

## SMD Power Inductor –PD



### Applications

- Portable telephones.
- Personal computers.
- DC/DC converters, etc.
- Other various electronic appliances.

### Features

- High power, High saturation inductors.
- Ideal inductors for DC-DC conversion in notebook computer, PDAs, Step-up or step-down converters, flash memory programmers, etc.
- PD1608 used ceramic base with gold-plating.
- The others used LCP plastic base.

### Inductance and rated current ranges

- PD1608 1.0 $\mu$ H~1000 $\mu$ H 2.9~0.07A
- PD1813 0.18 $\mu$ H~100 $\mu$ H 10~0.47A
- PD3308 10  $\mu$ H~1000 $\mu$ H 2.0~0.05A
- PD3316 1.0 $\mu$ H~1000 $\mu$ H 6.8~0.30A
- PD3340 10  $\mu$ H~1000 $\mu$ H 3.5~0.10A
- PD5022 1.0 $\mu$ H~1000 $\mu$ H 8.6~0.56A
- Test equipment:  
L: HP4284A LCR meter @ 100KHz 0.1V  
DCR Resistance: Milli-ohm meter or equivalent.  
SRF: HP4291B RF Impedance Analyzer.  
Electrical Specifications at 25°C.

### Product Identification

**PD 1608 M T 101**

(1) (2) (3) (4) (5)

(1)Type: SMD Power Inductors

(2)Dimensions(mm):1608=6.60×4.45×2.92, 1813=8.89×6.1×4.7  
3308=12.95×9.40×3.50, 5022=18.54×15.24×7.11  
3316=12.95×9.40×5.21, 3340=12.95×9.40×11.43

(3)Tolerance: M=20%, K=10%

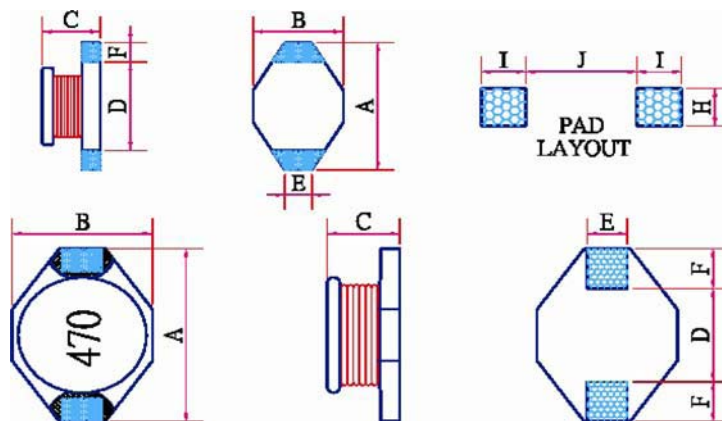
(4) Packaging style: T (Tape and Reel)

(5) Inductance: 1R1=1.1 $\mu$ H, 470=47 $\mu$ H, 101 =100 $\mu$ H

### Characteristics:

- Saturation Rated Current (I sat): The current when the inductance becomes 10%lower then its initial value. (Ta=25°C)
- Temperature Rise Current (I rms): The actual current when temperature of coil becomes  $\Delta$ 40°C. (Ta=25°C)
- Operating temperature range: -20~80°C.

## Dimensions



Unit: mm

| Codes  | A max | B max | C max | D    | E    | F    | H    | I    | J     |
|--------|-------|-------|-------|------|------|------|------|------|-------|
| PD1608 | 6.60  | 4.45  | 2.92  | 4.32 | 1.27 | 1.02 | 3.56 | 1.40 | 4.06  |
| PD1813 | 8.89  | 6.10  | 4.70  | 5.00 | 2.54 | 2.54 | 2.79 | 2.92 | 5.00  |
| PD3308 | 12.95 | 9.40  | 3.50  | 7.62 | 2.54 | 2.54 | 2.79 | 2.92 | 7.37  |
| PD3316 | 12.95 | 9.40  | 5.21  | 7.62 | 2.54 | 2.54 | 2.79 | 2.92 | 7.37  |
| PD3340 | 12.95 | 9.40  | 11.43 | 7.62 | 2.54 | 2.54 | 2.79 | 2.92 | 7.37  |
| PD5022 | 18.84 | 15.24 | 7.11  | 12.7 | 2.54 | 2.54 | 2.79 | 2.92 | 12.45 |

## Electrical Characteristics

### PD1608 TYPE

| Part No. | Tolerance | L (μH) | DCR (Ω) | SRF ref (MHz) | I sat (A) | I rms (A) |
|----------|-----------|--------|---------|---------------|-----------|-----------|
| 1R0      | M         | 1.0    | 0.05    | 130           | 2.90      | 2.90      |
| 1R5      | M         | 1.5    | 0.05    | 115           | 2.60      | 2.80      |
| 2R2      | M         | 2.2    | 0.07    | 90            | 2.30      | 2.40      |
| 3R3      | M         | 3.3    | 0.08    | 70            | 2.00      | 2.00      |
| 4R7      | M         | 4.7    | 0.09    | 50            | 1.50      | 1.50      |
| 6R8      | M         | 6.8    | 0.13    | 45            | 1.20      | 1.40      |
| 100      | M         | 10     | 0.16    | 35            | 1.10      | 1.10      |
| 150      | M         | 15     | 0.23    | 30            | 0.90      | 1.20      |
| 220      | K         | 22     | 0.37    | 20            | 0.70      | 0.80      |
| 330      | K         | 33     | 0.51    | 15            | 0.58      | 0.60      |
| 470      | K         | 47     | 0.64    | 14            | 0.50      | 0.50      |
| 680      | K         | 68     | 0.86    | 11            | 0.40      | 0.40      |
| 101      | K         | 100    | 1.27    | 9.0           | 0.31      | 0.30      |
| 151      | K         | 150    | 2.00    | 6.0           | 0.27      | 0.25      |
| 221      | K         | 220    | 3.11    | 5.5           | 0.22      | 0.20      |
| 331      | K         | 330    | 3.80    | 5.0           | 0.18      | 0.16      |
| 471      | K         | 470    | 6.20    | 4.0           | 0.16      | 0.15      |
| 681      | K         | 680    | 9.20    | 3.0           | 0.14      | 0.12      |
| 102      | K         | 1000   | 13.8    | 2.0           | 0.10      | 0.07      |

### PD1813 TYPE

| Part No. | Tolerance | L (μH) | DCR (Ω) | SRF ref (MHz) | I sat (A) | I rms (A) |
|----------|-----------|--------|---------|---------------|-----------|-----------|
| R18      | M         | 0.18   | 0.003   | 800           | 14.0      | 10.0      |
| R33      | M         | 0.33   | 0.004   | 600           | 10.0      | 7.0       |
| R56      | M         | 0.56   | 0.010   | 200           | 7.7       | 6.0       |
| 1R2      | M         | 1.2    | 0.017   | 140           | 5.3       | 4.4       |
| 2R2      | M         | 2.2    | 0.035   | 100           | 3.5       | 3.1       |
| 3R3      | M         | 3.3    | 0.040   | 80            | 3.0       | 2.7       |
| 4R7      | M         | 4.7    | 0.054   | 50            | 2.6       | 2.2       |
| 6R8      | M         | 6.8    | 0.080   | 45            | 2.2       | 1.8       |
| 100      | M         | 10     | 0.111   | 40            | 1.9       | 1.5       |
| 150      | M         | 15     | 0.170   | 30            | 1.5       | 1.2       |
| 220      | M         | 22     | 0.250   | 25            | 1.2       | 1.0       |
| 330      | M         | 33     | 0.350   | 20            | 0.99      | 0.82      |
| 470      | M         | 47     | 0.470   | 15            | 0.87      | 0.72      |
| 680      | M         | 68     | 0.730   | 10            | 0.67      | 0.56      |
| 101      | M         | 100    | 1.110   | 8             | 0.53      | 0.47      |

## Electrical Characteristics



### PD3308 TYPE

| Part No. | Tolerance | L<br>( $\mu$ H) | DCR<br>( $\Omega$ ) | SRF ref<br>(MHz) | I sat<br>(A) | I rms<br>(A) |
|----------|-----------|-----------------|---------------------|------------------|--------------|--------------|
| 100      | M         | 10              | 0.11                | 35               | 2.4          | 2.00         |
| 150      | M         | 15              | 0.15                | 33               | 2.0          | 1.50         |
| 220      | M         | 22              | 0.23                | 25               | 1.6          | 1.30         |
| 330      | M         | 33              | 0.30                | 19               | 1.4          | 1.10         |
| 470      | M         | 47              | 0.39                | 14               | 1.0          | 0.80         |
| 680      | M         | 68              | 0.66                | 12               | 0.9          | 0.70         |
| 101      | M         | 100             | 0.84                | 10               | 0.7          | 0.60         |
| 151      | M         | 150             | 1.20                | 8.0              | 0.6          | 0.50         |
| 221      | M         | 220             | 1.90                | 6.0              | 0.5          | 0.40         |
| 331      | M         | 330             | 2.70                | 5.0              | 0.4          | 0.30         |
| 471      | M         | 470             | 4.00                | 4.0              | 0.3          | 0.20         |
| 681      | M         | 680             | 5.30                | 3.0              | 0.2          | 0.10         |
| 102      | M         | 1000            | 8.40                | 2.5              | 0.1          | 0.05         |

### PD3316 TYPE

| Part No. | Tolerance | L<br>( $\mu$ H) | DCR<br>( $\Omega$ ) | SRF ref<br>(MHz) | I sat<br>(A) | I rms<br>(A) |
|----------|-----------|-----------------|---------------------|------------------|--------------|--------------|
| 1R0      | M         | 1.0             | 0.009               | 100              | 9.00         | 6.80         |
| 1R5      | M         | 1.5             | 0.010               | 90               | 8.00         | 6.40         |
| 2R2      | M         | 2.2             | 0.012               | 80               | 7.00         | 6.10         |
| 3R3      | M         | 3.3             | 0.015               | 65               | 6.40         | 5.40         |
| 4R7      | M         | 4.7             | 0.018               | 45               | 5.40         | 4.80         |
| 6R8      | M         | 6.8             | 0.027               | 38               | 4.60         | 4.40         |
| 100      | M         | 10              | 0.038               | 30               | 3.80         | 3.90         |
| 150      | M         | 15              | 0.046               | 27               | 3.00         | 3.10         |
| 220      | M         | 22              | 0.085               | 19               | 2.60         | 2.70         |
| 330      | M         | 33              | 0.100               | 15               | 2.00         | 2.10         |
| 470      | M         | 47              | 0.140               | 12               | 1.60         | 1.80         |
| 680      | M         | 68              | 0.200               | 10               | 1.40         | 1.50         |
| 101      | M         | 100             | 0.280               | 9.0              | 1.20         | 1.30         |
| 151      | M         | 150             | 0.400               | 6.0              | 1.00         | 1.00         |
| 221      | M         | 220             | 0.610               | 5.0              | 0.80         | 0.80         |
| 331      | M         | 330             | 1.020               | 4.5              | 0.60         | 0.60         |
| 471      | M         | 470             | 1.270               | 3.5              | 0.50         | 0.50         |
| 681      | M         | 680             | 2.020               | 2.5              | 0.40         | 0.40         |
| 102      | M         | 1000            | 3.000               | 2.0              | 0.30         | 0.30         |

### PD3340 TYPE

| Part No. | Tolerance | L<br>( $\mu$ H) | DCR<br>( $\Omega$ ) | SRF ref<br>(MHz) | I sat<br>(A) | I rms<br>(A) |
|----------|-----------|-----------------|---------------------|------------------|--------------|--------------|
| 100      | M         | 10              | 0.04                | 22               | 8.00         | 3.50         |
| 150      | M         | 15              | 0.05                | 18               | 7.00         | 3.00         |
| 220      | M         | 22              | 0.07                | 11               | 5.50         | 2.50         |
| 330      | M         | 33              | 0.08                | 9.0              | 4.00         | 2.00         |
| 470      | M         | 47              | 0.11                | 8.0              | 3.80         | 1.60         |
| 680      | M         | 68              | 0.17                | 7.0              | 3.00         | 1.20         |
| 101      | M         | 100             | 0.22                | 5.0              | 2.50         | 1.20         |
| 151      | M         | 150             | 0.34                | 4.0              | 2.00         | 0.90         |
| 221      | M         | 220             | 0.44                | 3.5              | 1.60         | 0.70         |
| 331      | M         | 330             | 0.70                | 2.5              | 1.20         | 0.60         |
| 471      | M         | 470             | 0.95                | 2.0              | 1.00         | 0.30         |
| 681      | M         | 680             | 1.20                | 2.0              | 1.00         | 0.20         |
| 102      | M         | 1000            | 2.00                | 1.5              | 0.80         | 0.10         |



## Electrical Characteristics

### PD5022 TYPE

| Part No. | Tolerance | L<br>( $\mu$ H) | DCR<br>( $\Omega$ ) | SRF ref<br>(MHz) | I sat<br>(A) | I rms<br>(A) |
|----------|-----------|-----------------|---------------------|------------------|--------------|--------------|
| 1R0      | M         | 1.0             | 0.009               | 80               | 20           | 8.60         |
| 2R2      | M         | 2.2             | 0.014               | 80               | 16           | 7.10         |
| 3R3      | M         | 3.3             | 0.018               | 60               | 14           | 6.20         |
| 5R6      | M         | 5.6             | 0.020               | 40               | 12           | 5.30         |
| 100      | M         | 10              | 0.031               | 30               | 10           | 4.30         |
| 150      | M         | 15              | 0.036               | 22               | 8.0          | 4.00         |
| 220      | M         | 22              | 0.047               | 20               | 7.0          | 3.50         |
| 330      | M         | 33              | 0.066               | 15               | 5.5          | 3.00         |
| 470      | M         | 47              | 0.086               | 9.0              | 4.5          | 2.60         |
| 680      | M         | 68              | 0.130               | 8.0              | 3.5          | 2.30         |
| 101      | M         | 100             | 0.190               | 7.0              | 3.0          | 1.80         |
| 151      | M         | 150             | 0.250               | 6.0              | 2.6          | 1.50         |
| 221      | M         | 220             | 0.380               | 5.0              | 2.4          | 1.20         |
| 331      | M         | 330             | 0.560               | 4.0              | 1.9          | 1.00         |
| 471      | M         | 470             | 0.850               | 3.0              | 1.4          | 0.82         |
| 681      | M         | 680             | 1.100               | 2.5              | 1.2          | 0.72         |
| 102      | M         | 1000            | 1.800               | 2.0              | 1.0          | 0.56         |

