M=±20%  
Marking: Black 220 and 2409 (24:YY,09:WW, follow production date).  
[Anti-static packaging](#)

## 5. Specification

| Part Number         | Inductance<br>(uH) $\pm 20\%$<br>@ 0 A DC | Irms ( A ) |      | Isat ( A ) |      | DCR (mΩ) |       |
|---------------------|-------------------------------------------|------------|------|------------|------|----------|-------|
|                     |                                           | Typ        | Max  | Typ        | Max  | Typ      | Max   |
| FMPV0503SPV-R10MN-D | 0.10                                      | 20.0       | 17.0 | 33.0       | 30.0 | 1.5      | 1.8   |
| FMPV0503SPV-R33MN-D | 0.33                                      | 17.0       | 15.0 | 15.0       | 13.0 | 3.9      | 4.7   |
| FMPV0503SPV-R36MN-D | 0.36                                      | 16.0       | 14.0 | 14.5       | 12.5 | 4.3      | 5.2   |
| FMPV0503SPV-R68MN-D | 0.68                                      | 12.0       | 11.0 | 11.7       | 10.0 | 8.5      | 9.7   |
| FMPV0503SPV-1R0MN-D | 1.00                                      | 10.5       | 9.5  | 8.0        | 6.7  | 10.0     | 11.5  |
| FMPV0503SPV-1R5MN-D | 1.50                                      | 8.5        | 7.6  | 6.5        | 5.7  | 15.4     | 17.7  |
| FMPV0503SPV-2R2MN-D | 2.20                                      | 7.5        | 6.6  | 5.8        | 4.8  | 20.0     | 23.0  |
| FMPV0503SPV-3R3MN-D | 3.30                                      | 6.0        | 5.5  | 5.4        | 4.5  | 31.0     | 36.0  |
| FMPV0503SPV-4R7MN-D | 4.70                                      | 5.2        | 4.4  | 4.5        | 4.0  | 49.0     | 57.0  |
| FMPV0503SPV-5R6MN-D | 5.60                                      | 4.4        | 3.8  | 4.3        | 3.8  | 61.0     | 71.0  |
| FMPV0503SPV-6R8MN-D | 6.80                                      | 4.0        | 3.5  | 4.0        | 3.5  | 72.0     | 83.0  |
| FMPV0503SPV-100MN-D | 10.0                                      | 3.0        | 2.5  | 2.4        | 2.0  | 97.0     | 111.0 |
| FMPV0503SPV-150MN-D | 15.0                                      | 2.5        | 2.0  | 2.2        | 1.9  | 165.0    | 190.0 |
| FMPV0503SPV-220MN-D | 22.0                                      | 2.2        | 1.8  | 2.0        | 1.7  | 205      | 235   |

Note:

1. Test frequency : 100KHz /1.0V.
2. All tested at 25°C ambient.
3. Testing Instrument (or eq.): Agilent 4284A,E4991A,4339B,KEYSIGHT E4980A/AL,chroma3302,3250,16502.
4. Heat rated current (Irms): current that cause temperature to rise approximately  $\Delta T$  of 40°C.
5. Saturation current (Isat) : current that cause L0 to drop approximately 30%.
6. The part temperature (ambient + temp. rise) should not exceed 165°C under worst case operating conditions. Circuit design, PCB trace and thickness, airflow and other cooling conditions all affect the part temperature. Part temperature should be verified in the end application.
7. Irms Test : temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.
8. Rated DC current: the lower value of Irms and Isat.

## 6. Typical Performance Curves

