SMD Power Inductor

TMPA0603SV-Series(N)-D

1. Features

1. Low loss realized with low DCR.
2. High performance realized by metal dust core.
3. Ultra low buzz noise, due to composite construction.
4. 100% Lead(Pb)-Free and RoHS compliant.
5. High reliability -Reliability test complied to AEC-Q200.

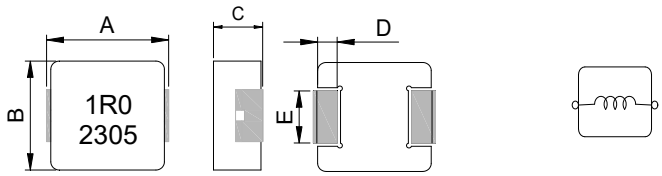
Halogen-free

RoHS

2. Applications

Automotive applications.

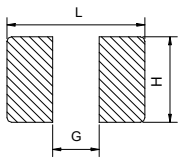
3. Dimensions



Series	A	B	C	D	E
TMPA0603	7.1±0.3	6.6±0.2	2.8±0.2	1.6±0.3	3.0±0.2

Unit:mm

Recommend PC Board Pattern



L(mm)	G(mm)	H(mm)
8.0	3.7	3.4

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	0603	SV	-	1R0	MN	-	D	-	FL
A	B	C		D	E		F		G

A: Series	
B: Dimension	BxC
C: Type	Standard. V:Vehicle
D: Inductance	1R0=1.0uH
E: Inductance Tolerance	M=±20%
F: Code	Marking: Black.1R0 and 2305 (23 YY,05 WW,follow production date).
G: Internal control	Anti-static packaging

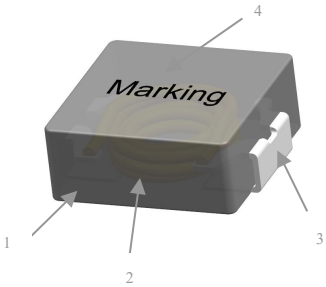
5. Specification

Part Number	Inductance L0 A(uH) ±20%	Irms (A)		I sat (A)		DCR (mΩ)		Q (Min)	SRF (MHz) Ref	Impulse Voltage
		Typ	Max	Typ	Max	Typ	Max			
TMPA0603SV-R10YN-D-FL	0.10±30%	35	30	45	40	1.1	1.3	10	187	⩾100V
TMPA0603SV-R15YN-D-FL	0.15±30%	30	25	40	36	1.7	2.1	10	160	⩾100V
TMPA0603SV-R22MN-D-FL	0.22	23	21	34	32	2	2.5	10	140	⩾100V
TMPA0603SV-R33MN-D-FL	0.33	21	20	25	22	2.8	3.4	10	95	⩾100V
TMPA0603SV-R47MN-D-FL	0.47	18	16	20	18	3.4	4.0	10	62	⩾100V
TMPA0603SV-R56MN-D-FL	0.56	16.5	15	18	16	3.9	4.5	10	57	⩾100V
TMPA0603SV-R68MN-D-FL	0.68	16	14.5	17	15	4.7	5.3	10	52	⩾100V
TMPA0603SV-1R0MN-D-FL	1.00	12	11	15	13.5	6.7	7.4	10	42	⩾100V
TMPA0603SV-1R5MN-D-FL	1.50	10	9.0	14	12	10.2	12.1	10	38	⩾100V
TMPA0603SV-2R2MN-D-FL	2.20	8	7.5	10	9.0	13.5	15	10	26	⩾100V
TMPA0603SV-3R3MN-D-FL	3.30	6.5	6.0	9.5	8.5	19	22	10	22	⩾100V
TMPA0603SV-4R7MN-D-FL	4.70	5.5	5.0	6.5	5.5	28	33	10	20	⩾100V
TMPA0603SV-5R6MN-D-FL	5.60	5.5	5.0	6.0	5.2	39	42	10	17	⩾100V
TMPA0603SV-6R8MN-D-FL	6.80	4.5	4.2	6.0	5.0	43	50	10	16	⩾100V
TMPA0603SV-8R2MN-D-FL	8.20	4.5	4.0	6.0	4.7	54	60	10	15	⩾100V
TMPA0603SV-100MN-D-FL	10.0	4.0	3.5	5.5	4.5	62	68	10	14	⩾100V
TMPA0603SV-150MN-D-FL	15.0	3.0	2.5	4.5	4.0	110	140	10	10	⩾100V
TMPA0603SV-220MN-D-FL	22.0	2.5	2.0	3.0	2.5	150	190	10	8	⩾60V
TMPA0603SV-330MN-D-FL	33.0	2.1	1.8	2.5	2.0	215	258	10	7	⩾60V
TMPA0603SV-470MN-D-FL	47.0	1.9	1.6	1.8	1.6	250	300	10	5	⩾60V

Note:

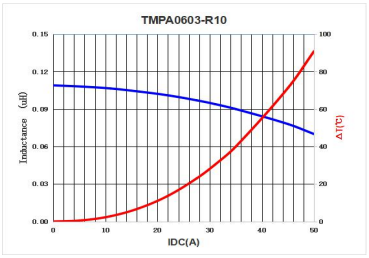
1. Test frequency : Ls : 100KHz /1.0V.
2. All test data referenced to 25℃ ambient.
3. Testing Instrument(or equ) : Agilent 4284A,E4991A,4339B,KEYSIGHT E4980A/AL,chroma3302,3250,16502.
4. Heat Rated Current (Irms) will cause the coil temperature rise approximately ΔT of 40℃
5. Saturation Current (Isat) will cause L0 to drop approximately 30%.
6. The part temperature (ambient + temp rise) should not exceed 155℃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 lower value of Irms and Isat.

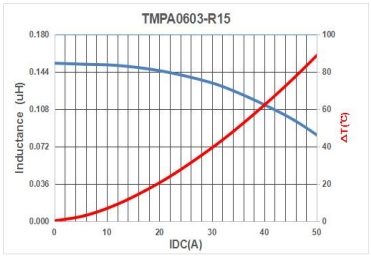
6. Material List

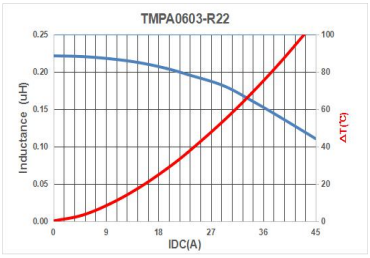


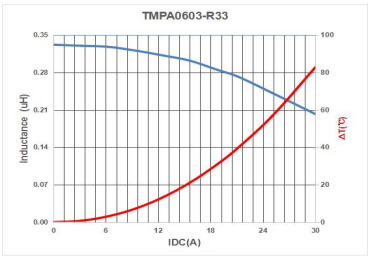
NO	Items	Materials
1	Core	Alloy Powder .
2	Wire	Polyester Wire or equivalent.
3	Clip	100% Pb free solder(Ni+Sn---Plating)
4	Ink	Halogen-free ketone

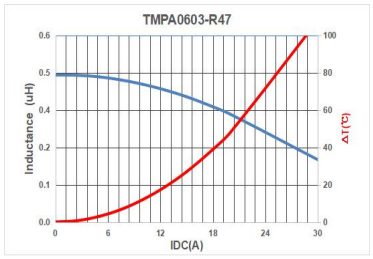
11. Typical Performance Curves

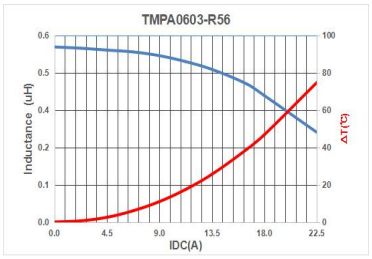


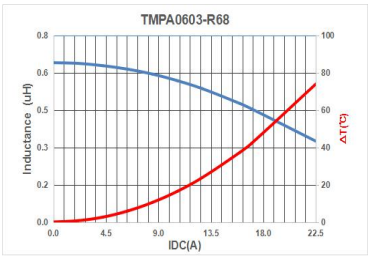


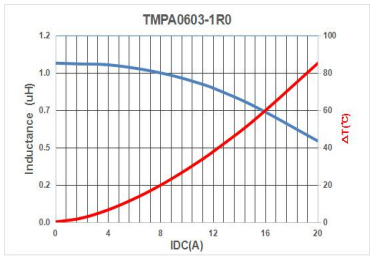


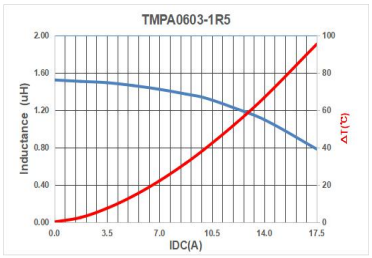


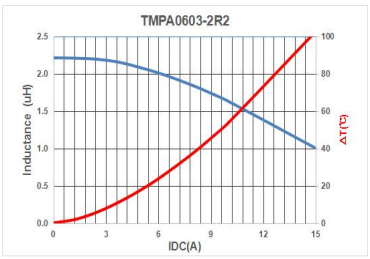


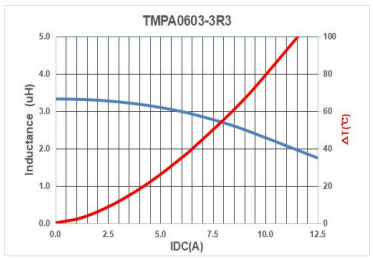


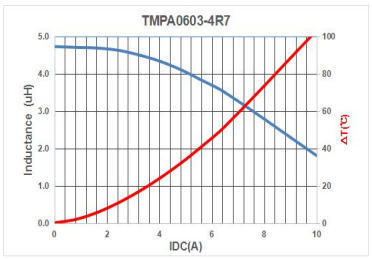


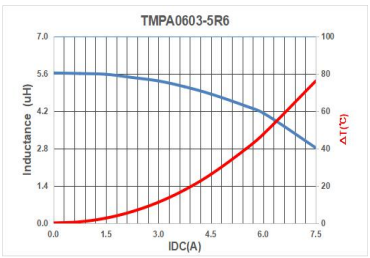


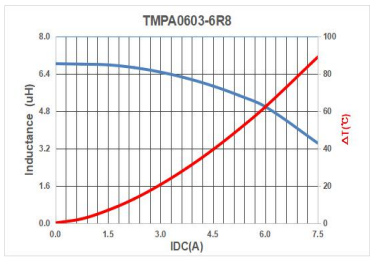


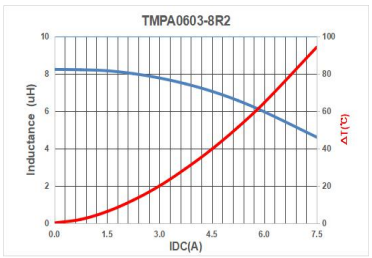


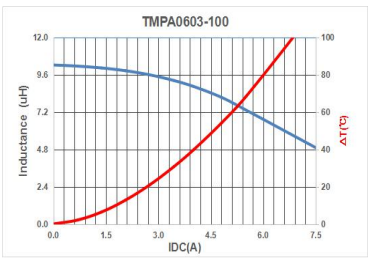


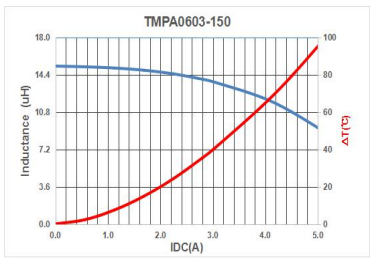


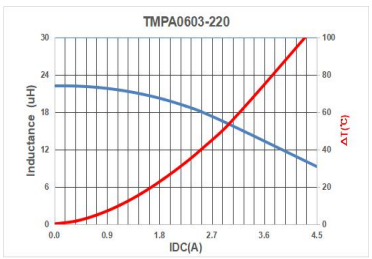


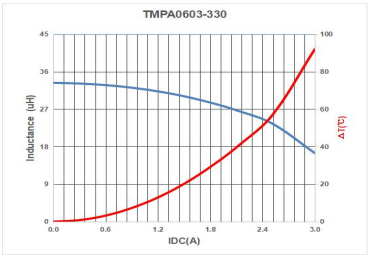


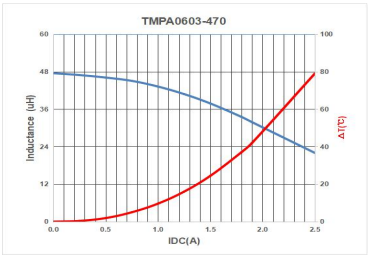









TMPA0603-330
Inductance (uH)
ΔT(℃)
IDC(A)
45
36
27
18
9
0
100
80
60
40
20
0
0.0
0.6
1.2
1.8
2.4
3.0


TMPA0603-470
Inductance (uH)
ΔT(℃)
IDC(A)
60
48
36
24
12
0
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5