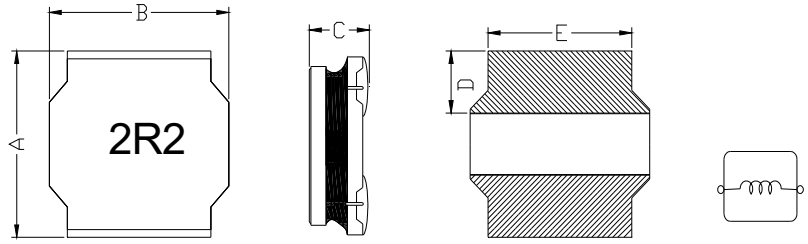
SMD Power Inductor

HPC6045NC-SERIES

1. Features

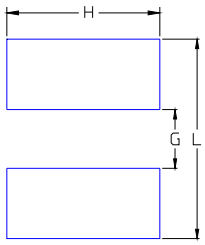
1. This specification applies Low Profile Power Inductors.
2. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
3. Operating temperature :-40~+125℃ (Including self - temperature rise)

2. Dimension



Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
HPC6045NC	6.0±0.3	6.0±0.3	4.2±0.3	1.9±0.3	4.8±0.3

Recommended Land pattern



L(mm)	G(mm)	H(mm)
6.5	2.2	6.5

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.

3. Part Numbering

HPC	6045	NC	-	2R2	M
A	B	C		D	E

A: Series
B: Dimension A/B*C
C: Type C=for commercial
D: Inductance 2R2=2.20uH,100=10uH,101=100uH,102=1000uH
E: Inductance Tolerance K=±10%, L=±15%, M=±20%, N=±25%.Y=±30%.
marking direction cannot decide polarity. Color: Black, unidirectional.
magnetic shielding

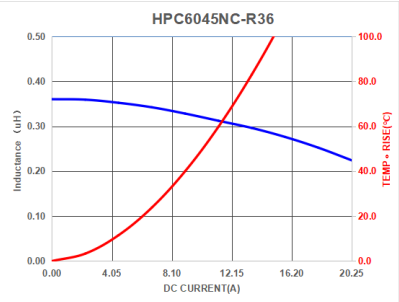
4. Specification

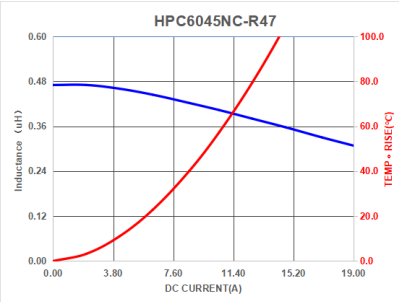
Part Number	Inductance (uH)±20% @ 0 A	I rms (A)		I sat (A)		DCR (mΩ) ±20%
		Typ	Max	Typ	Max	
HPC6045NC-R36M	0.36	9.00	8.50	18.00	16.50	4.80
HPC6045NC-R47M	0.47	8.60	8.00	17.00	16.00	6.80
HPC6045NC-R82M	0.82	8.20	7.50	14.50	13.50	8.50
HPC6045NC-1R0M	1.00	8.00	7.30	13.50	12.50	10.0
HPC6045NC-1R2M	1.20	7.50	7.00	12.50	11.50	10.5
HPC6045NC-1R3M	1.30	7.50	7.00	12.50	11.50	10.5
HPC6045NC-1R5M	1.50	7.00	6.60	12.00	11.00	11.7
HPC6045NC-1R8M	1.80	6.80	6.20	11.00	10.00	12.0
HPC6045NC-2R0M	2.00	6.50	5.80	10.50	9.50	13.5
HPC6045NC-2R2M	2.20	6.00	5.30	9.50	8.55	15.0
HPC6045NC-2R3M	2.30	5.80	5.00	9.30	8.20	16.0
HPC6045NC-3R0M	3.00	5.20	4.60	8.00	7.50	20.0
HPC6045NC-3R3M	3.30	5.00	4.50	7.80	7.30	21.0
HPC6045NC-3R6M	3.60	4.90	4.30	7.40	6.90	22.5
HPC6045NC-4R7M	4.70	4.50	4.00	6.80	6.20	26.0
HPC6045NC-5R6M	5.60	4.10	3.70	6.40	5.70	31.0
HPC6045NC-6R3M	6.30	3.80	3.50	5.90	5.30	33.0
HPC6045NC-6R8M	6.80	3.60	3.30	5.70	5.15	34.0
HPC6045NC-8R2M	8.20	3.40	2.90	5.10	4.50	46.0
HPC6045NC-100M	10.0	3.20	2.60	4.60	4.20	52.0
HPC6045NC-120M	12.0	3.00	2.40	4.00	3.70	65.0
HPC6045NC-150M	15.0	2.80	2.20	3.80	3.30	71.0
HPC6045NC-180M	18.0	2.60	2.10	3.40	2.90	80.0
HPC6045NC-220M	22.0	2.30	1.90	3.30	2.70	96.0
HPC6045NC-330M	33.0	1.80	1.50	2.50	2.10	145
HPC6045NC-470M	47.0	1.60	1.20	2.00	1.75	200
HPC6045NC-560M	56.0	1.40	1.00	1.80	1.65	230
HPC6045NC-680M	68.0	1.10	0.92	1.60	1.52	305
HPC6045NC-820M	82.0	0.98	0.88	1.50	1.40	365
HPC6045NC-101M	100	0.92	0.82	1.33	1.25	456
HPC6045NC-121M	120	0.85	0.79	1.20	1.10	500
HPC6045NC-151M	150	0.75	0.70	1.10	1.00	626
HPC6045NC-181M	180	0.68	0.60	1.00	0.90	745
HPC6045NC-221M	220	0.60	0.50	0.88	0.77	900
HPC6045NC-331M	330	0.55	0.45	0.60	0.55	1400
HPC6045NC-471M	470	0.40	0.35	0.50	0.45	2050
HPC6045NC-681M	680	0.30	0.30	0.45	0.40	2900

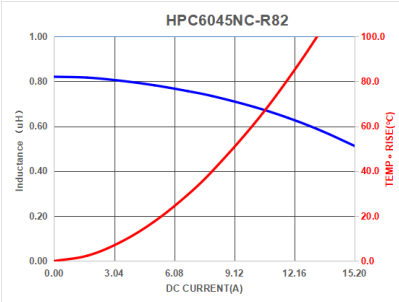
Note:

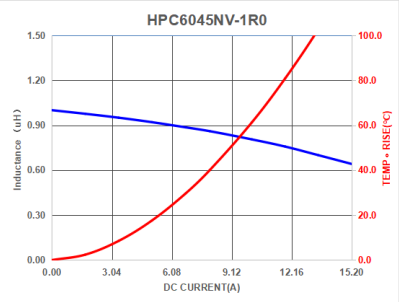
1. All test data referenced to 25℃ ambient , Ls:1MHz/1V.
2. Testing Instrument : HP4284A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH502BC MICRO OHMMETER.
3. Heat Rated Current (Irms) will cause the coil temperature rise approximately Δt of 40℃
4. Saturation Current (Isat) will cause L0 to drop approximately 30%
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.
6. Special inquiries besides the above common used types can be met on your requirement.
7. Rated DC current: The lower value of Irms and Isat.

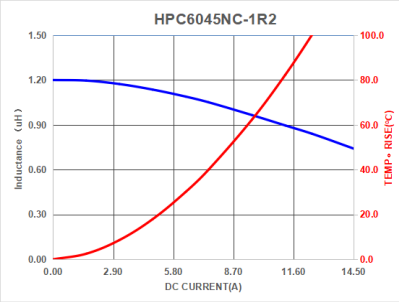
5. Typical Performance Curves

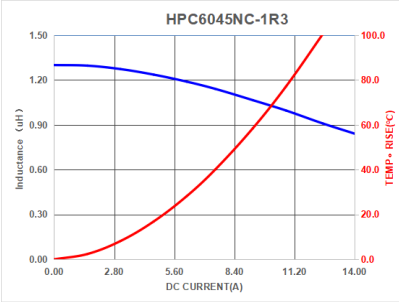


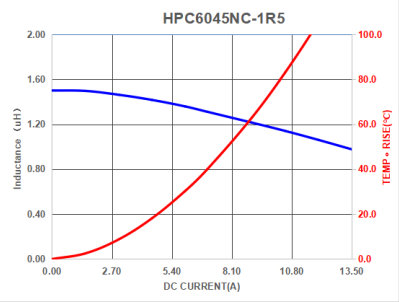


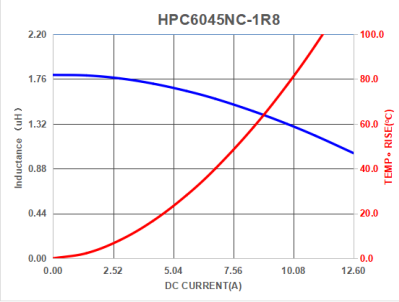


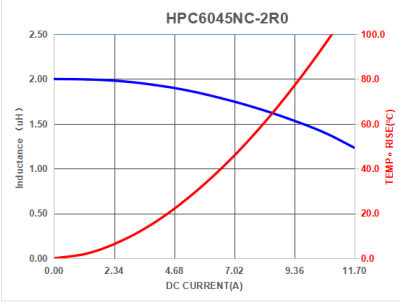


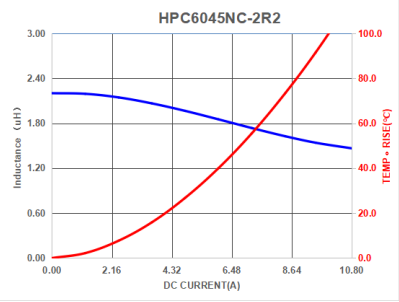


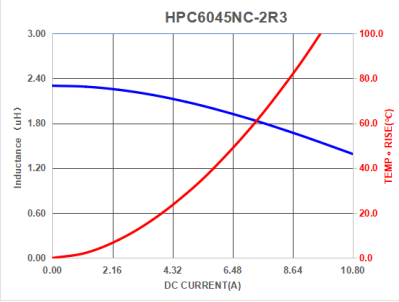


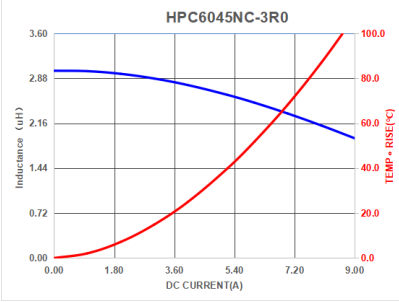


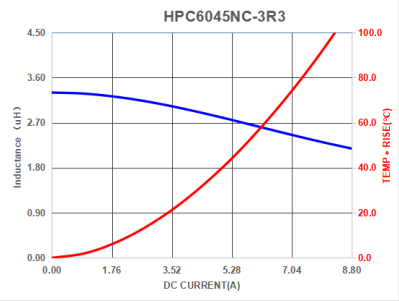


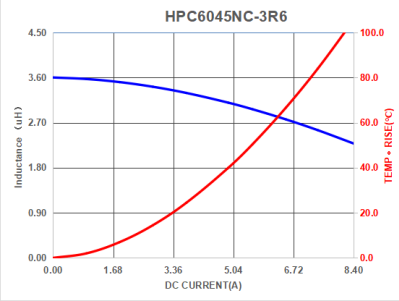


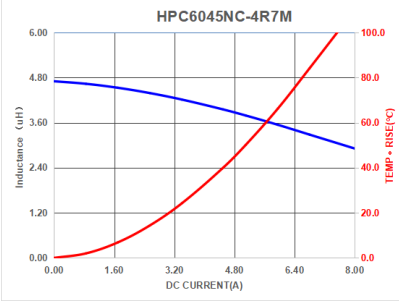


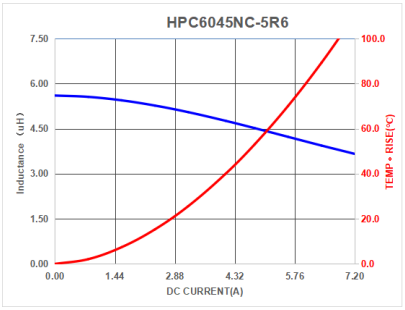


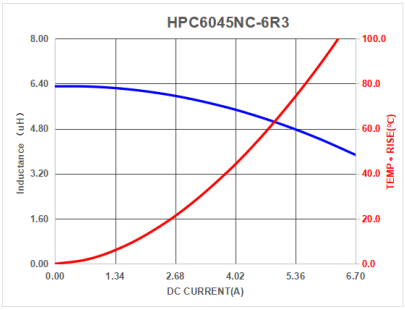


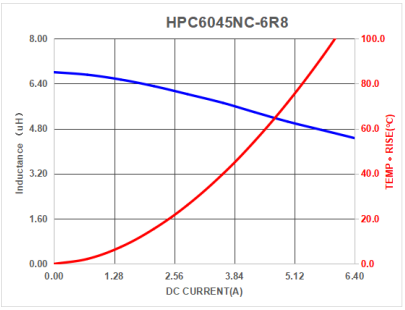


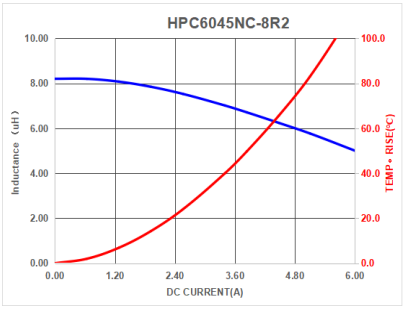


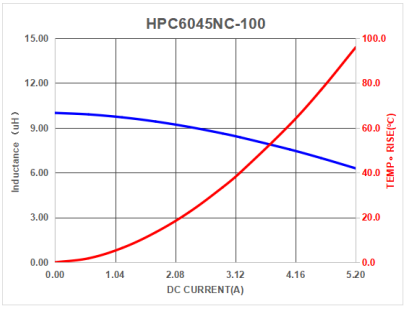


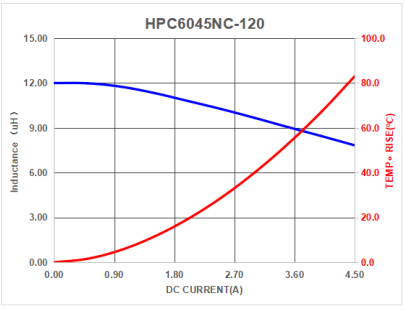

HPC6045NC-5R6
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
7.50 6.00 4.50 3.00 1.50 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 1.44 2.88 4.32 5.76 7.20

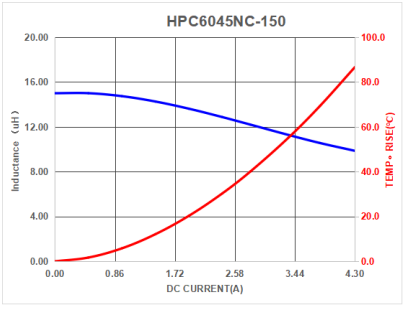

HPC6045NC-6R3
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
8.00 6.40 4.80 3.20 1.60 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 1.34 2.68 4.02 5.36 6.70

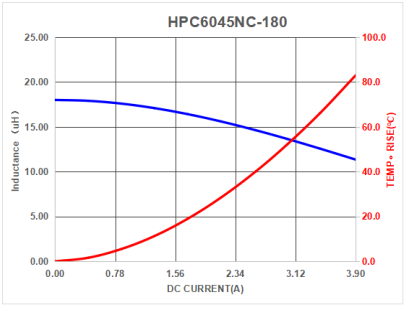

HPC6045NC-6R8
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
8.00 6.40 4.80 3.20 1.60 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 1.28 2.56 3.84 5.12 6.40

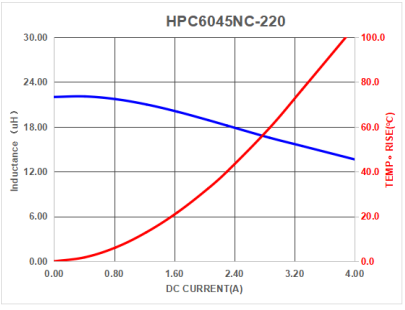

HPC6045NC-8R2
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
10.00 8.00 6.00 4.00 2.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 1.20 2.40 3.60 4.80 6.00

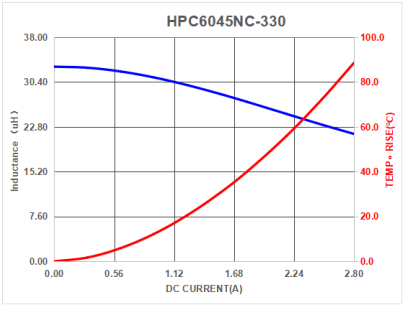

HPC6045NC-100
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
15.00 12.00 9.00 6.00 3.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 1.04 2.08 3.12 4.16 5.20

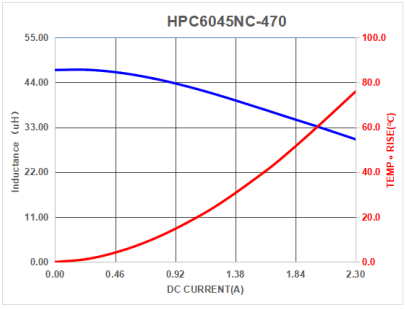

HPC6045NC-120
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
15.00 12.00 9.00 6.00 3.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.90 1.80 2.70 3.60 4.50

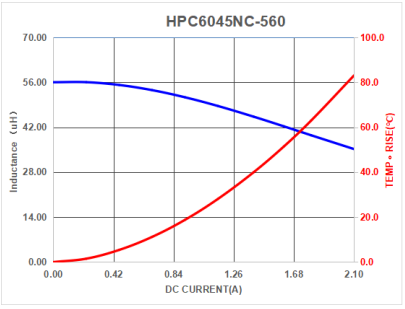

HPC6045NC-150
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
20.00 16.00 12.00 8.00 4.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.86 1.72 2.58 3.44 4.30

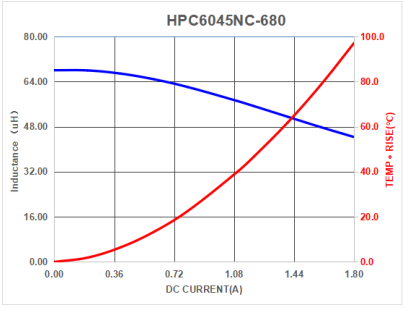

HPC6045NC-180
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
25.00 20.00 15.00 10.00 5.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.78 1.56 2.34 3.12 3.90

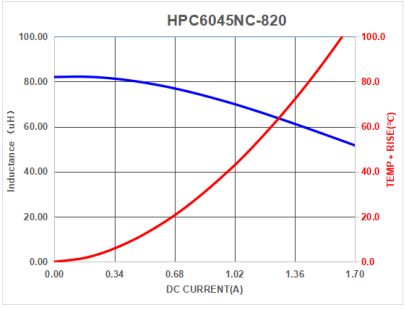

HPC6045NC-220
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
30.00 24.00 18.00 12.00 6.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.80 1.60 2.40 3.20 4.00

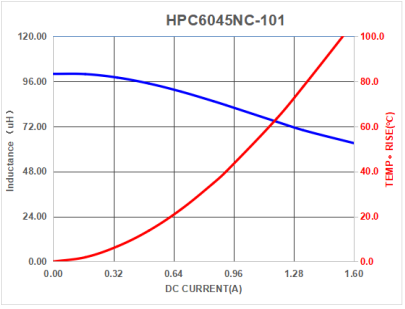

HPC6045NC-330
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
38.00 30.40 22.80 15.20 7.60 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.56 1.12 1.68 2.24 2.80

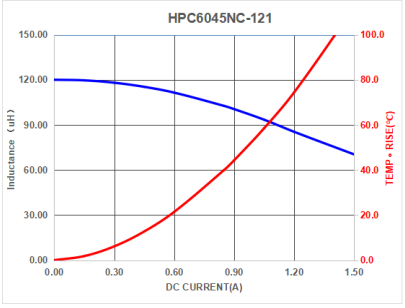

HPC6045NC-470
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
55.00 44.00 33.00 22.00 11.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.46 0.92 1.38 1.84 2.30

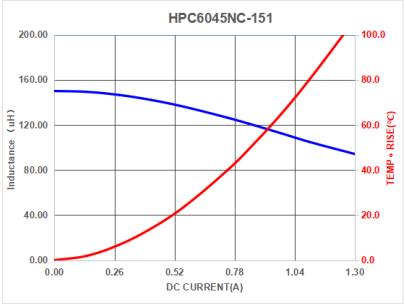

HPC6045NC-560
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
70.00 56.00 42.00 28.00 14.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.42 0.84 1.26 1.68 2.10

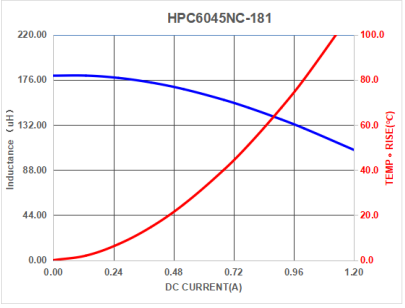

HPC6045NC-680
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
80.00 64.00 48.00 32.00 16.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.36 0.72 1.08 1.44 1.80

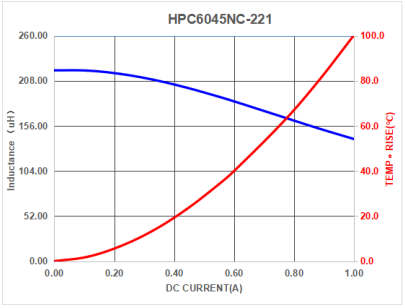

HPC6045NC-820
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
100.00 80.00 60.00 40.00 20.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.34 0.68 1.02 1.36 1.70

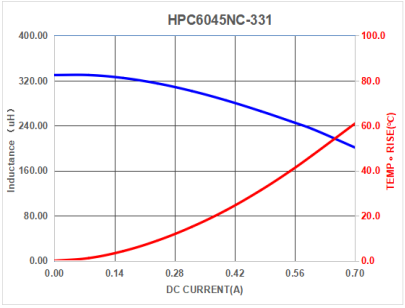

HPC6045NC-101
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
120.00 96.00 72.00 48.00 24.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.32 0.64 0.96 1.28 1.60

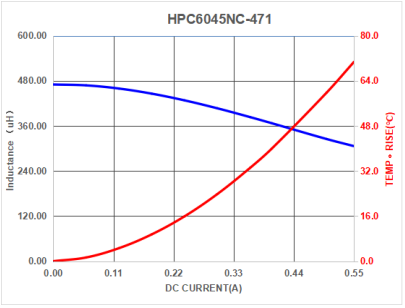

HPC6045NC-121
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
150.00 120.00 90.00 60.00 30.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.30 0.60 0.90 1.20 1.50

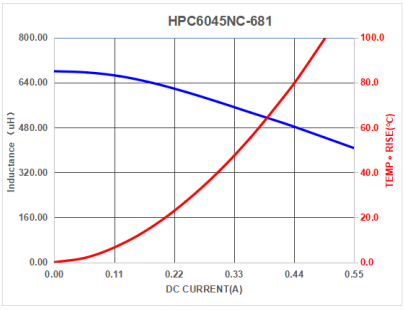

HPC6045NC-151
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
200.00 160.00 120.00 80.00 40.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.26 0.52 0.78 1.04 1.30


HPC6045NC-181
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
220.00 176.00 132.00 88.00 44.00 0.00
100.0 80.0 60.0 40.0 20.0 0.0
0.00 0.24 0.48 0.72 0.96 1.20


HPC6045NC-221
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
260.00
208.00
156.00
104.00
52.00
0.00
100.0
80.0
60.0
40.0
20.0
0.0
0.00
0.20
0.40
0.60
0.80
1.00


HPC6045NC-331
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
400.00
320.00
240.00
160.00
80.00
0.00
100.0
80.0
60.0
40.0
20.0
0.0
0.00
0.14
0.28
0.42
0.56
0.70


HPC6045NC-471
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
600.00
480.00
360.00
240.00
120.00
0.00
80.0
64.0
48.0
32.0
16.0
0.0
0.00
0.11
0.22
0.33
0.44
0.55


HPC6045NC-681
Inductance (uH)
TEMP. RISE(℃)
DC CURRENT(A)
800.00
640.00
480.00
320.00
160.00
0.00
100.0
80.0
60.0
40.0
20.0
0.0
0.00
0.11
0.22
0.33
0.44
0.55