

SMD Power Inductor

TMPF-Series(N)-D

1. Features

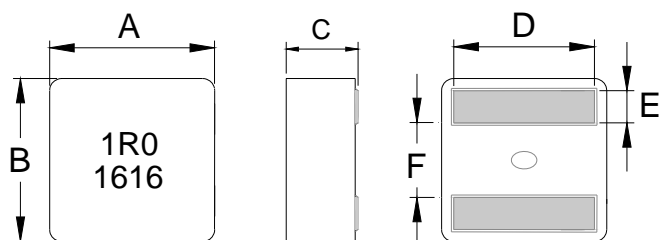
1. Soft saturation.
2. High current · low DCR · high efficiency.
3. Very low acoustic noise and very low leakage flux noise.
4. High reliability.
5. 100% Lead(Pb)-Free and RoHS compliant.



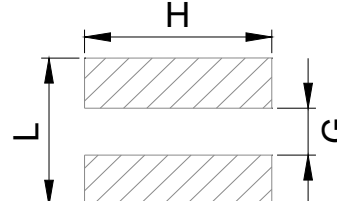
2. Applications

Note PC power system · incl. IMVP-6
DC/DC converter .

3. Dimensions

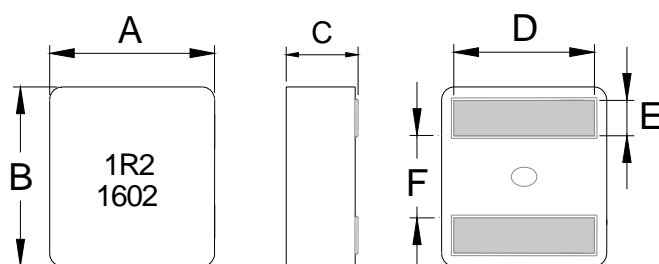


Recommend PC Board Pattern

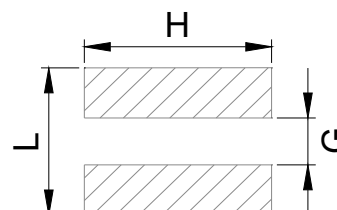


- Note: 1、 The above PCB layout reference only.
2、 Recommend solder paste thickness at
*0.12mm and above. (0402~0505)
*0.15mm and above. (0606LR)

Series	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	L (mm)	G (mm)	H (mm)
TMPF0402A	4.1±0.2	4.1±0.2	1.9±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
TMPF0402LR	4.1±0.2	4.1±0.2	1.9±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
TMPF0403LR	4.1±0.25	4.1±0.25	2.8±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
TMPF0404A	4.1±0.25	4.1±0.25	3.8±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
TMPF0502A	5.5±0.2	5.3±0.2	1.9±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
TMPF0503A	5.5±0.2	5.3±0.2	2.9±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
TMPF0505LR	5.5±0.2	5.3±0.2	4.8±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
TMPF0606LR	6.6±0.2	6.4±0.2	5.8±0.2	5.3±0.3	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref



Recommend PC Board Pattern



- Note: 1、 The above PCB layout reference only.
2、 Recommend solder paste thickness at 0.15mm and above.

Series	Inductance Range	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	L (mm)	G (mm)	H (mm)
TMPF0603A	1.2uH and below	6.6±0.2	6.4±0.2	2.8±0.2	See Spec table	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref
	1.5uH and above			2.9±0.2						
TMPF0605A	-	6.6±0.2	6.4±0.2	4.8±0.2	See Spec table	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref

Series	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	L(mm)	G(mm)	H(mm)
TMPF0703A	7.80±0.25	7.60±0.20	2.90±0.2	See Spec Table	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref

4. Part Numbering

TMPF
 0402
 A
 -
 1R0
 MN
 -
 D

A

B

C

D

E

A: Series

B: Dimension

C: Type

D: Inductance

E: Inductance Tolerance

F: Code

BxC

Material.

1R0=1.00uH

M=±20%

Marking: Black.1R0 and 1616(16 YY, 16 WW, follow production date).

5. Specification

Part Number	Inductance (uH) ±20% @ 0 A	I rms(A) Typ		I sat(A)		DCR (mΩ) Typ.	DCR (mΩ) Max.
		20°C rise	40°C rise	Typ	Max		
TMPF0402A-R10MN-D	0.10	13.5	18.0	38.0	33.0	2.2	2.42
TMPF0402A-R22MN-D	0.22	13.0	16.8	19.5	18.8	4.1	4.6
TMPF0402A-R36MN-D	0.36	11.0	14.5	17.0	15.0	5.6	6.3
TMPF0402A-R40MN-D	0.40	10.0	14.0	15.5	13.5	6.9	7.73
TMPF0402A-R56MN-D	0.56	8.5	12.0	14.0	12.6	8.4	9.3
TMPF0402A-R60MN-D	0.60	8.0	11.7	13.7	12.3	8.6	9.52
TMPF0402A-R72MN-D	0.72	7.6	10.5	12.0	10.6	10.4	11.6
TMPF0402A-1R0MN-D	1.00	6.8	9.6	9.6	8.8	13.3	14.6
TMPF0402A-1R2MN-D	1.20	6.6	9.0	9.0	7.8	16.2	17.9
TMPF0402A-1R5MN-D	1.50	5.8	7.6	8.0	7.4	21.0	23.5
TMPF0402A-1R8MN-D	1.80	5.2	7.0	7.5	7.0	25.0	28.0
TMPF0402A-2R2MN-D	2.20	4.6	5.6	6.5	6.0	35.2	38.7

Note:

1. Test frequency : L : 100KHz /0.1V.
2. All test data referenced to 25°C ambient.
3. Testing Instrument : L/Q: HP4284A,HP4395A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER,or EQU.
4. Current that causes the specified temperature rise from 25°C ambient.
5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
6. 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.
7. Special inquiries besides the above common used types can be met on your requirement.

Part Number	Inductance (μ H) $\pm 20\%$ @ 0 A	I rms(A) Typ		I sat(A)				DCR(m Ω) Typ.	DCR(m Ω) Max.
		20 $^{\circ}$ C rise	40 $^{\circ}$ C rise	Typ			Max		
				1	2	3	3		
TMPF0402LR-R47MN-D	0.47	9.8	13.2	7.0	10.0	14.0	12.5	6.0	6.8
TMPF0402LR-R68MN-D	0.68	9.2	12.0	5.2	8.0	11.6	10.0	7.3	8.2
TMPF0402LR-R82MN-D	0.82	8.5	11.5	4.8	6.5	10.2	9.0	8.6	9.5
TMPF0402LR-1R0MN-D	1.00	8.0	11.0	4.5	5.4	9.2	8.0	10.6	11.7
TMPF0402LR-1R2MN-D	1.20	7.2	9.5	4.3	5.0	8.6	7.5	12.2	13.4
TMPF0402LR-1R5MN-D	1.50	6.7	9.1	4.1	4.5	7.5	6.7	14.4	15.8
TMPF0402LR-2R0MN-D	2.00	6.2	8.2	3.2	4.0	6.2	5.0	21.15	23.3
TMPF0402LR-2R2MN-D	2.20	6.0	8.0	3.1	3.8	6.0	4.8	21.35	23.5
TMPF0402LR-3R3MN-D	3.30	4.4	5.5	2.7	3.4	5.3	4.4	34.2	38.3
TMPF0402LR-4R7MN-D	4.70	3.8	5.1	2.0	2.7	4.0	3.5	52.0	57.2
TMPF0403LR-3R3MN-D	3.30	5.0	6.6	3.3	4.8	6.2	5.3	26.0	28.6
TMPF0403LR-4R7MN-D	4.70	3.9	5.1	2.8	4.2	5.5	4.8	40.1	44.1
TMPF0403LR-6R8MN-D	6.80	3.1	4.0	2.3	3.5	4.6	4.2	67.4	74.1

Note:

1. Test frequency : L : 100KHz /0.1V.
2. All test data referenced to 25 $^{\circ}$ C ambient.
3. Testing Instrument : L: HP4284A,HP4395A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER,or EQU.
4. Current that causes the specified temperature rise from 25 $^{\circ}$ C ambient.
5. Saturation Current (Isat 1) will cause L0 to drop approximately 10%.
Saturation Current (Isat 2) will cause L0 to drop approximately 20%.
Saturation Current (Isat 3) will cause L0 to drop approximately 30%.
6. The part temperature (ambient + temp rise) should not exceed 125 $^{\circ}$ 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.
7. Special inquiries besides the above common used types can be met on your requirement.

Part Number	Inductance (uH) ±20% @ 0 A	I rms(A) Typ		I sat(A)		DCR(mΩ) Typ.	DCR(mΩ) Max.
		20°C rise	40°C rise	Typ	Max		
TMPF0404A-1R8MN-D	1.80	6.0	7.3	8.0	7.5	17.5	19.3
TMPF0404A-2R0MN-D	2.00	5.7	7.0	7.5	7.0	19.0	21.0
TMPF0404A-2R2MN-D	2.20	5.5	6.8	7.3	6.8	19.0	21.0
TMPF0502A-R15MN-D	0.15	13.9	18.8	30.0	27.0	4.00	4.60
TMPF0502A-R16MN-D	0.16	13.9	18.8	30.0	27.0	4.00	4.60
TMPF0502A-R33MN-D	0.33	10.5	14.4	26.0	24.0	6.10	7.00
TMPF0502A-R47MN-D	0.47	10.1	14.1	22.0	20.0	7.00	8.05
TMPF0502A-R56MN-D	0.56	9.9	13.9	19.0	16.0	8.70	9.54
TMPF0502A-R68MN-D	0.68	9.6	13.4	16.0	14.0	8.90	10.2
TMPF0502A-R80MN-D	0.80	9.4	13.0	15.5	13.5	10.3	11.8
TMPF0502A-R82MN-D	0.82	8.5	12.0	15.0	13.0	11.0	12.7
TMPF0502A-1R0MN-D	1.00	7.5	10.5	14.5	12.8	12.0	13.8
TMPF0502A-1R2MN-D	1.20	6.8	9.40	14.0	12.2	14.2	16.3
TMPF0502A-1R5MN-D	1.50	6.4	8.80	13.3	11.7	16.2	18.7
TMPF0503A-R15MN-D	0.15	14.3	22.2	36.0	32.5	2.10	2.31
TMPF0503A-R16MN-D	0.16	14.2	22.2	35.0	32.0	2.12	2.33
TMPF0503A-R33MN-D	0.33	13.8	19.2	28.0	26.0	3.20	3.52
TMPF0503A-R56MN-D	0.56	13.6	17.7	22.2	20.2	4.05	4.52
TMPF0503A-R60MN-D	0.60	13.6	17.7	22.0	20.0	4.11	4.52
TMPF0503A-R80MN-D	0.80	10.1	13.1	20.0	18.0	5.14	5.65
TMPF0503A-R82MN-D	0.82	9.90	12.9	19.7	17.6	5.25	5.78
TMPF0503A-1R0MN-D	1.00	9.00	12.2	16.5	14.3	6.90	7.60
TMPF0503A-1R2MN-D	1.20	8.50	11.0	15.0	13.5	8.80	9.70
TMPF0503A-1R5MN-D	1.50	8.00	10.5	14.0	12.5	10.1	11.2
TMPF0503A-1R8MN-D	1.80	7.60	10.1	12.3	11.3	11.5	12.7
TMPF0503A-2R2MN-D	2.20	7.20	9.70	10.0	9.0	13.2	14.5
TMPF0503A-3R3MN-D	3.30	5.90	8.10	9.5	8.7	21.0	23.1
TMPF0503A-4R7MN-D	4.70	4.30	5.90	8.2	7.0	33.0	36.3
TMPF0505LR-5R6MN-D	5.60	5.30	7.20	8.60	7.20	22.0	24.2
TMPF0505LR-6R8MN-D	6.80	4.80	6.40	7.80	6.60	26.0	28.6
TMPF0505LR-8R2MN-D	8.20	4.60	6.10	7.20	6.10	29.5	32.5
TMPF0505LR-100MN-D	10.0	3.80	5.00	6.50	5.40	39.0	43.0
TMPF0505LR-150MN-D	15.0	3.00	4.00	5.50	4.60	60.0	66.0
TMPF0505LR-220MN-D	22.0	2.50	3.40	5.00	4.10	90.6	99.65

Note:

1. Test frequency : L : 100KHz /0.1V.
2. All test data referenced to 25°C ambient.
3. Testing Instrument : L/Q: HP4284A,HP4395A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER,or EQU.
4. Current that causes the specified temperature rise from 25°C ambient.
5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
6. 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.
7. Special inquiries besides the above common used types can be met on your requirement.

Part Number	Inductance(uH) ±20% @ 0 A	I rms(A) Typ		I sat(A)		DCR (mΩ) Typ.	DCR (mΩ) Max.	D(mm) ±0.3
		20°C rise	40°C rise	Typ	Max			
TMPF0603A-R18MN-D	0.18	24.0	32.0	40.0	36.0	1.60	1.75	5.30
TMPF0603A-R33MN-D	0.33	20.0	25.0	32.0	28.0	2.25	2.50	5.55
TMPF0603A-R56MN-D	0.56	17.0	22.0	29.0	25.0	3.00	3.31	5.30
TMPF0603A-1R0MN-D	1.00	13.0	18.0	23.0	18.0	5.50	6.05	5.20
TMPF0603A-1R2MN-D	1.20	12.0	16.0	22.0	16.0	6.70	7.40	5.15
TMPF0603A-1R8MN-D	1.80	10.0	14.0	18.2	13.0	9.20	10.2	5.10
TMPF0603A-2R2MN-D	2.20	7.00	10.0	15.9	11.0	11.0	12.2	5.05
TMPF0603A-3R3MN-D	3.30	6.00	8.00	12.2	9.00	18.8	20.8	5.00
TMPF0603A-4R5MN-D	4.50	5.00	7.00	10.0	8.00	23.0	25.3	5.00
TMPF0605A-1R0MN-D	1.00	15	20	23.0	18.0	4.1	4.52	5.3
TMPF0605A-1R2MN-D	1.20	14	18	22.0	16.0	5.3	5.83	5.3
TMPF0605A-1R5MN-D	1.50	13	17	19.5	14.5	5.7	6.3	5.3
TMPF0605A-1R8MN-D	1.80	12	16	18.5	13.5	6.4	7.1	5.3
TMPF0605A-2R2MN-D	2.20	10	13	16.0	12.0	7.7	8.5	5.2
TMPF0605A-3R3MN-D	3.30	8.5	11	12.5	10.0	11.2	12.5	5.2
TMPF0605A-4R3MN-D	4.30	7.0	9.0	11.0	8.5	15.1	16.2	5.2
TMPF0605A-4R7MN-D	4.70	6.5	8.5	10.5	8.0	16.7	18.4	5.2

Note:

1. Test frequency : L : 100KHz /0.1V.
2. All test data referenced to 25°C ambient.
3. Testing Instrument : L: HP4284A,HP4395A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER,or EQU.
4. Current that causes the specified temperature rise from 25°C ambient.
5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
6. 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.
7. Special inquiries besides the above common used types can be met on your requirement.

Part Number	Inductance (μ H) \pm 20% @ 0 A	I rms(A) Typ		I sat(A)		DCR (m Ω) Typ.	DCR (m Ω) Max.
		20 $^{\circ}$ C rise	40 $^{\circ}$ C rise	Typ	Max		
TMPF0606LR-4R7MN-D	4.70	8.0	11.0	10.5	9.5	13.1	14.4
TMPF0606LR-5R6MN-D	5.60	7.5	10.0	10.0	9.0	14.3	15.8
TMPF0606LR-6R8MN-D	6.80	7.0	9.0	9.2	8.7	18.9	20.8
TMPF0606LR-8R2MN-D	8.20	6.0	8.0	8.5	8.0	22.5	24.8
TMPF0606LR-100MN-D	10.0	5.0	7.0	7.6	6.8	26.6	29.3
TMPF0606LR-150MN-D	15.0	4.5	6.0	5.8	5.2	39.0	43.0
TMPF0606LR-220MN-D	22.0	3.8	5.0	5.6	5.0	55.0	60.5

Note:

1. Test frequency : L : 100KHz /0.1V.
2. All test data referenced to 25 $^{\circ}$ C ambient.
3. Testing Instrument : L: HP4284A,HP4395A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER,or EQU.
4. Current that causes the specified temperature rise from 25 $^{\circ}$ C ambient.
5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
6. The part temperature (ambient + temp rise) should not exceed 125 $^{\circ}$ 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.
7. Special inquiries besides the above common used types can be met on your requirement.

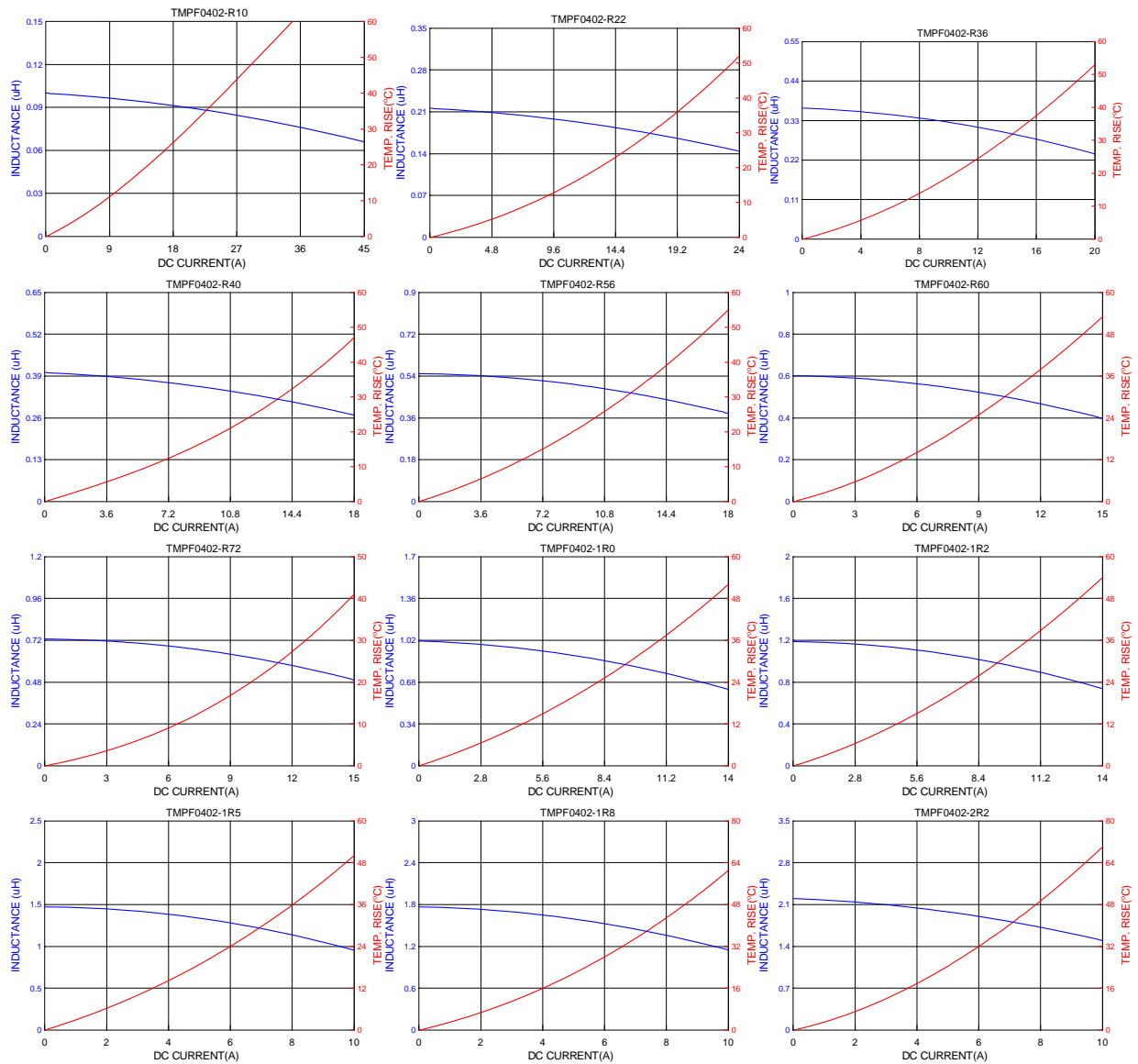
Part Number	Inductance (μ H) \pm 20% @ 0 A	I rms(A) Typ		I sat(A)		DCR (m Ω) Typ.	DCR (m Ω) Max.	D (mm) \pm 0.3
		20 $^{\circ}$ C rise	40 $^{\circ}$ C rise	Typ	Max			
TMPF0703A-R60MN-D	0.60	18.0	23.0	36.0	32.0	2.90	3.20	6.6
TMPF0703A-1R0MN-D	1.00	16.1	21.8	30.0	28.0	4.55	5.00	6.6
TMPF0703A-1R5MN-D	1.50	12.0	15.3	25.0	23.5	7.50	8.25	6.6
TMPF0703A-2R2MN-D	2.20	10.0	13.0	19.0	17.0	12.4	13.7	6.2
TMPF0703A-3R3MN-D	3.30	8.00	10.0	15.0	13.0	16.3	18.0	6.2
TMPF0703A-4R7MN-D	4.70	6.90	9.00	13.5	12.2	24.2	26.7	6.2
TMPF0703A-5R6MN-D	5.60	5.30	7.30	12.5	11.5	30.1	33.2	6.2
TMPF0703A-6R8MN-D	6.80	4.50	6.80	12.0	11.0	38.6	42.5	6.2
TMPF0703A-8R2MN-D	8.20	3.00	5.90	10.2	9.0	44.3	48.73	6.2

Note:

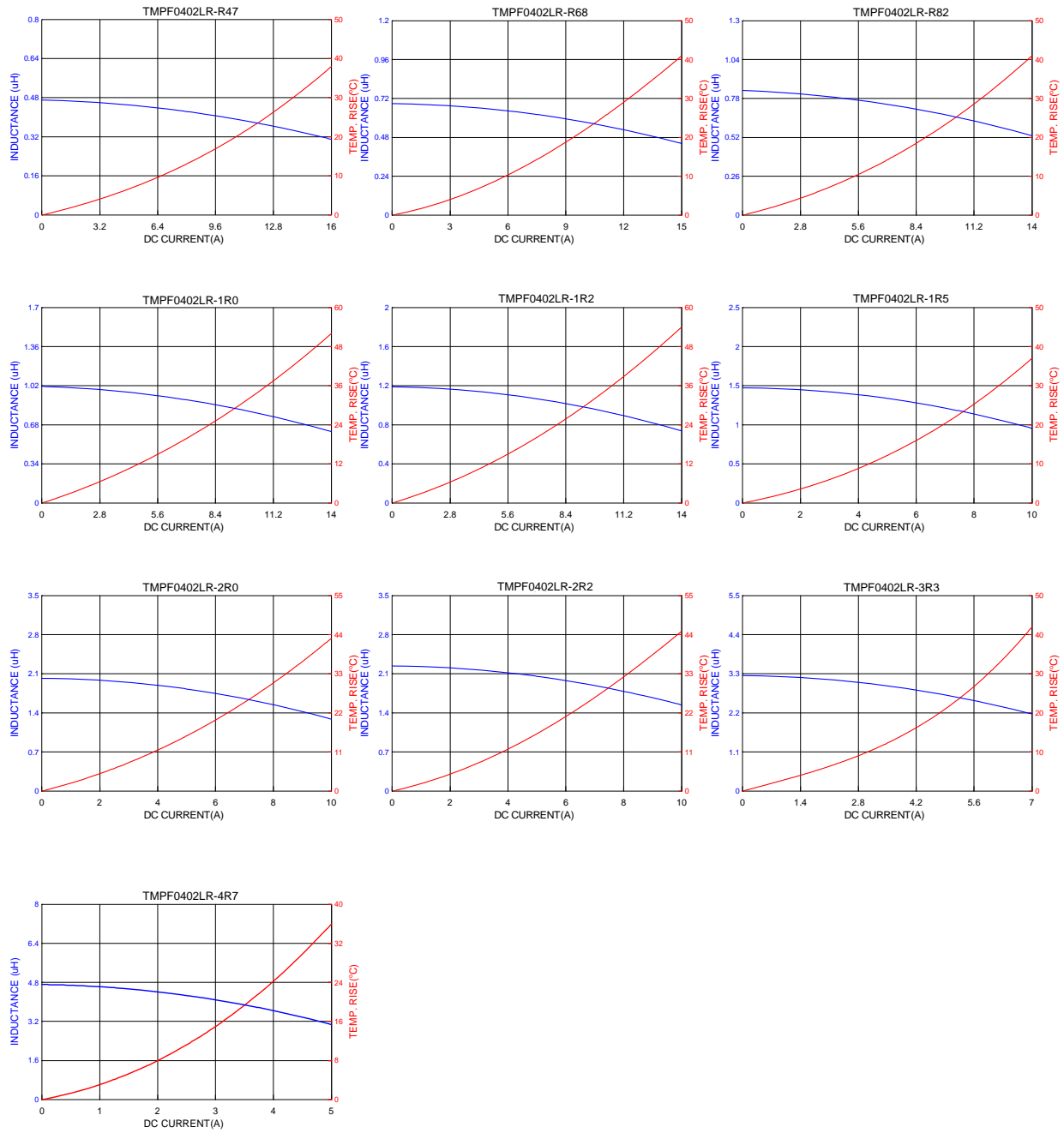
8. Test frequency : L : 100KHz /0.1V.
9. All test data referenced to 25 $^{\circ}$ C ambient.
10. Testing Instrument : L: HP4284A,HP4395A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER,or EQU.
11. Current that causes the specified temperature rise from 25 $^{\circ}$ C ambient.
12. Saturation Current (Isat) will cause L0 to drop approximately 30%.
13. The part temperature (ambient + temp rise) should not exceed 125 $^{\circ}$ 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.
14. Special inquiries besides the above common used types can be met on your requirement.

6. Typical Performance Curves

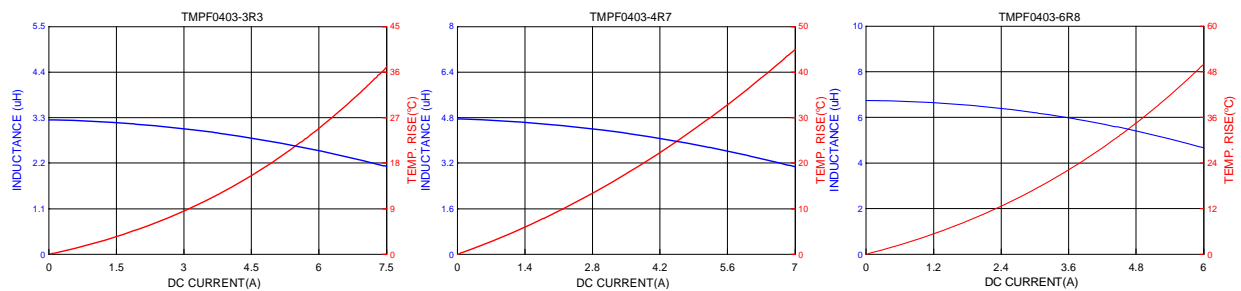
TMPF0402A



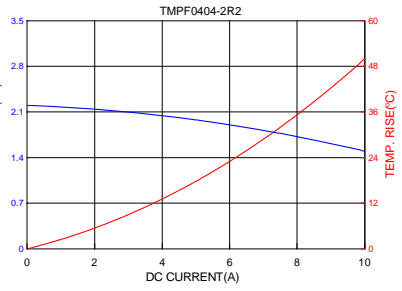
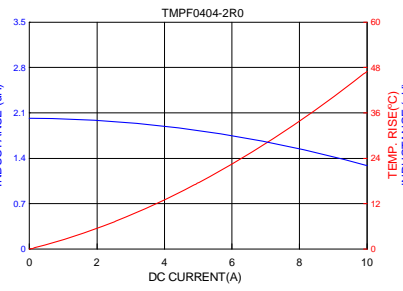
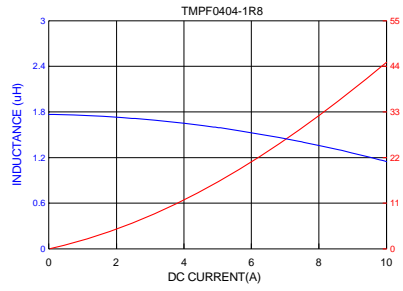
TMPF 0402LR



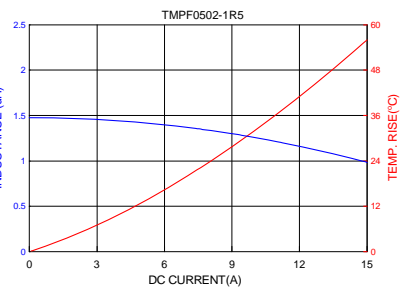
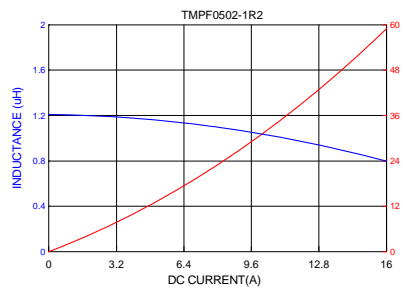
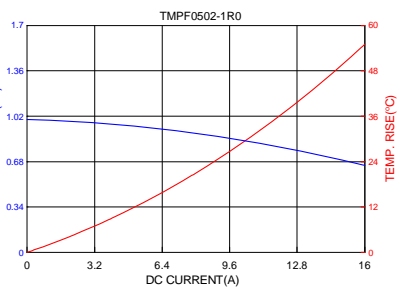
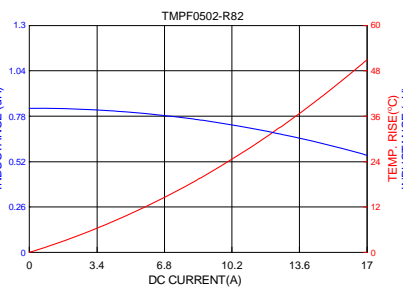
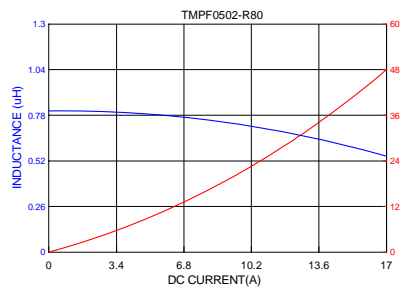
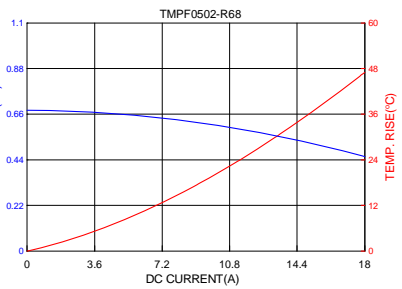
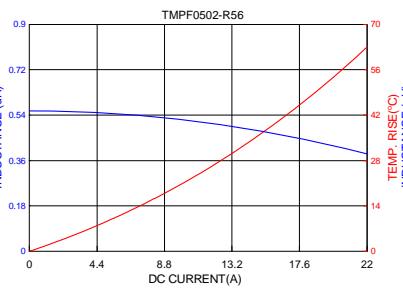
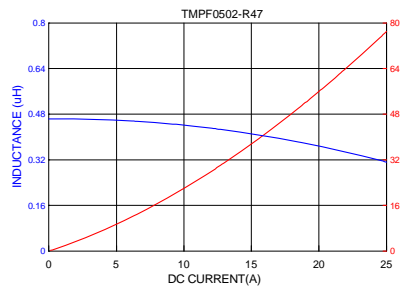
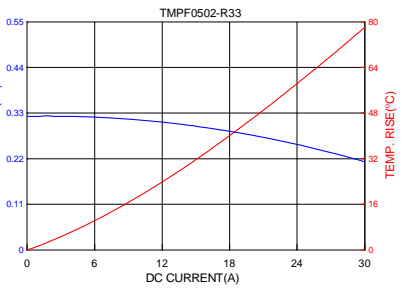
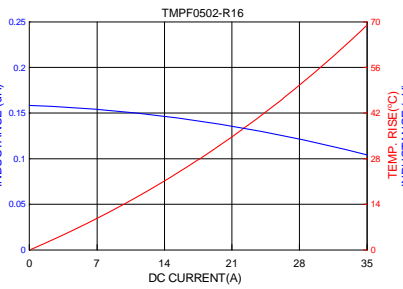
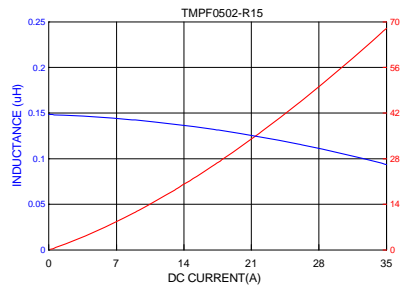
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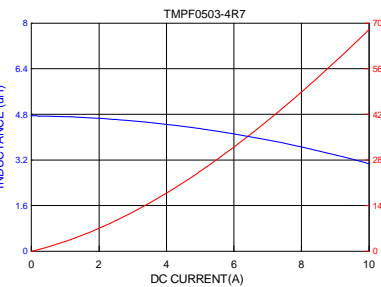
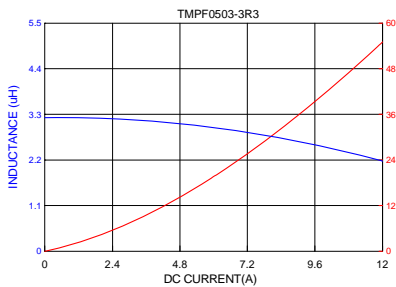
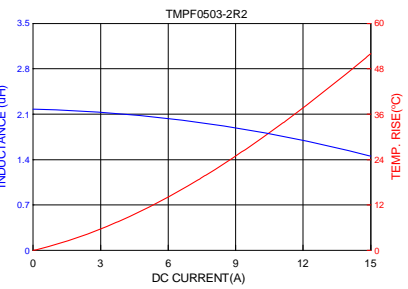
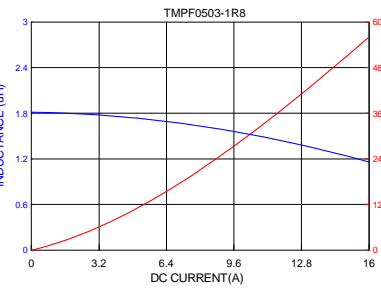
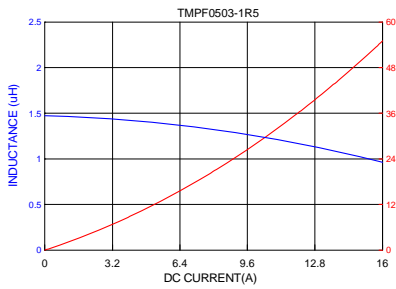
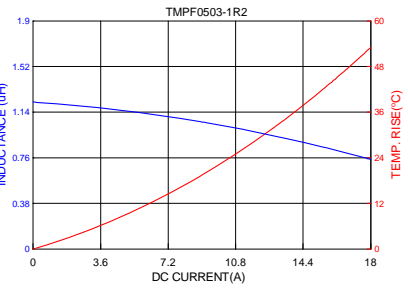
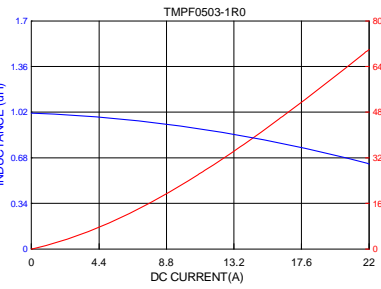
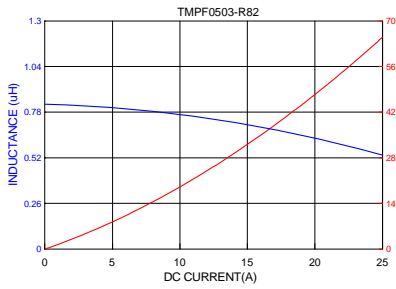
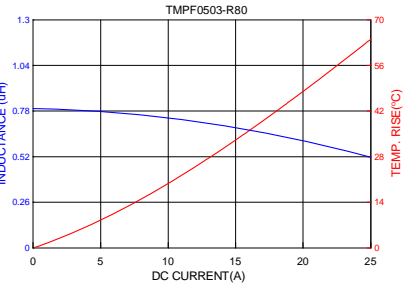
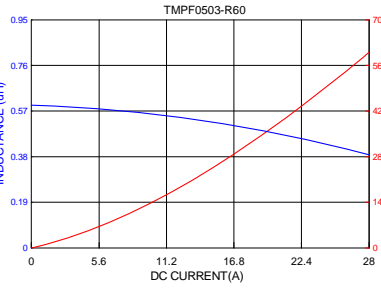
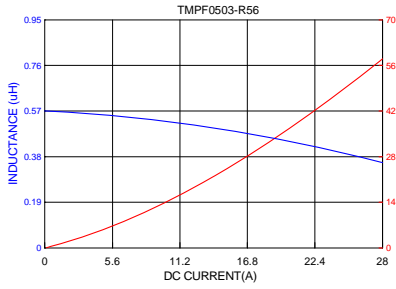
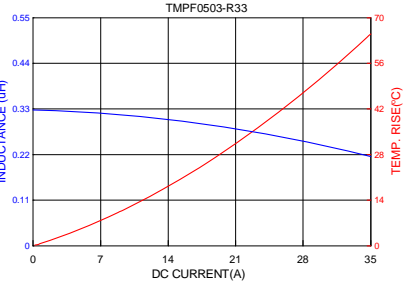
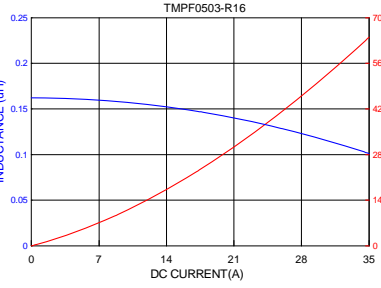
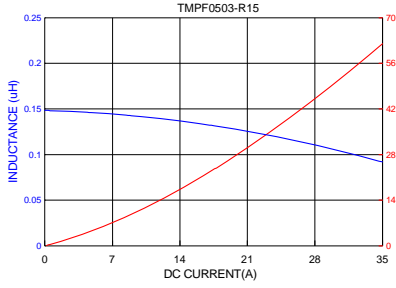
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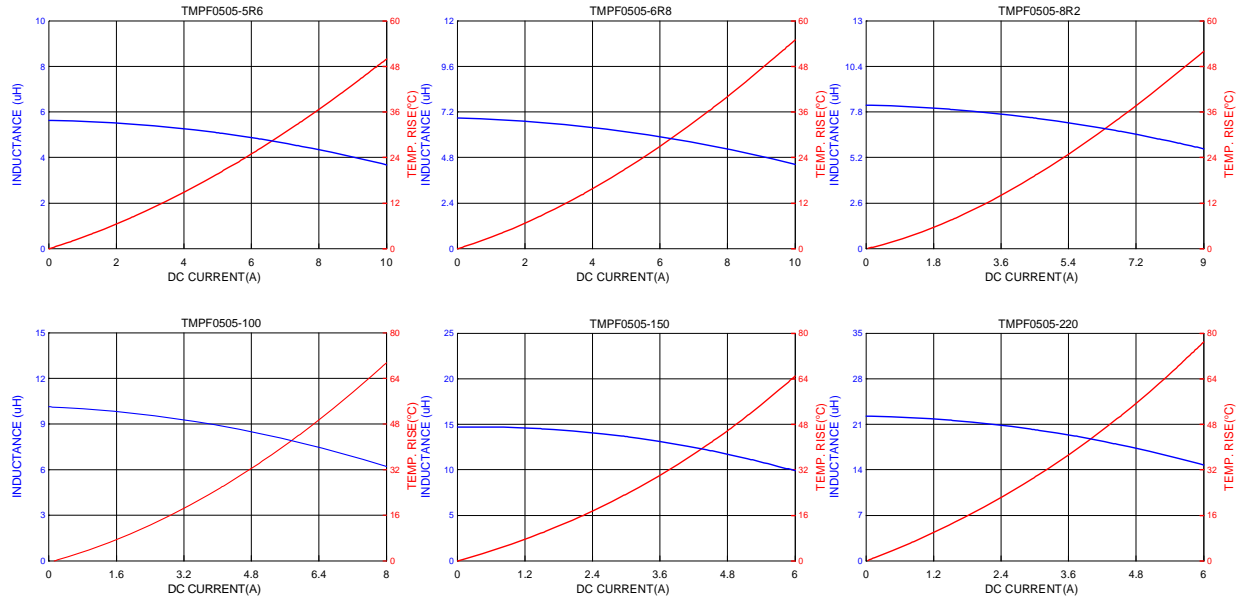
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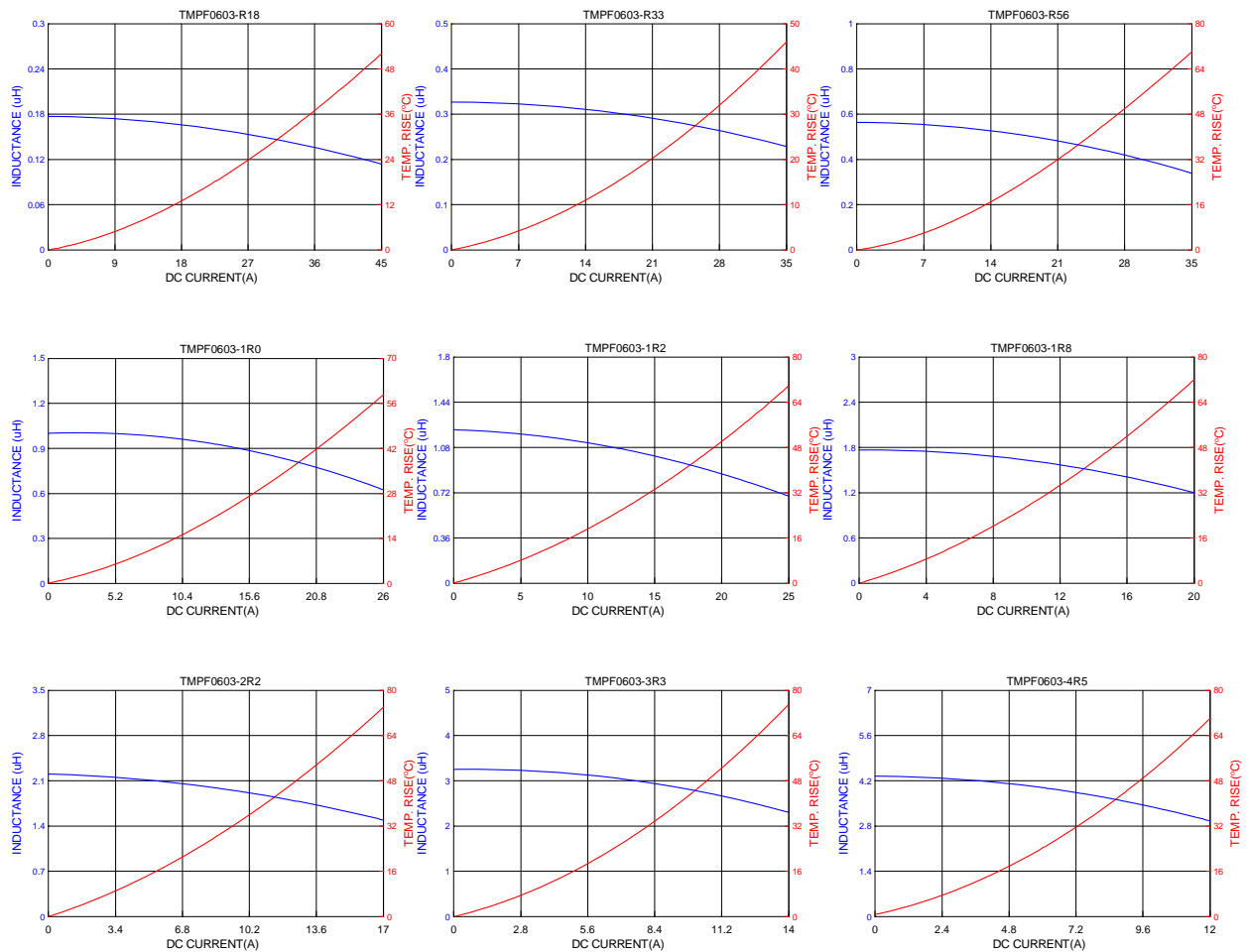
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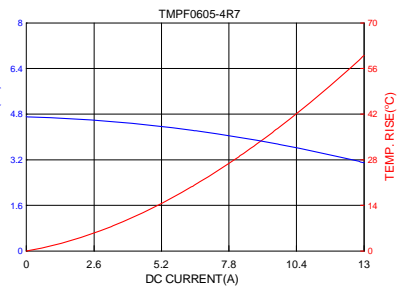
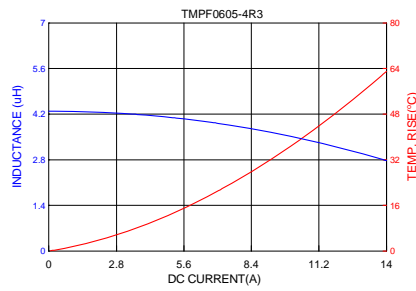
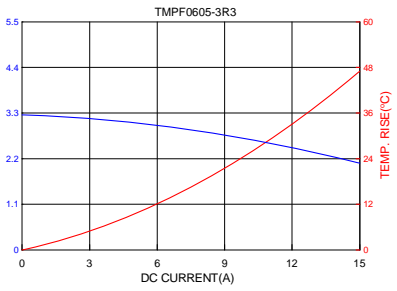
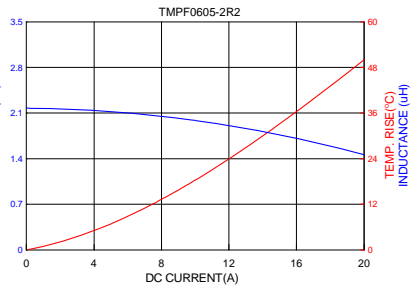
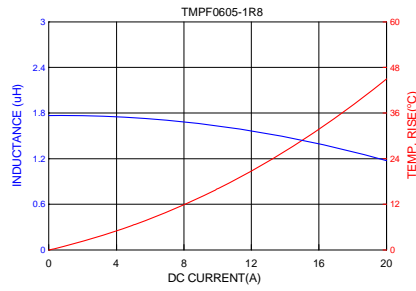
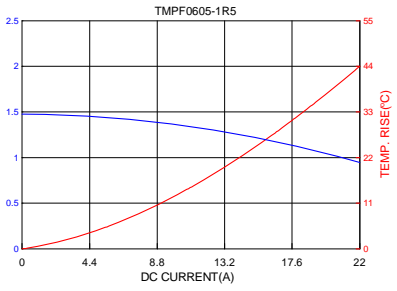
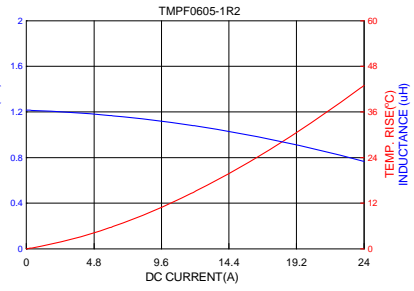
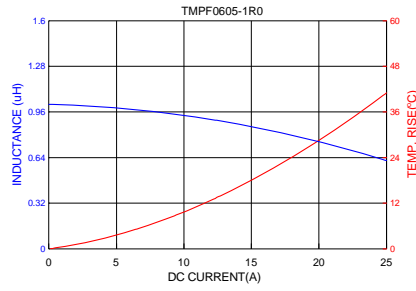
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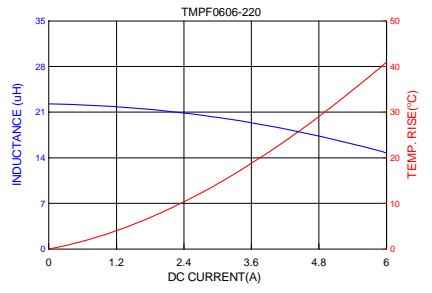
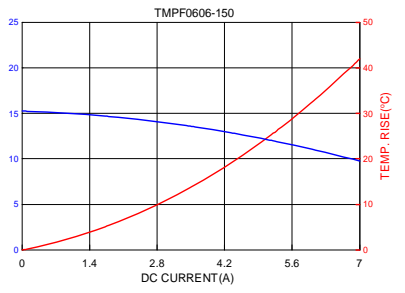
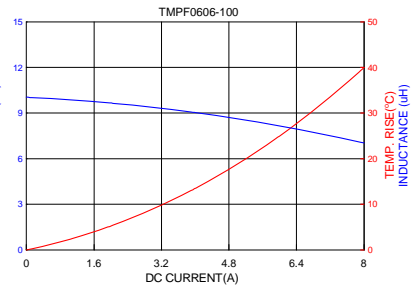
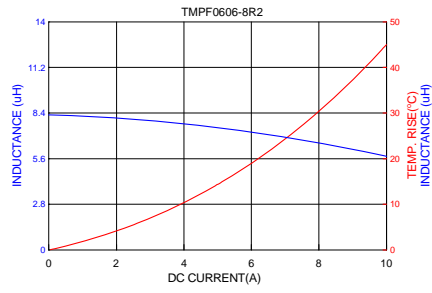
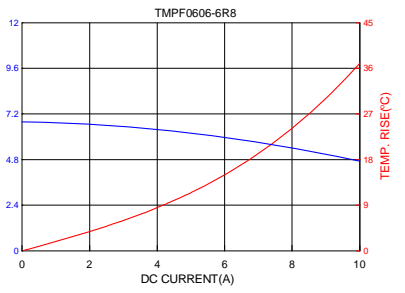
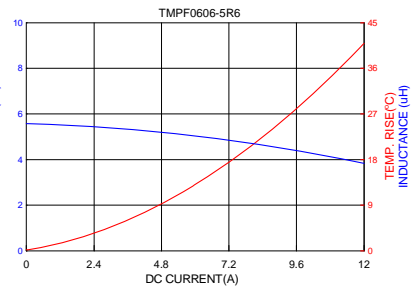
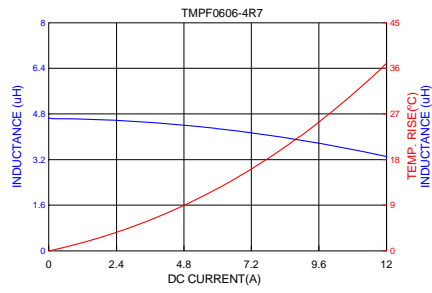
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TMPF0605A



TMPF0606LR



TMPF0703A

