

POWER INDUCTOR**P7609 Family****Features**

- * Lead-free (Pb-free)
- * RoHS compliant
- * Current to 3.8A
- * Low DCR (to 30mΩ)
- * Low profile (to 2.2mm)
- * Surface Mount
- * Flat top for pick & place
- * Electroplated terminals

Applications

- * DC-DC Converters
- * Notebook and handheld equipment
- * LCD TV sets
- * Consumer products

DESCRIPTION

The P7609 family comprises medium current, unshielded power inductors available in eight low profile sizes (2.2-5.4mm).

The range covers three decades of values from 1μH to 820μH, and provides very cost-effective and compact solutions for medium power applications.

In this family Pb-free electrodes are directly plated onto the ferrite. Such terminations provide excellent solderability, terminal strength and heat resistance.

The P7609 family is compliant with RoHS Directive 2002/95/EC, and suitable for lead-free and conventional placement and reflow.



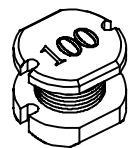
P7609-032



P7609-043



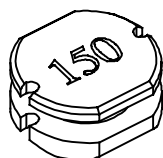
P7609-052



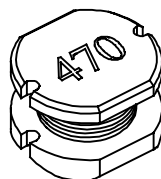
P7609-054



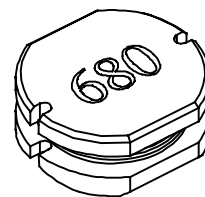
RoHS
COMPLIANT



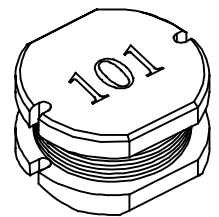
P7609-073



P7609-075



P7609-104



P7609-105

SPECIFICATIONS

Electrical

032 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	Rated Current ⁽²⁾ I_{DC} (A)
P7609-032-1R0M	1.0 \pm 20%	0.04	1.50
P7609-032-1R4M	1.4 \pm 20%	0.05	1.50
P7609-032-2R8M	1.8 \pm 20%	0.06	0.80
P7609-032-2R2M	2.2 \pm 20%	0.08	0.75
P7609-032-2R7M	2.7 \pm 20%	0.10	0.75
P7609-032-3R3M	3.3 \pm 20%	0.15	0.60
P7609-032-3R9M	3.9 \pm 20%	0.20	0.50
P7609-032-4R7M	4.7 \pm 20%	0.20	0.50
P7609-032-5R6M	5.6 \pm 20%	0.23	0.45
P7609-032-6R8M	6.8 \pm 20%	0.25	0.40
P7609-032-8R2M	8.2 \pm 20%	0.30	0.40
P7609-032-100M	10 \pm 20%	0.35	0.35
P7609-032-120M	12 \pm 20%	0.40	0.35
P7609-032-150M	15 \pm 20%	0.50	0.30
P7609-032-180M	18 \pm 20%	0.55	0.30
P7609-032-220M	22 \pm 20%	0.60	0.30
P7609-032-270M	27 \pm 20%	0.70	0.30
P7609-032-330M	33 \pm 20%	1.0	0.25
P7609-032-390M	39 \pm 20%	1.2	0.25
P7609-032-470M	47 \pm 20%	1.5	0.20
P7609-032-560M	56 \pm 20%	1.8	0.20
P7609-032-680M	68 \pm 20%	2.0	0.18
P7609-032-820M	82 \pm 20%	2.5	0.16
P7609-032-101M	100 \pm 20%	3.0	0.15
P7609-032-121M	120 \pm 20%	3.5	0.14
P7609-032-151M	150 \pm 20%	4.0	0.13
P7609-032-181M	180 \pm 20%	5.0	0.12
P7609-032-221M	220 \pm 20%	5.5	0.10
P7609-032-271M	270 \pm 20%	6.0	0.10
P7609-032-331M	330 \pm 20%	7.0	0.10
P7609-032-391M	390 \pm 20%	8.0	0.10
P7609-032-471M	470 \pm 20%	12.0	0.09

Notes

1. Inductance measured at 1V, 8MHz (<10 μH), 2.5MHz (10-82 μH), 1kHz (100 μH -1mH).
2. Rated Current, I_{DC} , is the current at which the temperature rise is 40°C (max) or the DC current at which the zero-current inductance drops by 10% max, whichever is lower.
3. Operating temperature -25°C to +85°C.
4. For non-standard inductance values, please contact Profec.

043 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	Rated Current ⁽²⁾ I_{DC} (A)
P7609-043-1R0M	1.0 \pm 20%	0.033	3.80
P7609-043-1R4M	1.4 \pm 20%	0.038	3.30
P7609-043-2R8M	1.8 \pm 20%	0.042	2.91
P7609-043-2R2M	2.2 \pm 20%	0.047	2.60
P7609-043-2R7M	2.7 \pm 20%	0.052	2.43
P7609-043-3R3M	3.3 \pm 20%	0.058	2.15
P7609-043-3R9M	3.9 \pm 20%	0.076	1.98
P7609-043-4R7M	4.7 \pm 20%	0.094	1.70
P7609-043-5R6M	5.6 \pm 20%	0.101	1.60
P7609-043-6R8M	6.8 \pm 20%	0.117	1.41
P7609-043-8R2M	8.2 \pm 20%	0.132	1.26
P7609-043-100M	10 \pm 20%	0.182	1.15
P7609-043-120M	12 \pm 20%	0.21	1.05
P7609-043-150M	15 \pm 20%	0.24	0.92
P7609-043-180M	18 \pm 20%	0.34	0.84
P7609-043-220M	22 \pm 20%	0.38	0.76
P7609-043-270M	27 \pm 20%	0.52	0.71
P7609-043-330K	33 \pm 10%	0.54	0.64
P7609-043-390K	39 \pm 10%	0.59	0.59
P7609-043-470K	47 \pm 10%	0.85	0.54
P7609-043-560K	56 \pm 10%	0.94	0.50
P7609-043-680K	68 \pm 10%	1.12	0.46

Notes

1. Inductance measured at 1V, 8MHz (<10 μH), 2.5MHz (10-82 μH).
2. Rated Current, I_{DC} , is the current at which the temperature rise is 40°C (max) or the DC current at which the zero-current inductance drops by 10% max, whichever is lower.
3. Operating temperature -25°C to +85°C.
4. For non-standard inductance values, please contact Profec.

052 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	Rated Current ⁽²⁾ I_{DC} (A)
P7609-052-1R0M	1.0 \pm 20%	0.030	4.8
P7609-052-1R4M	1.4 \pm 20%	0.035	4.2
P7609-052-2R8M	1.8 \pm 20%	0.040	3.8
P7609-052-2R2M	2.2 \pm 20%	0.050	3.5
P7609-052-2R7M	2.7 \pm 20%	0.055	3.1
P7609-052-3R3M	3.3 \pm 20%	0.07	3.0
P7609-052-3R9M	3.9 \pm 20%	0.08	2.8
P7609-052-4R7M	4.7 \pm 20%	0.09	2.7
P7609-052-5R6M	5.6 \pm 20%	0.11	2.2
P7609-052-6R8M	6.8 \pm 20%	0.14	1.9
P7609-052-8R2M	8.2 \pm 20%	0.15	1.8
P7609-052-100M	10 \pm 20%	0.17	1.5
P7609-052-120M	12 \pm 20%	0.25	1.4
P7609-052-150M	15 \pm 20%	0.28	1.2
P7609-052-180M	18 \pm 20%	0.32	1.1
P7609-052-220M	22 \pm 20%	0.42	1.0
P7609-052-270M	27 \pm 20%	0.45	0.9
P7609-052-330M	33 \pm 20%	0.55	0.8
P7609-052-390M	39 \pm 20%	0.58	0.75
P7609-052-470M	47 \pm 20%	0.83	0.70
P7609-052-560M	56 \pm 20%	0.90	0.65
P7609-052-680M	68 \pm 20%	0.97	0.60
P7609-052-820M	82 \pm 20%	1.2	0.55
P7609-052-101M	100 \pm 20%	1.5	0.50
P7609-052-121M	120 \pm 20%	1.7	0.47
P7609-052-151M	150 \pm 20%	2.0	0.45
P7609-052-181M	180 \pm 20%	2.6	0.40
P7609-052-221M	220 \pm 20%	3.4	0.35
P7609-052-271M	270 \pm 20%	4.0	0.30
P7609-052-331M	330 \pm 20%	4.5	0.27
P7609-052-391M	390 \pm 20%	5.0	0.25
P7609-052-471M	470 \pm 20%	7.0	0.23
P7609-052-561M	560 \pm 20%	8.0	0.21

Notes

1. Inductance measured at 1V, 8MHz (<10 μH), 2.5MHz (10-82 μH), 1kHz (100 μH -1mH).
2. Rated Current, I_{DC} , is the current at which the temperature rise is 40°C (max) or the DC current at which the zero-current inductance drops by 10% max, whichever is lower.
3. Operating temperature -25°C to +85°C.
4. For non-standard inductance values, please contact Profec.

054 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	Rated Current ⁽²⁾ I_{DC} (A)
P7609-054-100M	10 \pm 20%	0.10	1.44
P7609-054-120M	12 \pm 20%	0.12	1.40
P7609-054-150M	15 \pm 20%	0.14	1.30
P7609-054-180M	18 \pm 20%	0.15	1.23
P7609-054-220M	22 \pm 20%	0.18	1.11
P7609-054-270M	27 \pm 20%	0.20	0.97
P7609-054-330K	33 \pm 10%	0.23	0.88
P7609-054-390K	39 \pm 10%	0.32	0.80
P7609-054-470K	47 \pm 10%	0.37	0.72
P7609-054-560K	56 \pm 10%	0.42	0.68
P7609-054-680K	68 \pm 10%	0.46	0.61
P7609-054-820K	82 \pm 10%	0.60	0.58
P7609-054-101K	100 \pm 10%	0.70	0.52
P7609-054-121K	120 \pm 10%	0.93	0.48
P7609-054-151K	150 \pm 10%	1.1	0.40
P7609-054-181K	180 \pm 10%	1.4	0.38
P7609-054-221K	220 \pm 10%	1.6	0.35

Notes

1. Inductance measured at 1V, 2.5MHz (10-82 μH), 1kHz (100 μH -1mH).
2. Rated Current, I_{DC} , is the current at which the temperature rise is 40°C (max) or the DC current at which the zero-current inductance drops by 10% max, whichever is lower.
3. Operating temperature -25°C to +85°C.
4. For non-standard inductance values, please contact Profec.

073 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	Rated Current ⁽²⁾ I_{DC} (A)
P7609-073-100M	10 \pm 20%	0.080	1.44
P7609-073-120M	12 \pm 20%	0.090	1.39
P7609-073-150M	15 \pm 20%	0.104	1.24
P7609-073-180M	18 \pm 20%	0.11	1.12
P7609-073-220M	22 \pm 20%	0.13	1.07
P7609-073-270M	27 \pm 20%	0.15	0.97
P7609-073-330M	33 \pm 20%	0.17	0.85
P7609-073-390M	39 \pm 20%	0.22	0.74
P7609-073-470M	47 \pm 20%	0.25	0.68
P7609-073-560K	56 \pm 10%	0.28	0.64
P7609-073-680K	68 \pm 10%	0.33	0.59
P7609-073-820K	82 \pm 10%	0.41	0.54
P7609-073-101K	100 \pm 10%	0.48	0.51
P7609-073-121K	120 \pm 10%	0.54	0.49
P7609-073-151K	150 \pm 10%	0.76	0.40
P7609-073-181K	180 \pm 10%	1.02	0.36
P7609-073-221K	220 \pm 10%	1.20	0.31
P7609-073-271K	270 \pm 10%	1.31	0.29
P7609-073-331K	330 \pm 10%	1.50	0.28

Notes

1. Inductance measured at 1V, 2.5MHz (10-82 μH), 1kHz (100 μH -1mH).
2. Rated Current, I_{DC} , is the current at which the temperature rise is 40°C (max) or the DC current at which the zero-current inductance drops by 10% max, whichever is lower.
3. Operating temperature -25°C to +85°C.
4. For non-standard inductance values, please contact Profec.

075 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	Rated Current ⁽²⁾ I_{DC} (A)
P7609-075-100M	10 \pm 20%	0.07	2.3
P7609-075-120M	12 \pm 20%	0.08	2.0
P7609-075-150M	15 \pm 20%	0.09	1.8
P7609-075-180M	18 \pm 20%	0.10	1.6
P7609-075-220M	22 \pm 20%	0.11	1.5
P7609-075-270M	27 \pm 20%	0.12	1.3
P7609-075-330M	33 \pm 20%	0.13	1.2
P7609-075-390M	39 \pm 20%	0.16	1.1
P7609-075-470K	47 \pm 10%	0.18	1.1
P7609-075-560K	56 \pm 10%	0.24	0.94
P7609-075-680K	68 \pm 10%	0.28	0.85
P7609-075-820K	82 \pm 10%	0.37	0.78
P7609-075-101K	100 \pm 10%	0.43	0.72
P7609-075-121K	120 \pm 10%	0.47	0.66
P7609-075-151K	150 \pm 10%	0.64	0.58
P7609-075-181K	180 \pm 10%	0.71	0.51
P7609-075-221K	220 \pm 10%	0.96	0.49
P7609-075-271K	270 \pm 10%	1.1	0.42
P7609-075-331K	330 \pm 10%	1.3	0.40
P7609-075-391K	390 \pm 10%	1.8	0.36
P7609-075-471K	470 \pm 10%	2.0	0.34

Notes

1. Inductance measured at 1V, 2.5MHz (10-82 μH), 1kHz (100 μH -1mH).
2. Rated Current, I_{DC} , is the current at which the temperature rise is 40°C (max) or the DC current at which the zero-current inductance drops by 10% max, whichever is lower.
3. Operating temperature -25°C to +85°C.
4. For non-standard inductance values, please contact Profec.

104 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	Rated Current ⁽²⁾ I_{DC} (A)
P7609-104-100M	10 \pm 20%	0.053	2.38
P7609-104-120M	12 \pm 20%	0.061	2.13
P7609-104-150M	15 \pm 20%	0.070	1.87
P7609-104-180M	18 \pm 20%	0.081	1.73
P7609-104-220M	22 \pm 20%	0.088	1.60
P7609-104-270M	27 \pm 20%	0.10	1.44
P7609-104-330M	33 \pm 20%	0.12	1.26
P7609-104-390M	39 \pm 20%	0.15	1.20
P7609-104-470M	47 \pm 20%	0.17	1.10
P7609-104-560K	56 \pm 10%	0.20	1.01
P7609-104-680K	68 \pm 10%	0.23	0.91
P7609-104-820K	82 \pm 10%	0.25	0.85
P7609-104-101K	100 \pm 10%	0.35	0.74
P7609-104-121K	120 \pm 10%	0.40	0.69
P7609-104-151K	150 \pm 10%	0.55	0.61
P7609-104-181K	180 \pm 10%	0.62	0.56
P7609-104-221K	220 \pm 10%	0.72	0.53
P7609-104-271K	270 \pm 10%	0.95	0.45
P7609-104-331K	330 \pm 10%	1.10	0.42
P7609-104-391K	390 \pm 10%	1.25	0.38
P7609-104-471K	470 \pm 10%	1.53	0.35
P7609-104-561K	560 \pm 10%	1.91	0.32

Notes

1. Inductance measured at 1V, 2.5MHz (10-82 μH), 1kHz (100 μH -1mH).
2. Rated Current, I_{DC} , is the current at which the temperature rise is 40°C (max) or the DC current at which the zero-current inductance drops by 10% max, whichever is lower.
3. Operating temperature -25°C to +85°C.
4. For non-standard inductance values, please contact Profec.

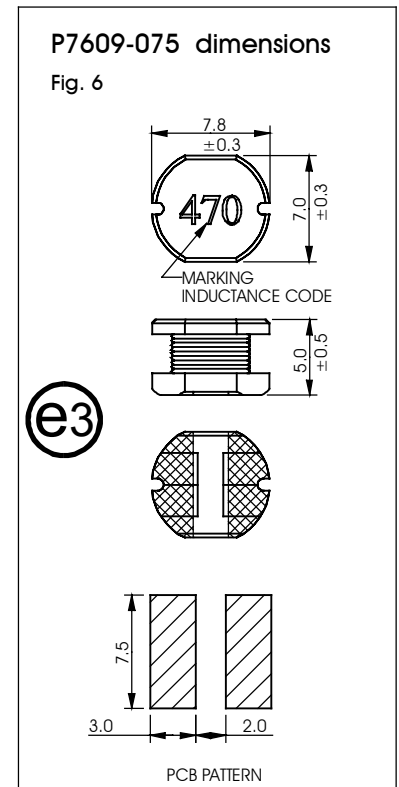
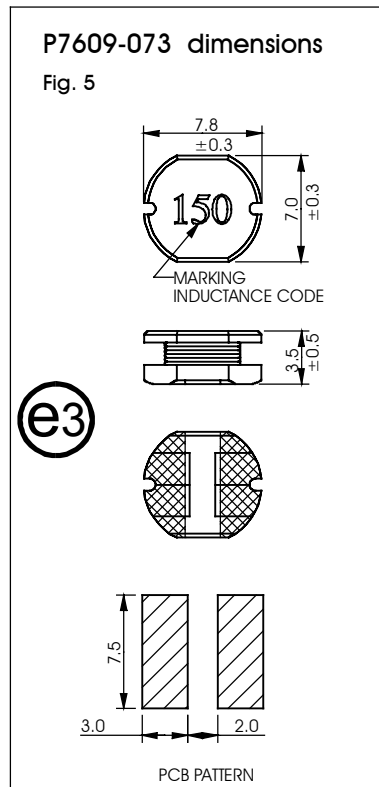
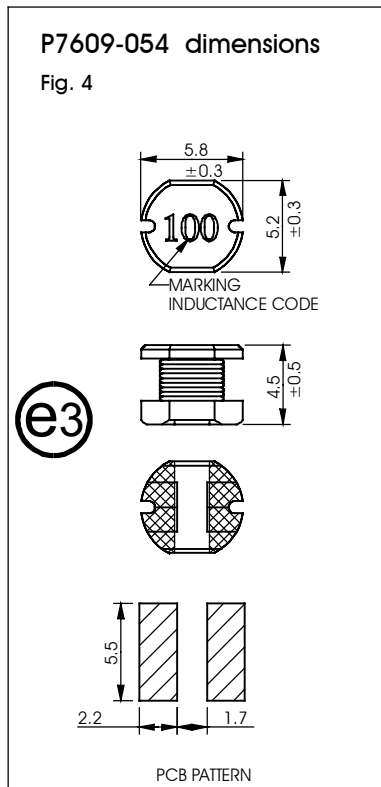
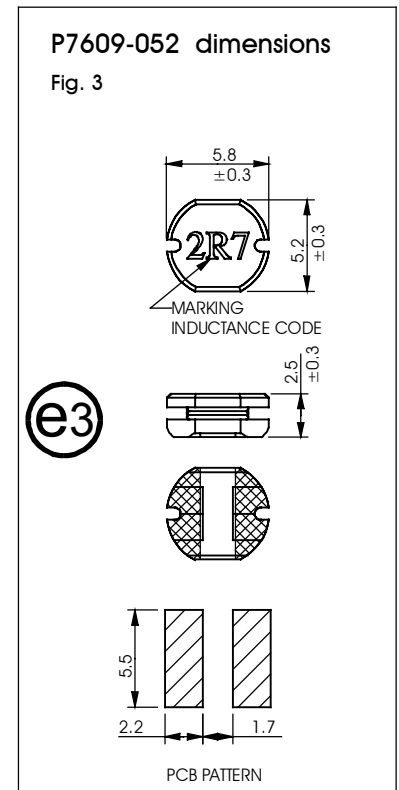
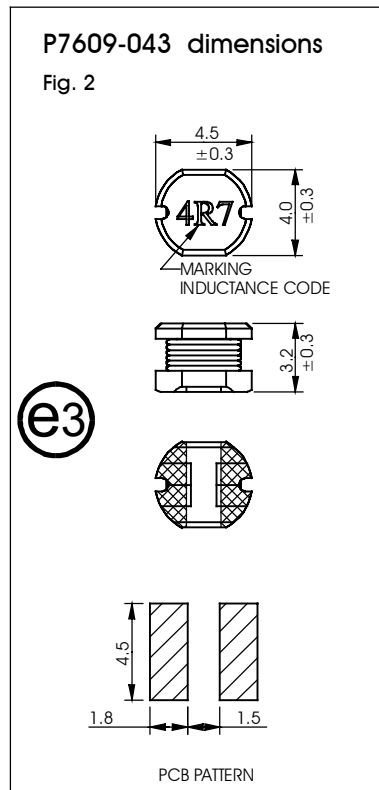
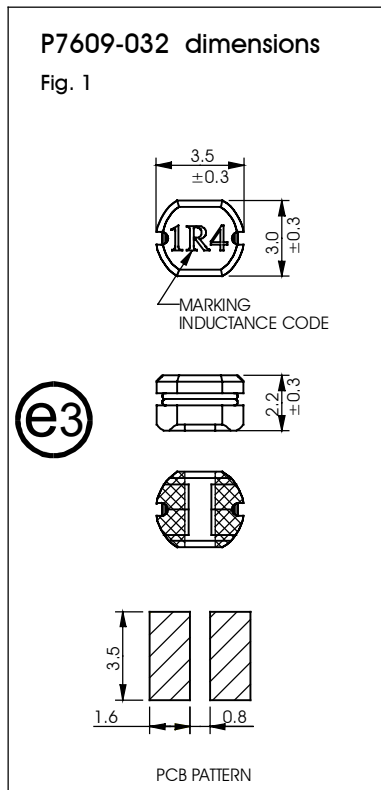
105 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	Rated Current ⁽²⁾ I_{DC} (A)
P7609-105-100M	10 \pm 20%	0.06	2.60
P7609-105-120M	12 \pm 20%	0.07	2.45
P7609-105-150M	15 \pm 20%	0.08	2.27
P7609-105-180M	18 \pm 20%	0.09	2.15
P7609-105-220M	22 \pm 20%	0.10	1.95
P7609-105-270M	27 \pm 20%	0.11	1.76
P7609-105-330M	33 \pm 20%	0.12	1.50
P7609-105-390M	39 \pm 20%	0.14	1.37
P7609-105-470K	47 \pm 10%	0.17	1.28
P7609-105-560K	56 \pm 10%	0.19	1.17
P7609-105-680K	68 \pm 10%	0.22	1.11
P7609-105-820K	82 \pm 10%	0.25	1.00
P7609-105-101K	100 \pm 10%	0.35	0.97
P7609-105-121K	120 \pm 10%	0.40	0.89
P7609-105-151K	150 \pm 10%	0.47	0.78
P7609-105-181K	180 \pm 10%	0.63	0.72
P7609-105-221K	220 \pm 10%	0.73	0.66
P7609-105-271K	270 \pm 10%	0.97	0.57
P7609-105-331K	330 \pm 10%	1.15	0.52
P7609-105-391K	390 \pm 10%	1.30	0.48
P7609-105-471K	470 \pm 10%	1.48	0.42
P7609-105-561K	560 \pm 10%	1.90	0.33
P7609-105-681K	680 \pm 10%	2.25	0.28
P7609-105-821K	820 \pm 10%	2.55	0.24

Notes

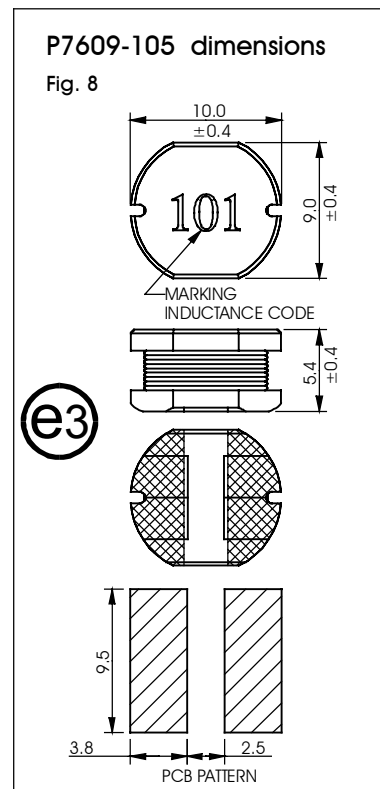
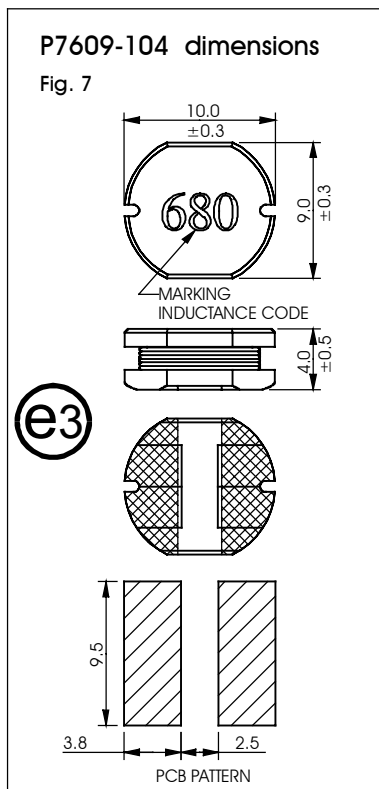
1. Inductance measured at 1V, 2.5MHz (10-82 μH), 1kHz (100 μH -1mH).
2. Rated Current, I_{DC} , is the current at which the temperature rise is 40°C (max) or the DC current at which the zero-current inductance drops by 10% max, whichever is lower.
3. Operating temperature -25°C to +85°C.
4. For non-standard inductance values, please contact Profec.

CONSTRUCTION



Dimensions shown are in millimetres.

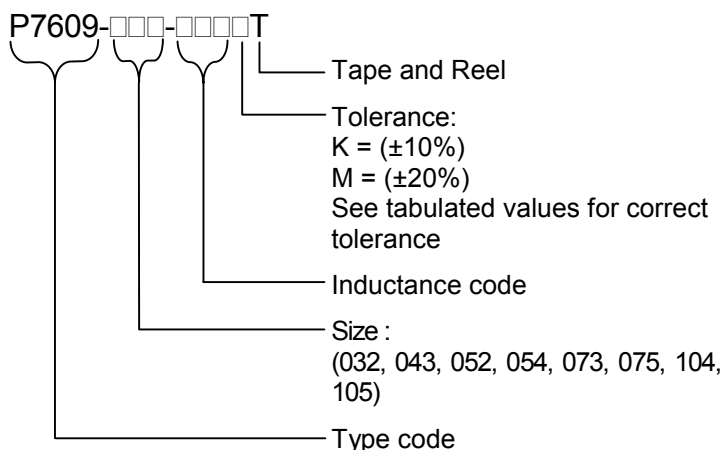
Terminals are electroplated tin (Sn) over nickel (Ni) barrier over silver (Ag) base. JESD97 category = e3.
Recommended reflow solder profile: 2 minutes @ 150-200°C, 10 seconds @ 260°C; time above 217°C
60 seconds maximum.



Dimensions shown are in millimetres.

Terminals are electroplated tin (Sn) over nickel (Ni) barrier over silver (Ag) base. JESD97 category = e3. Recommended reflow solder profile: 2 minutes @ 150-200°C, 10 seconds @ 260°C; time above 217°C 60 seconds maximum.

ORDERING CODE



ABSOLUTE MAXIMUM RATINGS

Storage temperature	-40°C to +125°C
Operating temperature	-25°C to +85°C
Soldering temperature profile peak	260°C 10s
Handle in accordance with IPC/JEDEC J-STD-033 procedure for components classified as IPC/JEDEC J-STD-020 Moisture Sensitivity Level 2.	

PROFEC
TRANSFORMING THE FUTURE



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