SMD Power Inductor

TMPA1004S-Series(N)-D

1. Features

1. Shielded construction.
2. Capable of corresponding high frequency .
3. Low loss realized with low DCR.
4. High performance (Isat) realized by metal dust core.
5. Ultra low buzz noise, due to composite construction.
6. 100% Lead(Pb)-Free and RoHS compliant.
7. Operating temperature -40~+125℃(Including self - temperature rise)

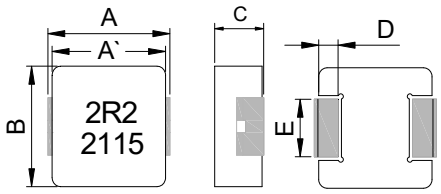
Halogen-free

RoHS

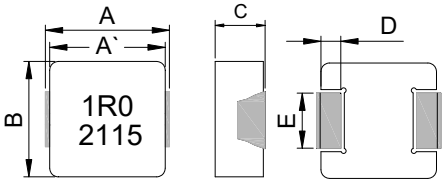
2. Applications

1. DC/DC converters in distributed power systems.
2. DC/DC converter for Field Programmable Gate Array(FPGA).
3. Battery powered devices.
4. Thin type on-board power supply module for exchanger.
5. VRM for server.
6. High current, low profile POL converters.
7. PDA/notebook/desktop/server and battery powered devices.

3. Dimensions

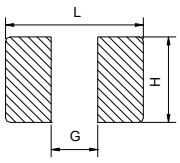


leadframe



non-leadframe

Customer Recommend PC Board



Series	A	A`	B	C	D	E
TMPA1004	11.0±0.3	10.0±0.3	10.0±0.3	3.8±0.2	2.0±0.3	See spec table

Unit:mm

L(mm)	G(mm)	H(mm)
12.5	5.4	3.5

Note: 1.PCB layout is referred to standard IPC-7351B
2. The above PCB layout reference only.
3. Recommend solder paste thickness at 0.15mm and above.

4. Part Numbering

TMPA	1004	S	-	1R0	MN	-	D
A	B	C		D	E		F

A: Series	
B: Dimension	BxC
C: Type	Standard.
D: Inductance	R10=0.1uH.
E: Inductance Tolerance	M=±20%
F: Code	Marking: Black.1R0 and 2115(21YY, 15WW,follow production date).

5. Specification

Part Number	Inductance L0 A(uH) ±20%	Heat Rating Current DC I rms (A)		Saturation Current DC I sat (A)		DCR (mΩ)Typ	DCR (mΩ)Max	E(mm) ±0.3	Type
		Typ	Max	Typ	Max				
TMPA1004S-R15YN-D	0.15±30%	44.0	38.0	82.0	75.0	0.5	0.6	3.0	non-leadframe
TMPA1004S-R22MN-D	0.22	36.0	33.0	70.0	60.0	0.72	0.83	3.0	non-leadframe
TMPA1004S-R36MN-D	0.36	33.0	29.0	51.0	45.0	1.05	1.18	3.0	non-leadframe
TMPA1004S-R47MN-D	0.47	32.0	28.0	46.0	40.0	1.3	1.5	3.0	non-leadframe
TMPA1004S-R56MN-D	0.56	25.0	23.0	34.0	29.0	1.6	1.8	2.5	non-leadframe
TMPA1004S-R68MN-D	0.68	23.0	20.0	31.0	28.0	1.9	2.2	2.5	non-leadframe
TMPA1004S-1R0MN-D	1.00	20.0	18.0	29.0	26.0	2.9	3.25	2.5	non-leadframe
TMPA1004S-1R5MN-D	1.50	17.5	16.0	26.0	22.0	3.7	4.2	2.5	non-leadframe
TMPA1004S-1R8MN-D	1.80	16.5	15.0	23.0	20.5	5.1	5.7	3.0	leadframe
TMPA1004S-2R2MN-D	2.20	15.0	13.0	20.0	16.0	5.8	6.7	3.0	leadframe
TMPA1004S-2R2MN-17A-D	2.20	17.0	13.0	20.0	16.0	5.8	6.7	3.0	leadframe
TMPA1004S-3R3MN-D	3.30	11.0	10.0	17.5	14.0	10.5	11.8	3.0	leadframe
TMPA1004S-4R7MN-D	4.70	8.8	8.0	15.2	13.0	15.8	19	3.0	leadframe
TMPA1004S-5R6MN-D	5.60	8.0	7.2	14.1	11.5	19	22.8	3.0	leadframe
TMPA1004S-6R8MN-D	6.80	7.8	6.8	12.2	11.0	22	24.5	3.0	leadframe
TMPA1004S-8R2MN-D	8.20	7.6	6.5	9.5	8.5	25	28	3.0	leadframe
TMPA1004S-100MN-D	10.0	7.5	6.1	8.6	7.5	27	30	3.0	leadframe
TMPA1004S-150MN-D	15.0	6.25	5.0	7.0	6.0	41	45	3.0	leadframe
TMPA1004S-220MN-D	22.0	5.0	4.1	6.2	5.5	58	66	3.0	leadframe
TMPA1004S-330MN-D	33.0	4.4	3.5	5.5	5.0	84	91	3.0	leadframe
TMPA1004S-470MN-D	47.0	3.5	3.0	4.0	3.7	125	143	3.0	leadframe

Note:

1. Test frequency : Ls : 100KHz /1.0V.
2. All test data referenced to 25℃ ambient.
3. Testing Instrument(or equ) : Agilent 4284A,E4991A,4339B,KEYSIGHT E4980A/AL,chroma3302,3250,16502.
4. Heat Rated Current (Irms) will cause the coil temperature rise approximately ΔT of 40℃
5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
6. 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.
7. Irms Testing : Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.
8. Rated DC Current : The less value whith is Irms or Isat

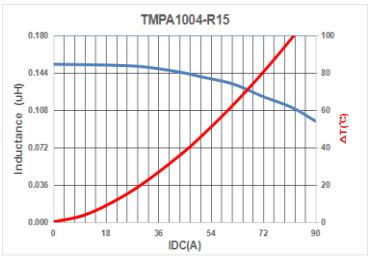
Part Number	Inductance L0 A(uH) ±20%	I rms (A)		I sat (A)		DCR (mΩ) ±7%	E(mm) ±0.3	Type
		Typ	Max	Typ	Max			
TMPA1004S-R15MN-R4807-D	0.15	40.0	30.0	75.0	65.0	0.48	3.0	non-leadframe
TMPA1004S-R22MN-R6007-D	0.22	50.0	40.0	72.0	65.0	0.60	3.0	non-leadframe

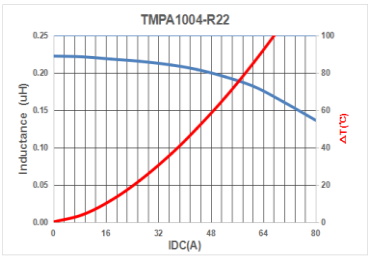
Note:

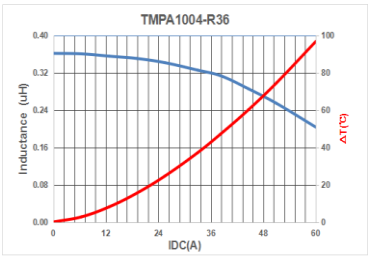
8. Test frequency : Ls : 100KHz /1.0V.
9. All test data referenced to 25℃ ambient.
10. Testing Instrument(or equ) : Agilent 4284A,E4991A,4339B,KEYSIGHT E4980A/AL,chroma3302,3250,16502.
11. Heat Rated Current (Irms) will cause the coil temperature rise approximately ΔT of 40℃
12. Saturation Current (Isat) will cause L0 to drop approximately 30%.
13. 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.
14. Irms Testing : Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.

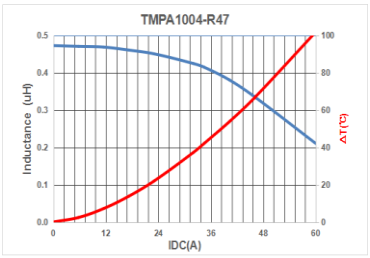
8.Rated DC current: The lower value of Irms and Isat.

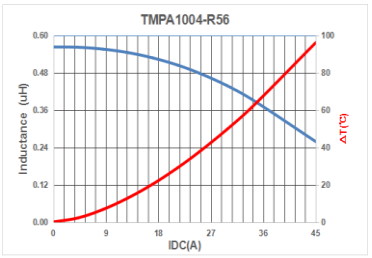
6. Typical Performance Curves

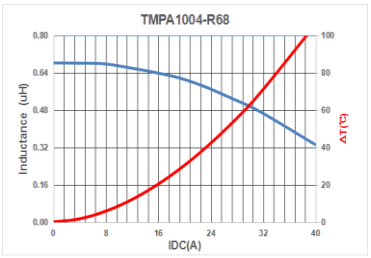


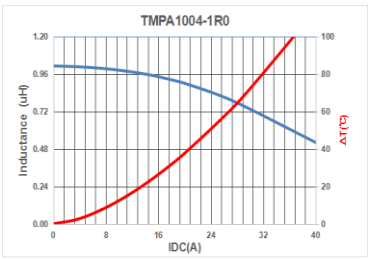


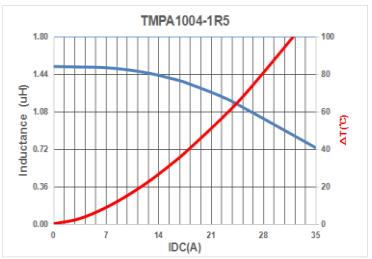


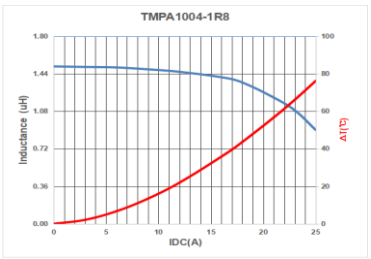


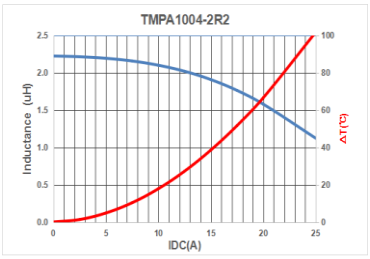


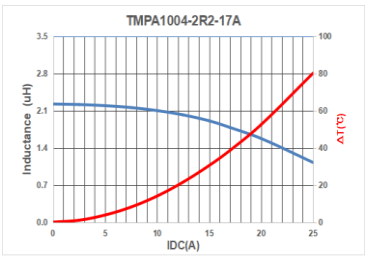


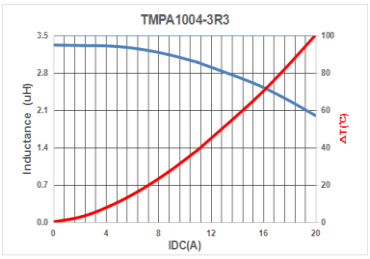


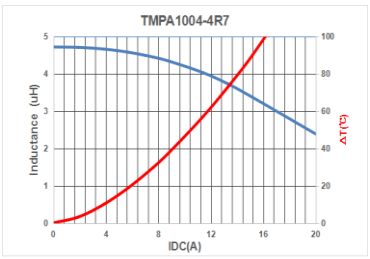


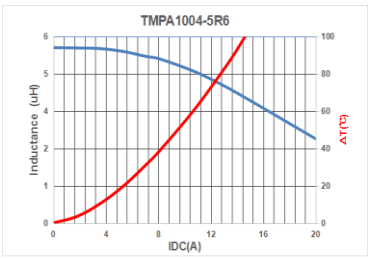


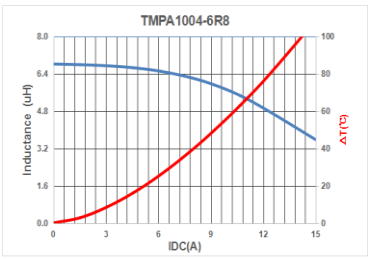


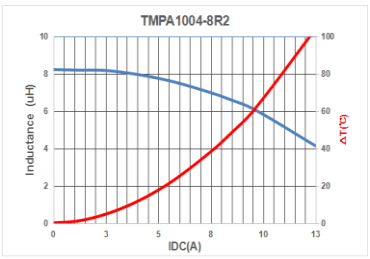


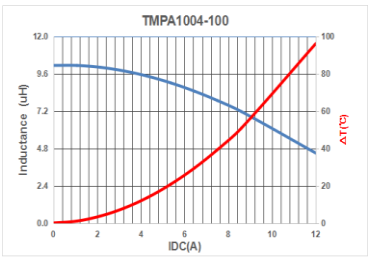


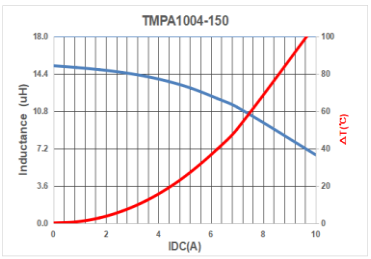


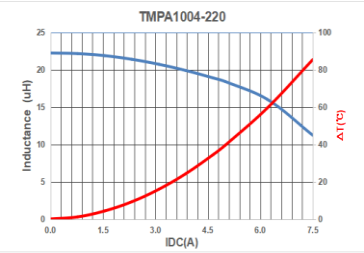


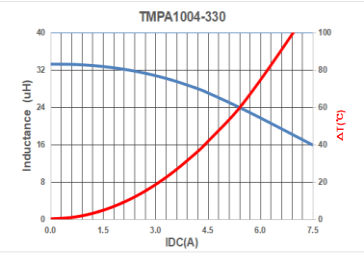









TMPA1004-220
Inductance (uH)
ΔT(℃)
IDC(A)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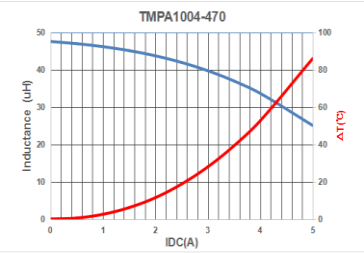
Inductance (uH)
ΔT(℃)
IDC(A)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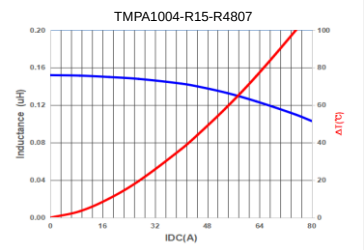
Inductance (uH)
ΔT(℃)
IDC(A)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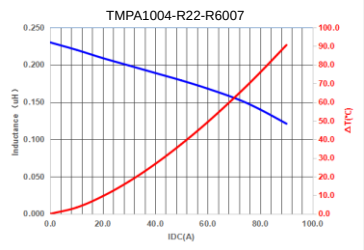
Inductance (uH)
ΔT(℃)
IDC(A)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Inductance (uH)
ΔT(℃)
IDC(A)