SMD Power Inductors / PID TYPE

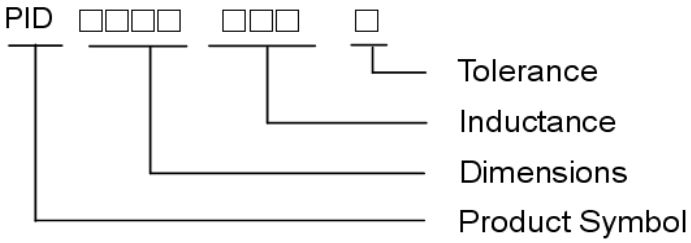
.Features:

1.Magnetic Shielded surface mount inductor with high current rating.
2.Low resistance to keep power loss minimum.

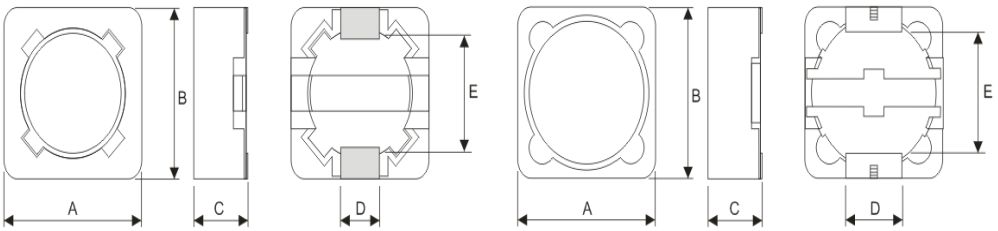
.Applications:

Excellent for power line DC-DC conversion applications used in hard disk, notebook computers and other electronic equipment.

.Product Identification :

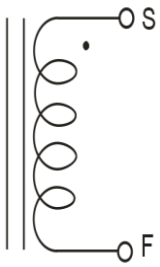


.Shape and Dimension



PID0703/0704 PID1204/1205/1207

.Schematic

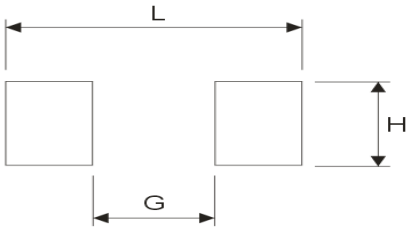


Dimensions in mm

TYPE	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
PID0703	7.3±0.3	7.3±0.3	3.5 Max	1.8±0.2	5.0±0.2
PID0704	7.3±0.3	7.3±0.3	4.5 Max	1.8±0.2	5.0±0.2
PID1204	12.0±0.3	12.0±0.3	5.0 Max	5.0±0.2	7.6±0.2
PID1205	12.0±0.3	12.0±0.3	6.0 Max	5.0±0.2	7.6±0.2
PID1207	12.0±0.3	12.0±0.3	8.0 Max	5.0±0.2	7.6±0.2
PID1209	12.0±0.3	12.0±0.3	10.0 Max	5.0±0.2	7.6±0.2

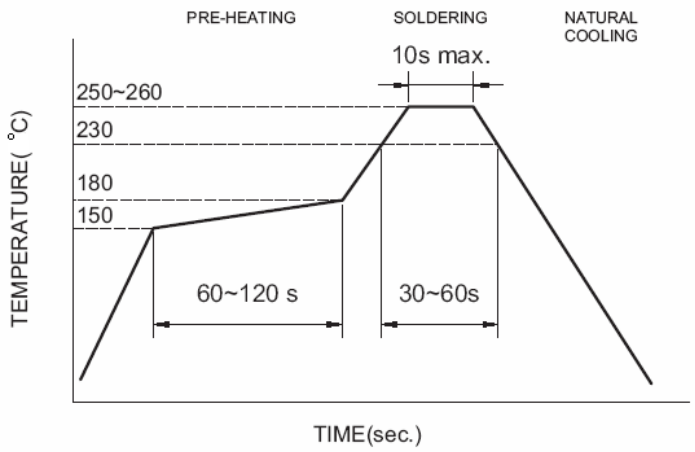
SMD Power Inductors / PID TYPE

.Land Patterns for Reflow Soldering



TYPE	L(mm)	G(mm)	H(mm)
PID0703	7.80	4.80	2.20
PID0704	7.80	4.80	2.20
PID1204	12.60	7.00	5.40
PID1205	12.60	7.00	5.40
PID1207	12.60	7.00	5.40
PID1209	12.80	7.00	5.40

.Recommended Reflow Soldering Conditions (For Lead Free)



SMD Power Inductors / PID TYPE

. Electrical Characteristics（PID0703 TYPE）

Part No.	Inductance （μH）	Tolerane (±%)	DCR (mΩ) Max	IDC （A） Max	Test Frequency
PID0703-1R0□	1	20%	16	7.97	100KHz/0.25V
PID0703-1R5□	1.5	20%	23	5.50	100KHz/0.25V
PID0703-2R2□	2.2	20%	27	4.50	100KHz/0.25V
PID0703-3R3□	3.3	20%	31	4.00	100KHz/0.25V
PID0703-3R9□	3.9	20%	41	3.80	100KHz/0.25V
PID0703-4R7□	4.7	20%	48	3.50	100KHz/0.25V
PID0703-5R6□	5.6	20%	56	3.00	100KHz/0.25V
PID0703-6R8□	6.8	20%	60	2.10	100KHz/0.25V
PID0703-100□	10	20%	72	1.68	100KHz/0.25V
PID0703-120□	12	20%	98	1.52	100KHz/0.25V
PID0703-150□	15	20%	130	1.33	100KHz/0.25V
PID0703-180□	18	20%	140	1.20	100KHz/0.25V
PID0703-220□	22	20%	190	1.07	100KHz/0.25V
PID0703-270□	27	20%	210	0.96	100KHz/0.25V
PID0703-330□	33	20%	240	0.91	100KHz/0.25V
PID0703-390□	39	20%	320	0.77	100KHz/0.25V
PID0703-470□	47	20%	360	0.76	100KHz/0.25V
PID0703-560□	56	20%	470	0.68	100KHz/0.25V
PID0703-680□	68	20%	520	0.61	100KHz/0.25V
PID0703-820□	82	20%	690	0.57	100KHz/0.25V
PID0703-101□	100	20%	790	0.50	100KHz/0.25V
PID0703-121□	120	20%	890	0.49	1KHZ/0.3V
PID0703-151□	150	20%	1270	0.43	1KHZ/0.3V
PID0703-181□	180	20%	1450	0.39	1KHZ/0.3V
PID0703-221□	220	20%	1650	0.35	1KHZ/0.3V
PID0703-271□	270	20%	2310	0.32	1KHZ/0.3V
PID0703-331□	330	20%	2620	0.28	1KHZ/0.3V
PID0703-391□	390	20%	2940	0.26	1KHZ/0.3V
PID0703-471□	470	20%	4180	0.24	1KHZ/0.3V
PID0703-561□	560	20%	4670	0.22	1KHZ/0.3V
PID0703-681□	680	20%	5730	0.19	1KHZ/0.3V
PID0703-821□	820	20%	6540	0.18	1KHZ/0.3V
PID0703-102□	1000	20%	9440	0.16	1KHZ/0.3V

.Electrical Characteristics（PID0704 TYPE）

Part No.	Inductance （μH）	Tolerane (±%)	DCR (mΩ) Max	IDC （A） Max	Test Frequency
PID0704-1R0□	1.0	20%	15	9.000	100KHz/0.25V
PID0704-1R5□	1.5	20%	18	7.000	100KHz/0.25V
PID0704-2R2□	2.2	20%	28	5.100	100KHz/0.25V
PID0704-3R3□	3.3	20%	32	4.800	100KHz/0.25V
PID0704-3R9□	3.9	20%	35	4.400	100KHz/0.25V
PID0704-4R7□	4.7	20%	38	4.000	100KHz/0.25V
PID0704-5R6□	5.6	20%	40	3.500	100KHz/0.25V
PID0704-6R8□	6.8	20%	45	3.000	100KHz/0.25V
PID0704-100□	10	20%	49	1.840	100KHz/0.25V
PID0704-120□	12	20%	58	1.710	100KHz/0.25V
PID0704-150□	15	20%	81	1.470	100KHz/0.25V
PID0704-180□	18	20%	91	1.310	100KHz/0.25V
PID0704-220□	22	20%	110	1.230	100KHz/0.25V
PID0704-270□	27	20%	150	1.120	100KHz/0.25V
PID0704-330□	33	20%	170	0.960	100KHz/0.25V
PID0704-390□	39	20%	230	0.910	100KHz/0.25V
PID0704-470□	47	20%	260	0.880	100KHz/0.25V
PID0704-560□	56	20%	350	0.750	100KHz/0.25V
PID0704-680□	68	20%	380	0.690	100KHz/0.25V
PID0704-820□	82	20%	430	0.610	100KHz/0.25V
PID0704-101□	100	20%	610	0.600	100KHz/0.25V
PID0704-121□	120	20%	660	0.520	100KHz/0.25V
PID0704-151□	150	20%	880	0.460	100KHz/0.25V
PID0704-181□	180	20%	980	0.420	100KHz/0.25V
PID0704-221□	220	20%	1170	0.360	100KHz/0.25V
PID0704-271□	270	20%	1640	0.340	100KHz/0.25V
PID0704-331□	330	20%	1860	0.320	100KHz/0.25V
PID0704-391□	390	20%	2850	0.290	100KHz/0.25V
PID0704-471□	470	20%	3010	0.260	100KHz/0.25V
PID0704-561□	560	20%	3620	0.230	100KHz/0.25V
PID0704-681□	680	20%	4630	0.220	100KHz/0.25V
PID0704-821□	820	20%	5200	0.200	100KHz/0.25V
PID0704-102□	1000	20%	6000	0.190	100KHz/0.25V

.Electrical Characteristics（PID1204TYPE）

Part No.	Inductance （μH）	Tolerane (±%)	DCR (mΩ) Max	IDC （A） Max	Test Frequency
PID1204-2R2□	2.2	20%	15	3.55	100KHz/0.1V
PID1204-2R7□	2.7	20%	16	3.50	100KHz/0.1V
PID1204-3R3□	3.3	20%	15	9.00	100KHz/0.1V
PID1204-3R9□	3.9	20%	15	6.50	100KHz/0.1V
PID1204-4R7□	4.7	20%	18	5.70	100KHz/0.1V
PID1204-6R8□	6.8	20%	23	4.90	100KHz/0.1V
PID1204-8R2□	8.2	20%	26	4.60	100KHz/0.1V
PID1204-100□	10.0	20%	28	4.50	100KHz/0.1V
PID1204-120□	12.0	20%	38	4.00	100KHz/0.1V
PID1204-150□	15.0	20%	50	3.20	100KHz/0.1V
PID1204-180□	18.0	20%	57	3.10	100KHz/0.1V
PID1204-220□	22.0	20%	66	2.90	100KHz/0.1V
PID1204-270□	27.0	20%	80	2.80	100KHz/0.1V
PID1204-330□	33.0	20%	97	2.70	100KHz/0.1V
PID1204-390□	39.0	20%	132	2.10	100KHz/0.1V
PID1204-470□	47.0	20%	140	1.90	100KHz/0.1V
PID1204-560□	56.0	20%	190	1.80	100KHz/0.1V
PID1204-680□	68.0	20%	220	1.50	100KHz/0.1V
PID1204-820□	82.0	20%	260	1.30	100KHz/0.1V
PID1204-101□	100.0	20%	308	1.20	100KHz/0.1V
PID1204-121□	120.0	20%	380	1.10	100KHz/0.1V
PID1204-151□	150.0	20%	530	0.95	100KHz/0.1V

.Electrical Characteristics（PID1205TYPE）

Part No.	Inductance （μH）	Tolerane (±%)	DCR (mΩ) Max	IDC （A） Max	Test Frequency
PID1204-181□	180.0	20%	620	0.85	100KHz/0.1V
PID1204-221□	220.0	20%	700	0.80	100KHz/0.1V
PID1204-271□	270.0	20%	870	0.60	100KHz/0.1V
PID1204-331□	330.0	20%	990	0.50	100KHz/0.1V
PID1205-1R3□	1.3	20	12	8.00	100KHz/0.1V
PID1205-2R1□	2.1	20	14	7.00	100KHz/0.1V
PID1205-3R1□	3.1	20	17	6.00	100KHz/0.1V
PID1205-3R3□	3.3	20	17	6.00	100KHz/0.1V
PID1205-4R4□	4.4	20	20	5.00	100KHz/0.1V
PID1205-5R6□	5.6	20	19	6.00	100KHz/0.1V
PID1205-5R8□	5.8	20	21	4.40	100KHz/0.1V
PID1205-7R5□	7.5	20	24	4.20	100KHz/0.1V
PID1205-100□	10.0	20	22.7	7.17	100KHz/0.1V
PID1205-120□	12.0	20	27	3.50	100KHz/0.1V
PID1205-150□	15.0	20	47	3.30	100KHz/0.1V
PID1205-180□	18.0	20	34	3.00	100KHz/0.1V
PID1205-220□	22.0	20	36	2.80	100KHz/0.1V
PID1205-270□	27.0	20	51	2.30	100KHz/0.1V
PID1205-330□	33.0	20	57	2.10	100KHz/0.1V
PID1205-390□	39.0	20	68	2.00	100KHz/0.1V
PID1205-470□	47.0	20	75	1.80	100KHz/0.1V
PID1205-560□	56.0	20	110	1.70	100KHz/0.1V
PID1205-680□	68.0	20	120	1.50	100KHz/0.1V
PID1205-820□	82.0	20	140	1.40	100KHz/0.1V
PID1205-101□	100.0	20	160	1.30	100KHz/0.1V
PID1205-121□	120.0	20	232	1.20	100KHz/0.1V
PID1205-151□	150.0	20	230	1.00	100KHz/0.1V
PID1205-181□	180.0	20	290	0.90	100KHz/0.1V
PID1205-221□	220.0	20	400	0.80	100KHz/0.1V
PID1205-271□	270.0	20	460	0.75	100KHz/0.1V
PID1205-331□	330.0	20	510	0.68	100KHz/0.1V
PID1205-391□	390.0	20	690	0.65	100KHz/0.1V
PID1205-471□	470.0	20	770	0.58	100KHz/0.1V
PID1205-561□	560.0	20	860	0.54	100KHz/0.1V
PID1205-681□	680.0	20	1200	0.48	100KHz/0.1V
PID1205-821□	820.0	20	1340	0.43	100KHz/0.1V
PID1205-102□	1000.0	20	1530	0.40	100KHz/0.1V
PID1205-152□	1500.0	20	3210	0.36	100KHz/0.1V

.Electrical Characteristics（PID1207 TYPE）

Part No.	Inductance （μH）	Tolerane (±%)	DCR (mΩ) Max	IDC （A） Max	Test Frequency
PID1207-1R2□	1.2	30	7.0	9.80	100KHz/0.1V
PID1207-2R2□	2.2	20	11.5	9.00	100KHz/0.1V
PID1207-2R4□	2.4	30	11.5	8.00	100KHz/0.1V
PID1207-3R5□	3.5	20	13.5	7.50	100KHz/0.1V
PID1207-4R7□	4.7	20	15.8	6.80	100KHz/0.1V
PID1207-6R8□	6.8	20	18.0	6.60	100KHz/0.1V
PID1207-7R6□	7.6	30	20.0	5.90	100KHz/0.1V
PID1207-8R2□	8.2	20	20.0	5.90	1KHz/0.1V
PID1207-100□	10.0	20	21.6	5.40	1KHz/0.1V
PID1207-120□	12.0	20	24.3	4.90	1KHz/0.1V
PID1207-150□	15.0	20	27.0	4.50	1KHz/0.1V
PID1207-180□	18.0	20	39.2	3.90	1KHz/0.1V
PID1207-220□	22.0	20	43.2	3.60	1KHz/0.1V
PID1207-270□	27.0	20	45.9	3.40	1KHz/0.1V
PID1207-330□	33.0	20	64.8	3.00	1KHz/0.1V
PID1207-330□-01	33.0	20	60.0	3.23	1KHz/0.1V
PID1207-390□	39.0	20	72.9	2.75	1KHz/0.1V
PID1207-470□	47.0	20	100.0	2.50	1KHz/0.1V
PID1207-560□	56.0	20	110.0	2.35	1KHz/0.1V
PID1207-680□	68.0	20	140.0	2.10	1KHz/0.1V
PID1207-820□	82.0	20	160.0	1.95	1KHz/0.1V
PID1207-101□	100.0	20	220.0	1.70	1KHz/0.1V
PID1207-121□	120.0	10	230.0	1.60	1KHz/0.1V
PID1207-151□	150.0	20	280.0	1.42	1KHz/0.1V
PID1207-151□-01	150.0	20	280.0	1.50	1KHz/0.1V
PID1207-181□	180.0	20	350.0	1.30	1KHz/0.1V
PID1207-221□	220.0	20	390.0	1.16	1KHz/0.1V
PID1207-271□	270.0	20	560.0	1.06	1KHz/0.1V
PID1207-331□	330.0	20	640.0	0.95	1KHz/0.1V
PID1207-391□	390.0	20	700.0	0.88	1KHz/0.1V
PID1207-471□	470.0	20	980.0	0.79	1KHz/0.1V
PID1207-561□	560.0	20	1070.0	0.73	1KHz/0.1V
PID1207-681□	680.0	20	1460.0	0.67	1KHz/0.1V
PID1207-821□	820.0	20	1640.0	0.60	1KHz/0.1V
PID1207-102□	1000.0	20	1820.0	0.55	1KHz/0.1V
PID1207-152□	1500.0	20	2350.0	0.36	1KHz/0.1V
PID1207-162□	1600.0	20	2276.0	0.60	1KHz/0.1V
PID1207-182□	1800.0	20	3200.0	0.50	1KHz/0.1V
PID1207-332□	3300.0	10	4200.0	0.40	1KHz/0.1V

.Electrical Characteristics（PID1209 TYPE）

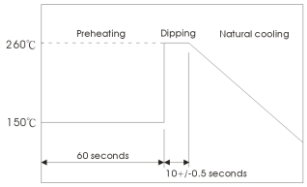
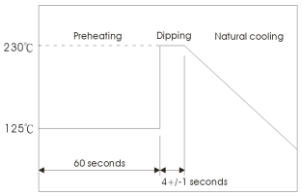
Part No.	Inductance （μH）	Tolerane (±%)	DCR (mΩ) Max	IDC （A） Max	Test Frequency
PID1209-150□	15	20	26	8.00	1KHz/0.25V
PID1209-220□	22	20	35	5.50	1KHz/0.25V
PID1209-270□	27	20	41.5	6.00	1KHz/0.25V
PID1209-330□	33	20	51	4.20	1KHz/0.25V
PID1209-470□	47	20	110	3.20	1KHz/0.25V
PID1209-470□-01	47	20	62	5.00	1KHz/0.25V
PID1209-101□	100	20	200	1.95	1KHz/0.25V
PID1209-151□	150	20	280	1.42	1KHz/0.25V
PID1209-221□	220	20	290	1.48	1KHz/0.25V
PID1209-401□	400	20	610	1.5	1KHz/0.25V
PID1209-681□	680	20	930	1.25	1KHz/0.25V
PID1209-821□	820	20	950	1.00	1KHz/0.25V
PID1209-102□	1000	20	1000	1.00	1KHz/0.25V
PID1209-162□	1600	20	2405	0.65	1KHz/0.25V
PID1209-202□	2000	20	2900	0.65	1KHz/0.25V
PID1209-222□	2200	20	3150	0.58	1KHz/0.25V

NOTE

1. Inductance is Measured by LCR-Meter 4284A(HP) or equivalent.
2. DC Resistance is Measured by HP4338B Milliohms meter or equivalent.
3. Rated current is measured by LCR-meter 3260B(WK) & DC Bias 3265B(WK).
4. Rated current:Value obtained when current flows and the temperautre has risen to 40℃ or when DC current flow sand the initial value of inductance has fallen by 35%, whichever is smaller.
5. Operating temperature -55℃ ~ +125℃.
6. All test data is referenced to 25℃ ambient.
7. □Tolerance：K=10％；M=20％

SMD Power Inductors / PID TYPE

. Reliability and Test Conditions(可靠性測試條件)

ITEM	Performance	Test Condition
Operating Temperature	-55 ~ +125℃	
Storage temperature	-55 ~ +125℃	
Rated Current	Refer to standard electrical characteristics list.	
Temperature Rise Test	40℃ max.(△t)	
Electrical Performance Test		
Solder Heat Resistance	Appearance:No significant abnormality. Inductance change:Within ± 20%.	Preheat:150℃,60sec. Solder: H63A Solder temperature:260±5℃ Flux for lead free: rosin Dip time:10±0.5sec. 
Solderability Test	More than 90% of the terminal electrode should be covered with solder. .	Preheat:125±25℃,60sec. Solder: H63A Solder temperature:230±5℃ Flux for lead free: rosin Dip time:4±1sec. 
High Temperature Resistance Test	Appearance: no damage. Inductance: within±20%of initial value. No disconnection or short circuit.	Temperature:85±2℃. Applied current: rated current. Duration: 500 hrs.
Humidity Resistance Test	Appearance: no damage. Inductance: within±20%of initial value. No disconnection or short circuit.	Temperature:40±2℃. Applied current: rated current. Duration: 500 hrs. Humidity: 90~95%

SMD Power Inductors / PID TYPE

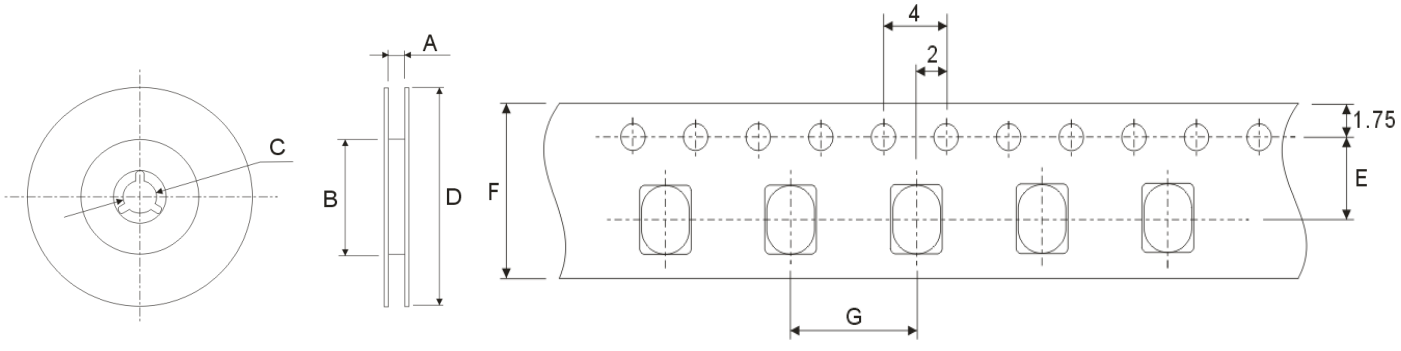
. Reliability and Test Conditions(可靠性測試條件)

ITEM	Performance	Test Condition
Thermal shock	Appearance: no damage. Inductance: within±20%of initial value. No disconnection or short circuit.	Condition for 1 cycle Step1:-25±2℃，30±3 min. Step2:Room temperature within 15 min. Step3:+85±5℃，30±3 min. Step4: Room temperature within 15 min. Number of cycles: 50

Phase	Temperature(℃)	Time(min)
1	-25±2℃	30±3
2	Room Temp.	15
3	+85±2℃	30±3
4	Room Temp.	15

SMD Power Inductors / PID TYPE

.Packing Specifications



TYPE	Packaging Quantity			Tape and Reel Dimension						
	Pcs / Reel	Inner box	Carton	A	B	C	D	E	F	G
PID0703	1000	3000	6000	16.5	100	13±0.5	330	7.5	16	12
PID0704	1000	3000	6000	16.5	100	13±0.5	330	7.5	16	12
PID1204	500	1000	2000	24.5	100	13±0.5	330	11.5	24	16
PID1205	500	1000	2000	24.5	100	13±0.5	330	11.5	24	16
PID1207	500	1500	3000	24.5	100	13±0.5	330	11.5	24	16
PID1209	500	1500	3000	24.5	100	13±0.5	330	11.5	24	16