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On-Board Type Hi-Current Power Inductors



Ultra High Current Power Inductors SMPI Series

SMPI Series (Patent obtained.Patent No.:M262820,Taiwan)

SMD Type Ultra High Current Power Inductor.



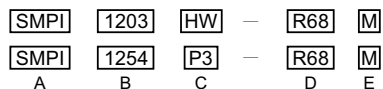
■ Features

1. Lowest height in this package footprint.
2. Shielded construction.
3. Lowest DCR/ μ H, in this package size.
4. Handles high transient current spikes without saturation.
5. Ultra low buzz noise, due to composite construction.
6. Frequency up to 5MHz.
7. The products contain no lead and also support lead-free soldering.

■ Applications

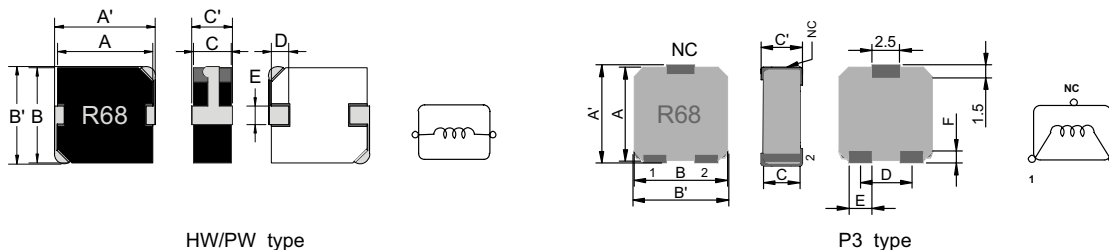
Excellent for power line DC-DC conversion applications used in power switching, personal computers and other handheld electronic equipment.

■ Lead Free Part Numbering



A : Series
 B : Dimension A x C
 C : Type
 D : Inductance R68=0.68uH
 E : Inductance Tolerance M=±20%

■ Dimensions



Size									
Series	A(mm)	A'(mm)	B(mm)	B'(mm)	C(mm)	C'(mm)	D(mm)	E(mm)	F(mm)
SMPI 0603	6.86±0.5	7.8 max.	6.47±0.5	7.0 max.	3.0 max.	3.2 max.	1.6±0.5	2.1±0.5	--
SMPI 0604	6.86±0.5	7.8 max.	6.47±0.5	7.0 max.	4.0 max.	4.2 max.	1.6±0.5	2.1±0.5	--
SMPI 1004	10.7±0.5	11.8 max.	10.0±0.5	10.5 max.	4.0 max.	4.2 max.	2.2±0.5	2.9±0.5	--
SMPI 1203	12.7±0.3	13.9 max.	12.7±0.3	13.5 max.	3.5 max.	3.7 max.	2.5±0.5	3.0±0.5	--
SMPI 1205	12.7±0.3	13.9 max.	12.7±0.3	13.5 max.	5.0 max.	5.2 max.	2.5±0.5	3.0±0.5	--
SMPI 1254	12.9±0.3	13.9 max.	12.9±0.3	13.9 max.	5.3 max.	5.4 max.	7.6±0.3	2.0±0.3	2.0±0.3

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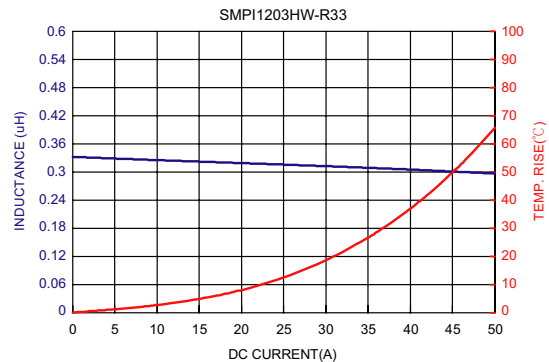
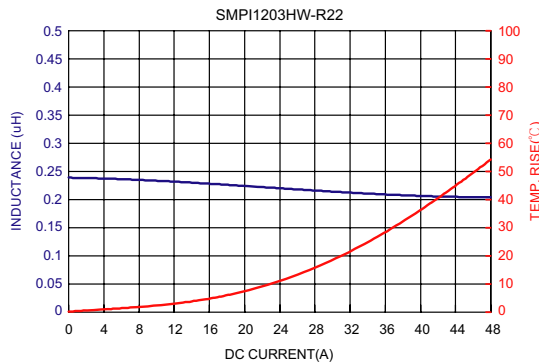
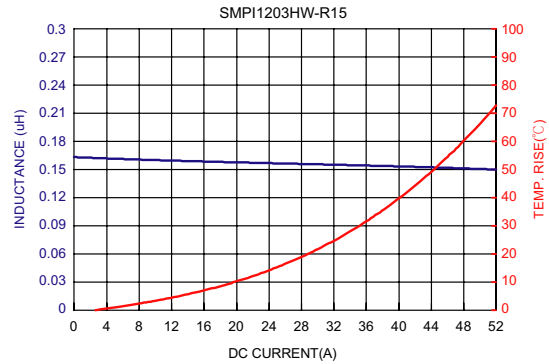
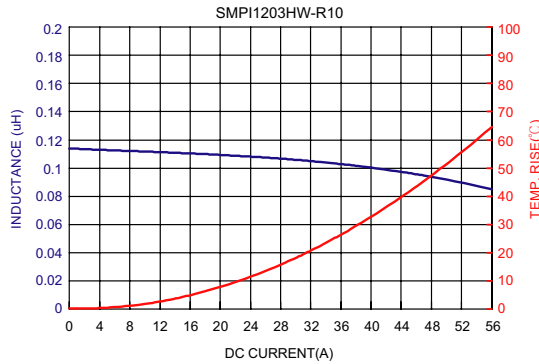
■ **SMPI 1203/1205 Series**

Part Number	Thickness (mm) max.	Inductance L0 (uH) $\pm 20\%$ @ 0 Adc	I rms (A)	I sat (A)	DCR (m Ω) max.
SMPI 1203HW-R10M	3.5	0.10	43	56	0.96
SMPI 1203HW-R15M	3.5	0.15	41	50	1.2
SMPI 1203HW-R22M	3.5	0.22	38.5	50	1.3
SMPI 1203HW-R33M	3.5	0.33	36.5	50	1.5
SMPI 1203HW-R47M	3.5	0.47	32	44	2.0
SMPI 1203HW-R60M	3.5	0.60	29	42	2.5
SMPI 1203HW-R68M	3.5	0.68	28	40	2.5
SMPI 1203HW-R82M	3.5	0.82	25	38	3.0
SMPI 1203HW-1R0M	3.5	1.00	24	36	3.5
SMPI 1203HW-1R5M	3.5	1.50	19	28	5.5
SMPI 1203HW-1R8M	3.5	1.80	16.5	24	7.0
SMPI 1203HW-2R2M	3.5	2.20	16	20	8.0
SMPI 1203HW-3R3M	3.5	3.30	12	18	12
SMPI 1203HW-4R7M	3.5	4.70	10	16	15
SMPI 1203HW-5R6M	3.5	5.60	10	14	18
SMPI 1203HW-6R8M	3.5	6.80	9.0	13	22
SMPI 1205HW-8R2M	5.0	8.20	8.5	12	28
SMPI 1205HW-100M	5.0	10.0	7.0	9.5	34

Note:

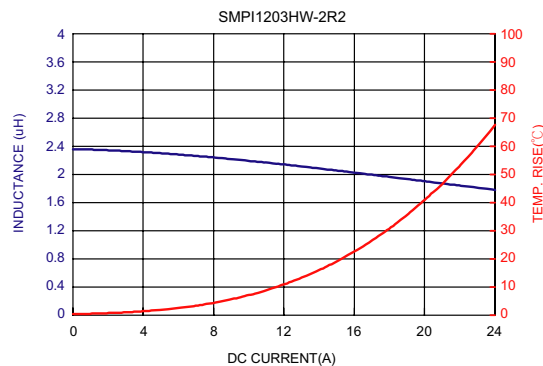
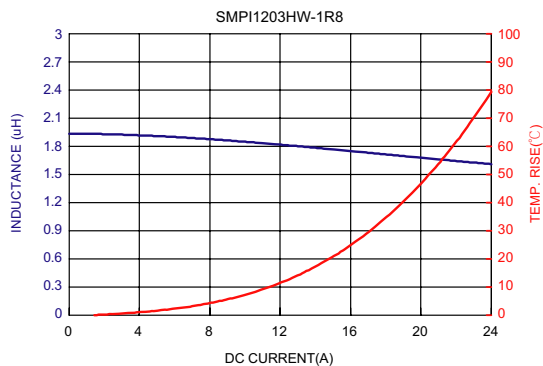
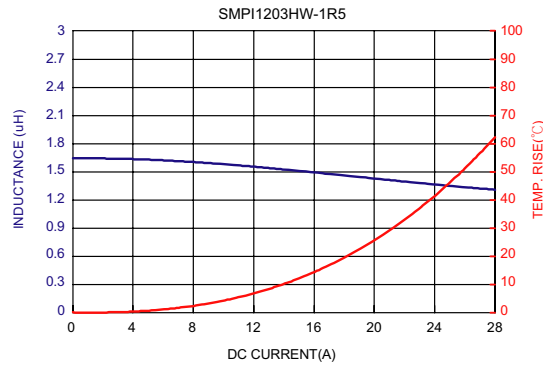
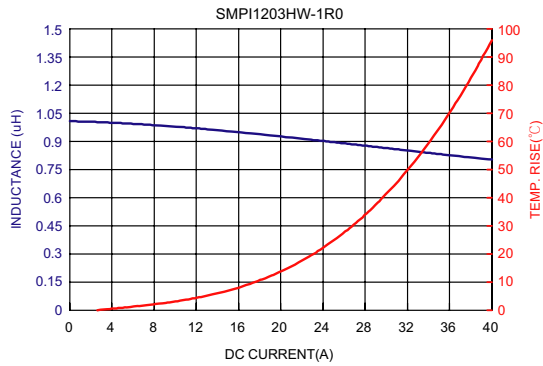
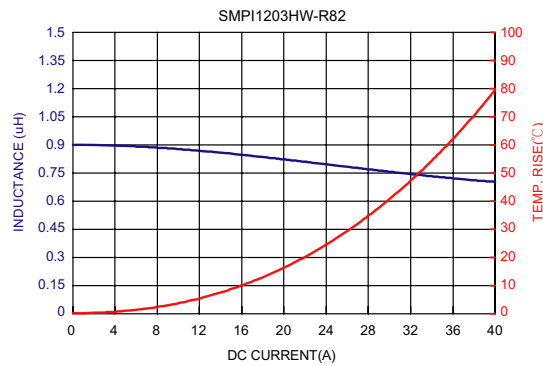
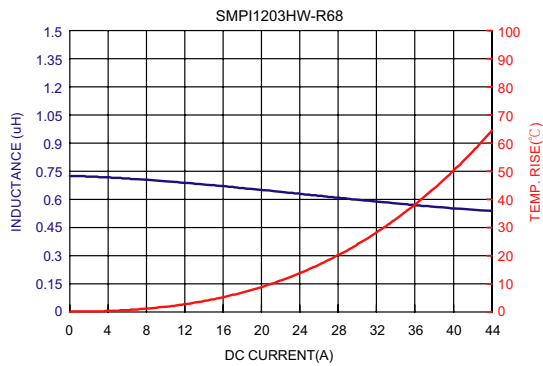
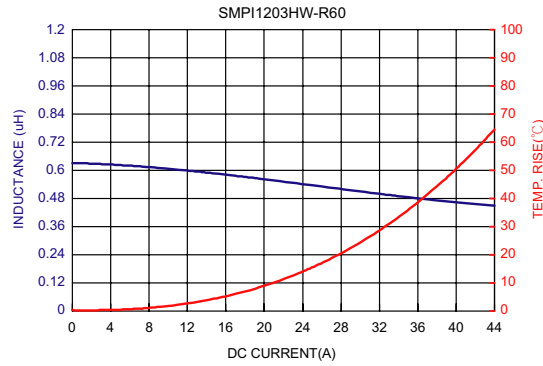
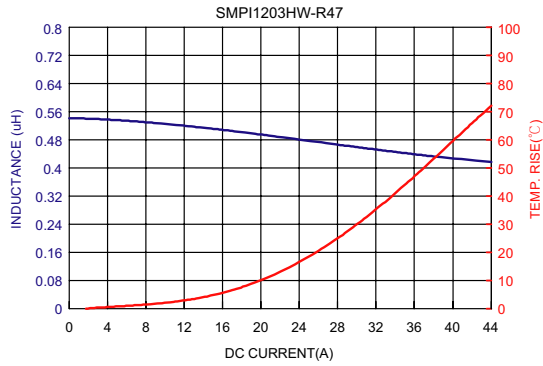
- Test frequency : 100KHz / 0.25Vdc
- Testing Instrument : L:HP4284A, CH11025, CH3302, CH1320, CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER.
- Heat Rated Current (I rms) will cause the coil temperature rise approximately $\Delta T=40^{\circ}\text{C}$ without core loss.
- Saturation Current (I sat) will cause L0 to drop approximately 20%
- The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

■ Typical Performance Curves



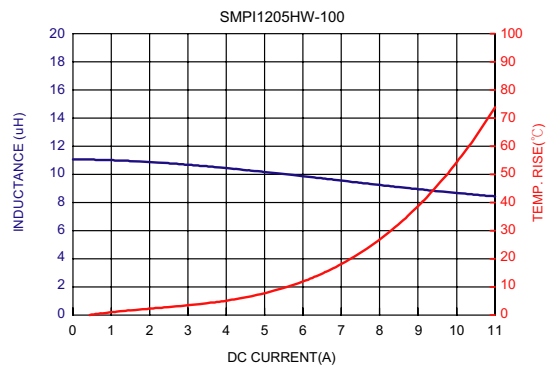
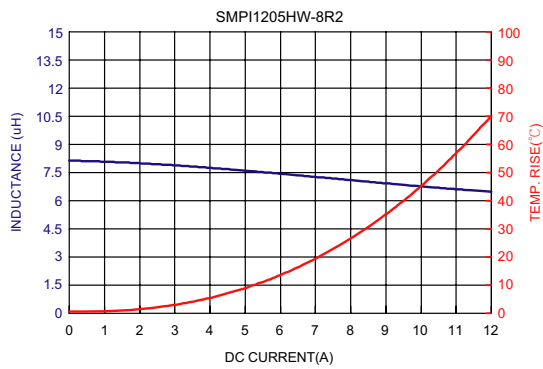
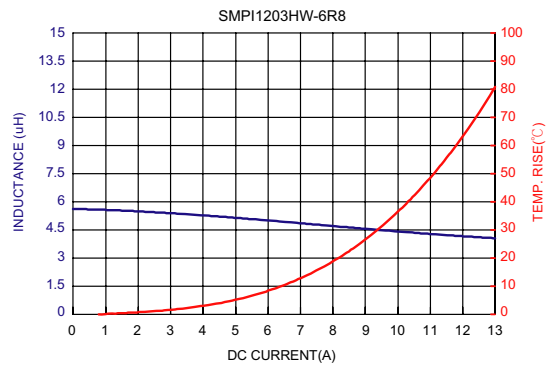
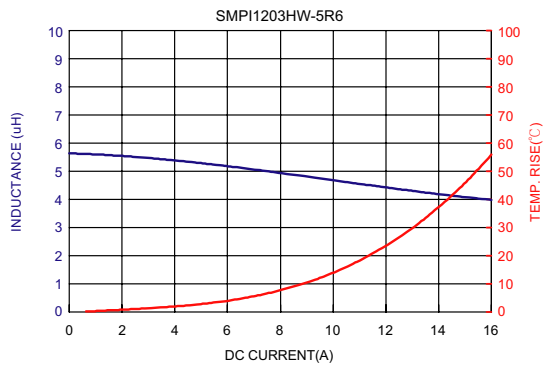
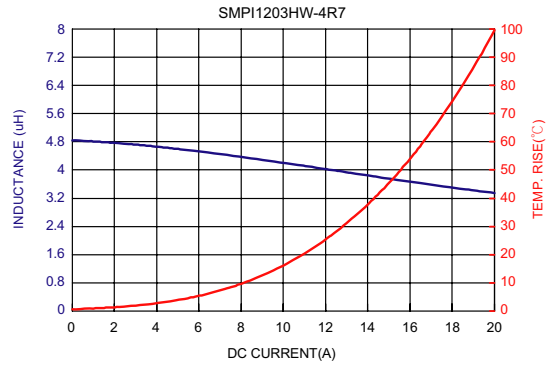
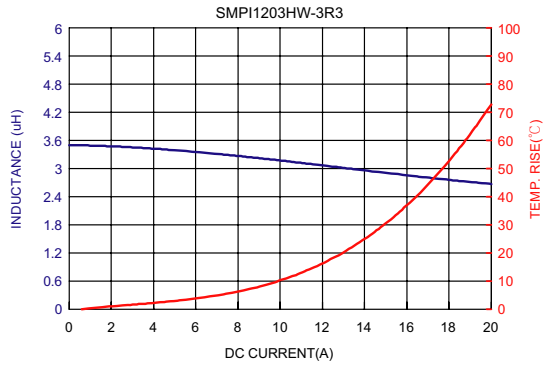
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■ **SMPI 1205PW Series**

Part Number	Thickness (mm) max.	Inductance L0 (uH) ±20% @ 0 Adc	I rms (A)	I sat (A)	DCR (mΩ) max.
SMPI 1205PW-R36M	5.0	0.36	41	75	1.1
SMPI 1205PW-R47M	5.0	0.47	38	65	1.3
SMPI 1205PW-R50M	5.0	0.50	36	55	1.5
SMPI 1205PW-R56M	5.0	0.56	36	55	1.5
SMPI 1205PW-R68M	5.0	0.68	34	54	1.7
SMPI 1205PW-1R0M	5.0	1.00	29	50	2.5
SMPI 1205PW-1R5M	5.0	1.50	23	48	4.1

Note:

1. Test frequency : 100KHz / 0.25Vdc
2. Testing Instrument : L: HP4284A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER.
3. Heat Rated Current (I rms) will cause the coil temperature rise approximately $\Delta T=40^{\circ}\text{C}$ without core loss.
4. Saturation Current (I sat) will cause L0 to drop approximately 20%.
5. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

■ Typical Performance Curves

