On-Board Type Hi-Current Power Inductors

TAI-TECH

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/ μH, 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.

● 特徵

1. 同尺寸高度最低。
2. 遮蔽式電感結構。
3. 同尺寸直流阻抗最低。
4. 可確保耐電流電感值降幅平順。
5. 一體成型的結構可防止噪音。
6. 應用頻率可達5MHz。
7. 產品無鉛適合無鉛銲錫。

■ Applications

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

● 應用

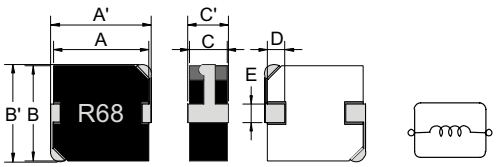
適合用於電源供應器、個人電腦和其他掌上型電子設備中電源線路上直流對直流整流的應用。

■ Lead Free Part Numbering

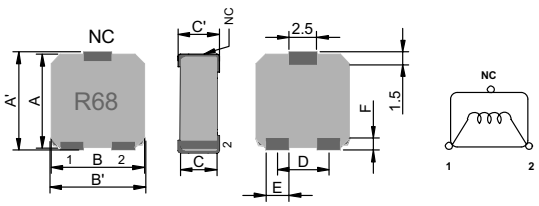
SMPI	1203	HW	—	R68	M
SMPI	1254	P3	—	R68	M
A	B	C		D	E

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

■ Dimensions



HW/PW type



P3 type

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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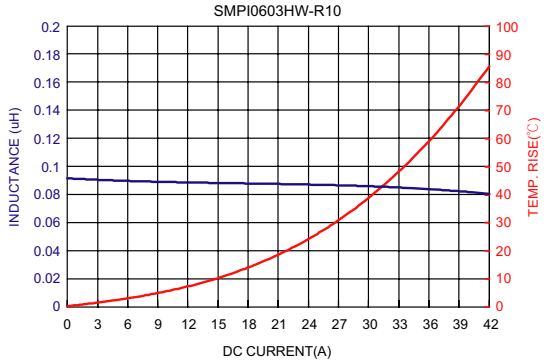
■ SMPI 0603/0604 Series

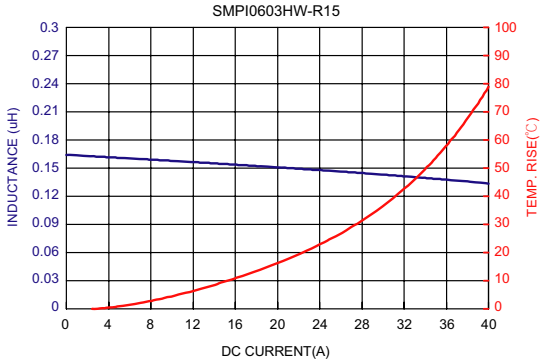
Part Number	Thickness (mm) max.	Inductance L0 (uH)±20% @ 0 Adc	I rms (A)	I sat (A)	DCR (mΩ) max.
SMPI 0603HW-R10M	3.0	0.10	32.5	42	1.7
SMPI 0603HW-R15M	3.0	0.15	26.0	38	2.5
SMPI 0603HW-R20M	3.0	0.20	24.0	36	3.0
SMPI 0603HW-R22M	3.0	0.22	23.0	36	2.8
SMPI 0603HW-R33M	3.0	0.33	20.0	30	3.9
SMPI 0603HW-R47M	3.0	0.47	17.5	26	4.2
SMPI 0603HW-R68M	3.0	0.68	15.5	23	5.5
SMPI 0603HW-R82M	3.0	0.82	13.0	20	8.0
SMPI 0603HW-1R0M	3.0	1.0	11.0	16	10
SMPI 0603HW-1R5M	3.0	1.5	9.0	14	15
SMPI 0603HW-2R2M	3.0	2.2	8.0	12	20
SMPI 0603HW-3R3M	3.0	3.3	6.0	10	30
SMPI 0603HW-4R7M	3.0	4.7	5.5	6.5	40
SMPI 0603HW-6R8M	3.0	6.8	4.5	6.0	60
SMPI 0604HW-8R2M	4.0	8.2	4.0	5.5	68
SMPI 0604HW-100M	4.0	10.0	3.0	4.5	105

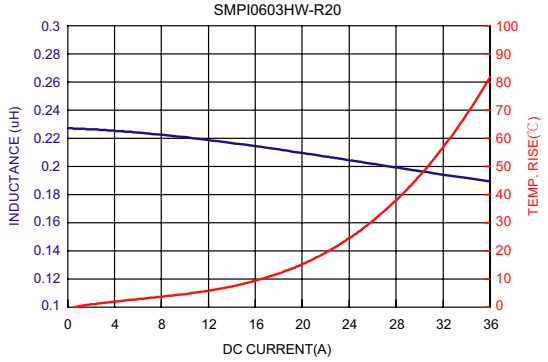
Note:

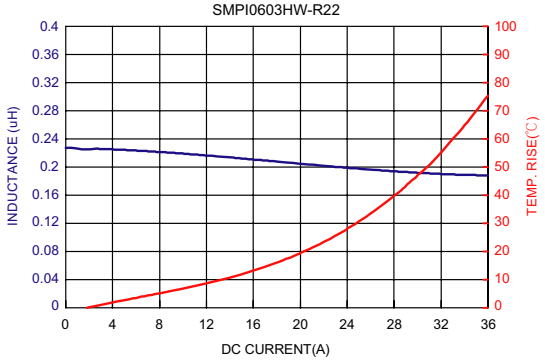
1. Test frequency : 100KHz / 0.25Vdc
2. Testing Instrument : L: HP4284A, CH11025, CH3302, CH1320, CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER.
3. Heat Rated Current (Irms) will cause the coil temperature rise approximately △T=40℃ without core loss.
4. Saturation Current (Isat) will cause L0 to drop approximately 20%
5. The part temperature (ambient + temp rise) should not exceed 125℃ 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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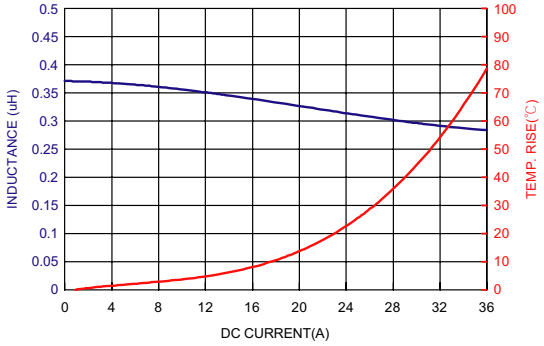
■ Typical Performance Curves

SMPI0603HW-R33



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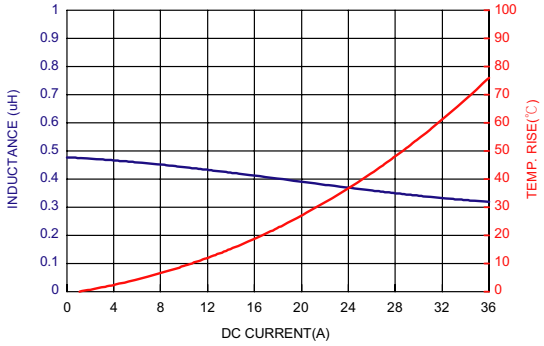

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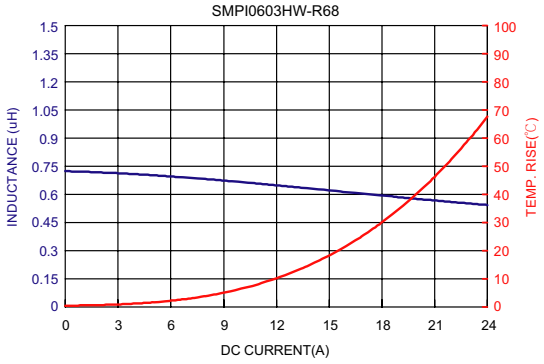

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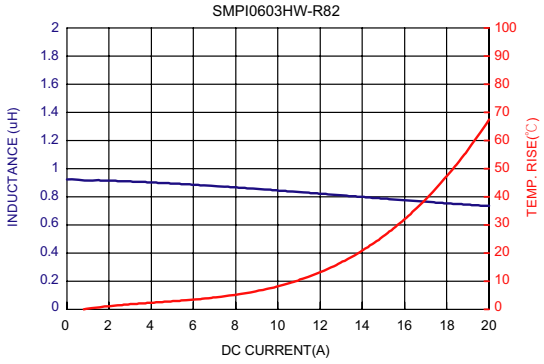

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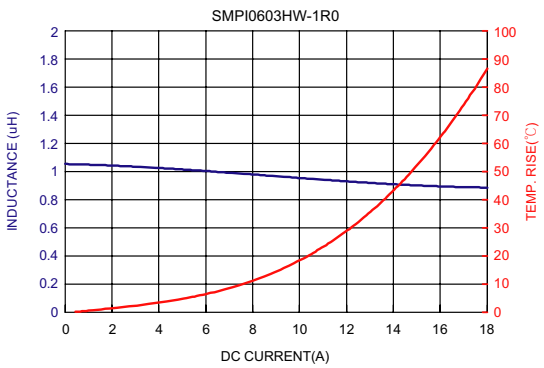

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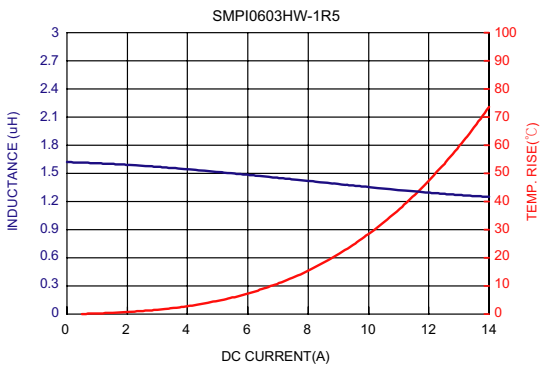

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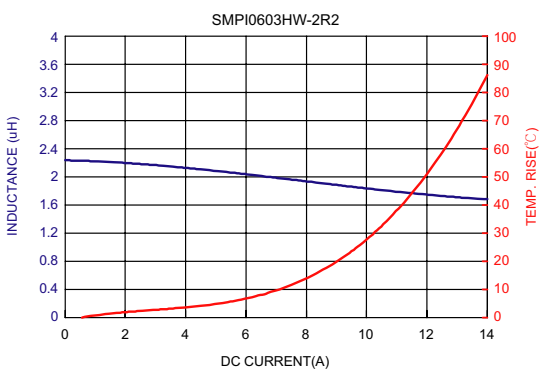

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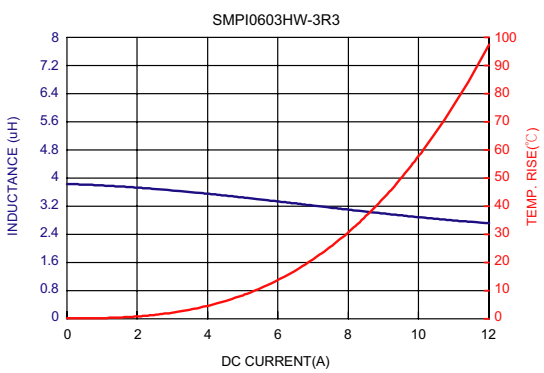

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