

POWER INDUCTOR

P7605 Family

Features

- * Lead-free (Pb-free)
- * RoHS compliant
- * High Current (Saturation to 20A)
- * Low DCR (to 9mΩ)
- * Low profile (to <3mm)
- * Surface Mount
- * Flat top for pick & place

Applications

- * DC-DC Converters
- * High Current/Low Voltage Converters
- * Notebook and handheld equipment
- * Flash memory programmers

DESCRIPTION

The P7605 family comprises high current, unshielded power inductors.

Six mechanical sizes are available, offering compact solutions for applications requiring high energy storage.

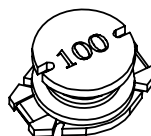
The 1608 size has a profile less than 3mm and employs a ceramic base to assist heat transfer, enabling a very high current density.

The 3308, 3316 and 3340 sizes share the same footprint, but differ in height.

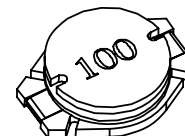
The P7605 family of components is compliant with RoHS Directive 2002/95/EC, and suitable for Pb-free and conventional placement and reflow.



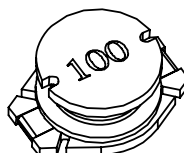
P7605-1608



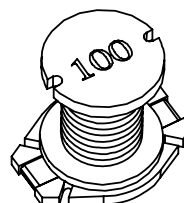
P7605-2012



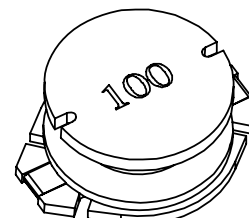
P7605-3308



P7605-3316



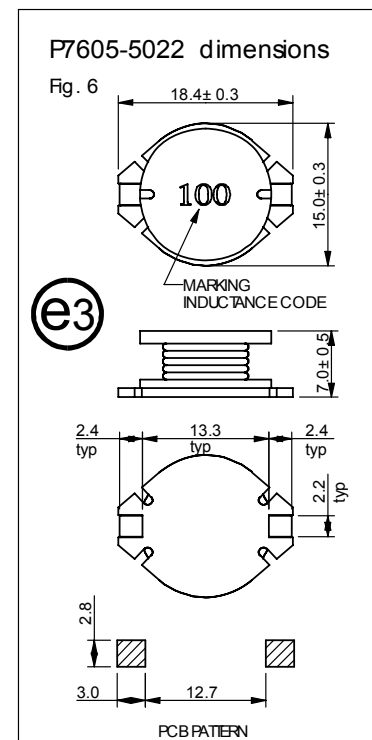
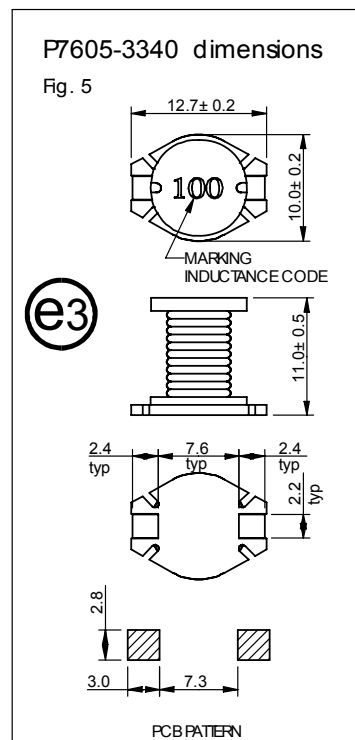
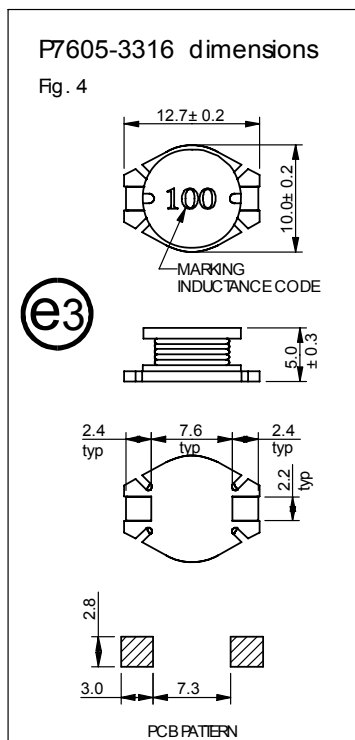
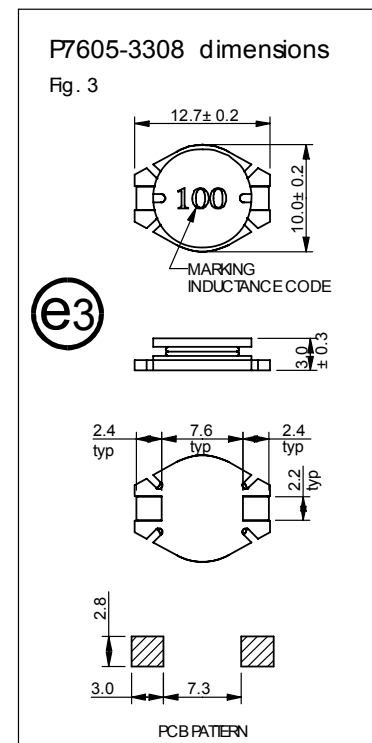
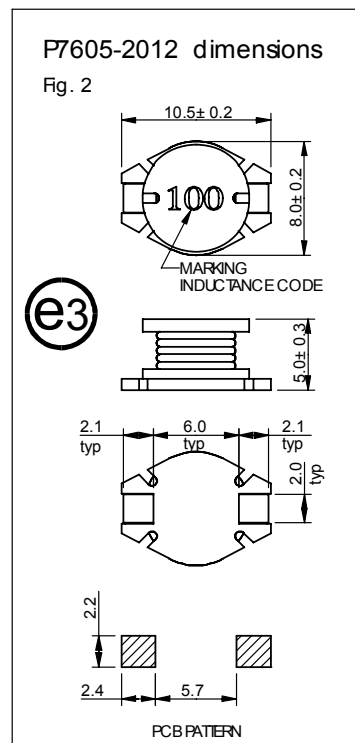
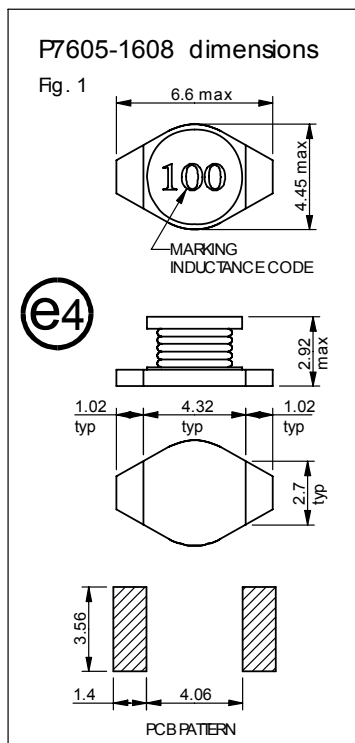
P7605-3340



P7605-5022



CONSTRUCTION



Dimensions shown are in millimetres.

Terminal plating JESD97 category = e3 or e4 as shown.

Recommended reflow solder profile: 2 minutes @ 150-200°C, 10 seconds @ 260°C; time above 217°C 60 seconds maximum.

SPECIFICATIONS

Electrical

1608 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	SRF (MHz) ⁽²⁾	Rated Current I_{RMS} (A) ⁽³⁾	I_{sat} (A) ⁽⁴⁾
P7605-1608-1R0M	1.0 $\pm$ 20%	0.05	130	2.9	2.9
P7605-1608-1R5M	1.5 $\pm$ 20%	0.05	115	2.8	2.6
P7605-1608-2R2M	2.2 $\pm$ 20%	0.07	90	2.4	2.3
P7605-1608-3R3M	3.3 $\pm$ 20%	0.08	70	2.0	2.0
P7605-1608-4R7M	4.7 $\pm$ 20%	0.09	50	1.5	1.5
P7605-1608-6R8M	6.8 $\pm$ 20%	0.13	45	1.4	1.2
P7605-1608-100M	10 $\pm$ 20%	0.16	35	1.1	1.1
P7605-1608-150M	15 $\pm$ 20%	0.23	30	1.0	0.9
P7605-1608-220M	22 $\pm$ 20%	0.37	20	0.8	0.7
P7605-1608-330M	33 $\pm$ 20%	0.51	15	0.6	0.58
P7605-1608-470M	47 $\pm$ 20%	0.64	14	0.5	0.5
P7605-1608-680M	68 $\pm$ 20%	0.86	11	0.4	0.4
P7605-1608-101M	100 $\pm$ 20%	1.27	9	0.3	0.3
P7605-1608-151M	150 $\pm$ 20%	2.00	6	0.25	0.27
P7605-1608-221M	220 $\pm$ 20%	3.11	5	0.20	0.22
P7605-1608-331M	330 $\pm$ 20%	3.80	5	0.16	0.18
P7605-1608-471M	470 $\pm$ 20%	5.06	4	0.15	0.16
P7605-1608-681M	680 $\pm$ 20%	9.20	3	0.12	0.14
P7605-1608-102M	1000 $\pm$ 20%	13.8	2	0.07	0.10

Notes

- Inductance measured at 100kHz, 100mV.
- SRF (Self resonant Frequency) is typical and for reference only.
- Rated current is the current at which the temperature rise is 15°C typical.
Note that for this 1608 size, the DC current at which saturation occurs is lower than the rated AC current.
- Saturation Current, I_{sat} , is the DC current at which the zero current inductance drops by 10% (typ).
- Operating temperature -25°C to +85°C.
- For non-standard inductance values, please contact Profec.

2012 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	SRF (MHz) ⁽²⁾	Rated Current I_{RMS} (A) ⁽³⁾	I_{sat} (A) ⁽⁴⁾
P7605-2012-3R3M	3.3 $\pm$ 20%	0.030	50	3.7	7
P7605-2012-4R7M	4.7 $\pm$ 20%	0.035	40	3.3	6
P7605-2012-6R8M	6.8 $\pm$ 20%	0.05	30	2.7	5
P7605-2012-100M	10 $\pm$ 20%	0.06	23	2.3	4
P7605-2012-150M	15 $\pm$ 20%	0.08	20	2.1	3
P7605-2012-220M	22 $\pm$ 20%	0.13	16	1.6	2.5
P7605-2012-330M	33 $\pm$ 20%	0.18	12	1.3	2.0
P7605-2012-470M	47 $\pm$ 20%	0.26	11	1.1	1.8
P7605-2012-680M	68 $\pm$ 20%	0.35	9	1.0	1.5
P7605-2012-101M	100 $\pm$ 20%	0.58	7	0.70	1.0
P7605-2012-151M	150 $\pm$ 20%	0.75	5	0.60	0.9
P7605-2012-221M	220 $\pm$ 20%	1.05	4	0.50	0.8
P7605-2012-331M	330 $\pm$ 20%	1.60	3.5	0.45	0.6

Notes

1. Inductance measured at 100kHz, 100mV.
2. SRF (Self resonant Frequency) is typical and for reference only.
3. Rated current is the current at which the temperature rise is 40°C typical.
4. Saturation Current, I_{sat} , is the DC current at which the zero current inductance drops by 10% (typ).
5. Operating temperature -25°C to +85°C.
6. For non-standard inductance values, please contact Profec.

3308 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	SRF (MHz) ⁽²⁾	Rated Current I_{RMS} (A) ⁽³⁾	I_{sat} (A) ⁽⁴⁾
P7605-3308-100M	10 $\pm$ 20%	0.11	35	2.0	2.4
P7605-3308-150M	15 $\pm$ 20%	0.15	33	1.5	2.0
P7605-3308-220M	22 $\pm$ 20%	0.23	25	1.3	1.6
P7605-3308-330M	33 $\pm$ 20%	0.30	19	1.1	1.4
P7605-3308-470M	47 $\pm$ 20%	0.39	14	0.8	1.0
P7605-3308-680M	68 $\pm$ 20%	0.66	12	0.7	0.9
P7605-3308-101M	100 $\pm$ 20%	0.84	10	0.6	0.7
P7605-3308-151M	150 $\pm$ 20%	1.2	8	0.5	0.6
P7605-3308-221M	220 $\pm$ 20%	1.9	6	0.4	0.5
P7605-3308-331M	330 $\pm$ 20%	2.7	5	0.3	0.4
P7605-3308-471M	470 $\pm$ 20%	4.0	4	0.2	0.3
P7605-3308-681M	681 $\pm$ 20%	5.3	3	0.1	0.2
P7605-3308-102M	1000 $\pm$ 20%	8.4	2.5	0.05	0.1

Notes

1. Inductance measured at 100kHz, 100mV.
2. SRF (Self resonant Frequency) is typical and for reference only.
3. Rated current is the current at which the temperature rise is 30°C typical.
4. Saturation Current, I_{sat} , is the DC current at which the zero current inductance drops by 10% (typ).
5. Operating temperature -25°C to +105°C.
6. For non-standard inductance values, please contact Profec.

3316 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	SRF (MHz) ⁽²⁾	Rated Current I_{RMS} (A) ⁽³⁾	I_{sat} (A) ⁽⁴⁾
P7605-3316-1R0M	1.0 $\pm$ 20%	0.009	150	6.8	9.0
P7605-3316-1R5M	1.5 $\pm$ 20%	0.010	100	6.4	8.0
P7605-3316-2R2M	2.2 $\pm$ 20%	0.012	85	6.1	7.0
P7605-3316-3R3M	3.3 $\pm$ 20%	0.015	60	5.4	6.4
P7605-3316-4R7M	4.7 $\pm$ 20%	0.018	45	4.8	5.4
P7605-3316-6R8M	6.8 $\pm$ 20%	0.027	35	4.4	4.6
P7605-3316-100M	10 $\pm$ 20%	0.038	25	3.9	3.8
P7605-3316-150M	15 $\pm$ 20%	0.046	20	3.1	3.0
P7605-3316-220M	22 $\pm$ 20%	0.085	18	2.7	2.6
P7605-3316-330M	33 $\pm$ 20%	0.10	14	2.1	2.0
P7605-3316-470M	47 $\pm$ 20%	0.14	11	1.8	1.6
P7605-3316-680M	68 $\pm$ 20%	0.20	10	1.5	1.4
P7605-3316-101M	100 $\pm$ 20%	0.28	7.0	1.3	1.2
P7605-3316-151M	150 $\pm$ 20%	0.40	6.5	1.0	1.0
P7605-3316-221M	220 $\pm$ 20%	0.61	5.0	0.8	0.8
P7605-3316-331M	330 $\pm$ 20%	1.02	4.0	0.6	0.6
P7605-3316-471M	470 $\pm$ 20%	1.27	3.0	0.5	0.5
P7605-3316-681M	680 $\pm$ 20%	2.02	2.5	0.4	0.4
P7605-3316102M	1000 $\pm$ 20%	3.00	2.0	0.3	0.3

Notes

1. Inductance measured at 100kHz, 100mV.
2. SRF (Self resonant Frequency) is typical and for reference only.
3. Rated current is the current at which the temperature rise is 40°C typical.
4. Saturation Current, I_{sat} , is the DC current at which the zero current inductance drops by 10% (typ).
5. Operating temperature -25°C to +105°C
6. For non-standard inductance values, please contact Profec.

3340 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	SRF (MHz) ⁽²⁾	Rated Current I_{RMS} (A) ⁽³⁾	I_{sat} (A) ⁽⁴⁾
P7605-3340-100M	10 $\pm$ 20%	0.040	23	3.5	7.0
P7605-3340-150M	15 $\pm$ 20%	0.050	14	3.2	5.8
P7605-3340-220M	22 $\pm$ 20%	0.066	8.5	2.9	4.8
P7605-3340-330M	33 $\pm$ 20%	0.080	7.0	2.3	3.8
P7605-3340-470M	47 $\pm$ 20%	0.11	6.5	2.1	3.4
P7605-3340-680M	68 $\pm$ 20%	0.17	4.5	1.9	2.7
P7605-3340-101M	100 $\pm$ 20%	0.22	4.0	1.55	2.2
P7605-3340-151M	150 $\pm$ 20%	0.34	3.0	1.35	1.9
P7605-3340-221M	220 $\pm$ 20%	0.44	2.5	1.00	1.5
P7605-3340-331M	330 $\pm$ 20%	0.70	2.3	0.90	1.3
P7605-3340-471M	470 $\pm$ 20%	0.95	2.0	0.75	1.0
P7605-3340-681M	681 $\pm$ 20%	1.2	1.5	0.55	0.9
P7605-3340-102M	1000 $\pm$ 20%	2.0	1.3	0.50	0.7

Notes

7. Inductance measured at 100kHz, 100mV.
8. SRF (Self resonant Frequency) is typical and for reference only.
9. Rated current is the current at which the temperature rise is 40°C typical.
10. Saturation Current, I_{sat} , is the DC current at which the zero current inductance drops by 10% (typ).
11. Operating temperature -25°C to +105°C.
12. For non-standard inductance values, please contact Profec.

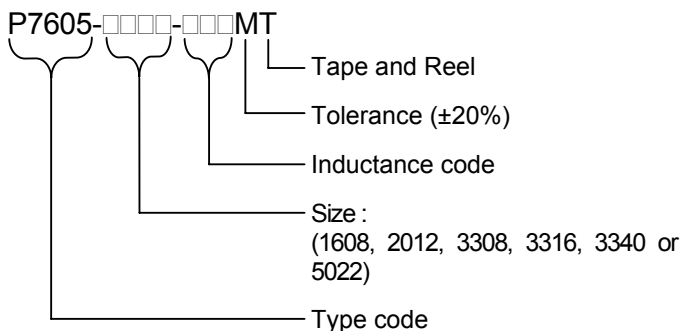
5022 size

Part Number	Inductance (μH) ⁽¹⁾	DCR (Ω) Max	SRF (MHz) ⁽²⁾	Rated Current I_{RMS} (A) ⁽³⁾	I_{sat} (A) ⁽⁴⁾
P7605-5022-1R0M	1.0 $\pm$ 20%	0.009	140	8.6	20
P7605-5022-1R5M	1.5 $\pm$ 20%	0.012	110	7.5	18
P7605-5022-2R2M	2.2 $\pm$ 20%	0.014	75	7.1	16
P7605-5022-3R3M	3.3 $\pm$ 20%	0.018	70	6.2	14
P7605-5022-5R6M	5.6 $\pm$ 20%	0.020	45	5.3	12
P7605-5022-100M	10 $\pm$ 20%	0.031	21	4.3	10
P7605-5022-150M	15 $\pm$ 20%	0.036	16	4.0	8.0
P7605-5022-220M	22 $\pm$ 20%	0.047	13	3.5	7.0
P7605-5022-330M	33 $\pm$ 20%	0.066	11	3.0	5.5
P7605-5022-470M	47 $\pm$ 20%	0.086	9.0	2.6	4.5
P7605-5022-680M	68 $\pm$ 20%	0.13	6.5	2.3	3.5
P7605-5022-101M	100 $\pm$ 20%	0.19	5.7	1.8	3.0
P7605-5022-151M	150 $\pm$ 20%	0.25	4.5	1.5	2.6
P7605-5022-221M	220 $\pm$ 20%	0.38	3.7	1.2	2.4
P7605-5022-331M	330 $\pm$ 20%	0.56	3.0	1.0	1.9
P7605-5022-471M	470 $\pm$ 20%	0.85	2.7	0.82	1.4
P7605-5022-681M	680 $\pm$ 20%	1.1	2.2	0.72	1.2
P7605-5022-102M	1000 $\pm$ 20%	1.8	2.0	0.56	1.0

Notes

1. Inductance measured at 100kHz, 100mV.
2. SRF (Self resonant Frequency) is typical and for reference only.
3. Rated current is the current at which the temperature rise is 40°C typical.
4. Saturation Current, I_{sat} , is the DC current at which the zero current inductance drops by 10% (typ).
5. Operating temperature -25°C to +105°C.
6. For non-standard inductance values, please contact Profec.

ORDERING CODE



ABSOLUTE MAXIMUM RATINGS

Storage temperature	-40°C to +125°C
Operating temperature	-25°C to +105°C (+85°C 1608 and 2012)
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.	