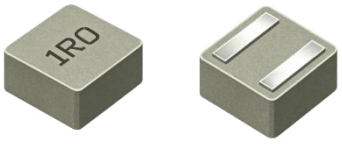
FEATURES 特征

- Metal material for large current and low loss, low DCR.
  铁合金材料，高饱和电流，低损耗，低DCR
- Low buzz noise, good magnetic shield performance.
  低噪声，磁屏蔽效果好
- Small parasitic capacitance.
  寄生电容小
- Operating Temp：-55℃~+125℃(Including self heating)
  工作温度范围:-55℃~+125℃(包括自身温度上升)

RoHS | Reach SVHC-Free | Halogen Free



APPLICATIONS 用途

- 5G Communications.
  5G 通讯
- Internet of Things.
  物联网
- Security device.
  安防设备

PART NUMBERING 产品型号

APH	0660	C	-	100	M	-	TC	D5
①	②	③		④	⑤		⑥	⑦

① Series Name	
APH	Molded SMD Power Inductors

② External Dimensions	
0420	4.1×4.1×1.9
0430	4.1×4.1×2.8
0520	5.5×5.3×1.9
0530	5.5×5.3×2.9
0550	5.5×5.3×4.8
0630	6.6×6.4×2.8/2.9
0650	6.6×6.4×4.8
0660	6.6×6.4×5.8
0720	7.8×7.6×1.85
0730	7.8×7.6×2.9
0770	7.8×7.6×6.7
0880	8.9×8.5×7.7
1031	11.9×11.0×2.9
1060	11.9×11.0×5.7
1010	11.9×11.0×9.7
1580	16.5×15.5×7.7
1510	16.5×15.5×9.7
1513	16.5×15.5×12.7

③ Feature Type
C

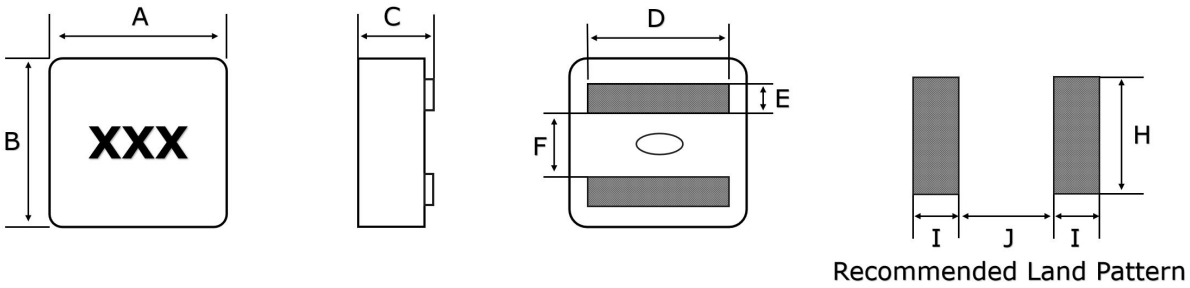
④ Inductance	
Code (example)	Nominal inductance［μH］
R10	0.1uH
1R0	1.0uH
100	10uH

⑤ Inductance Tolerance	
M	±20%

⑥ Product Type	
TC	T-Core Type

⑦ Internal Code
D5

DIMENSIONS & RECOMMENDED LAND PATTERN 尺寸及推荐焊盘



Recommended Land Pattern

Unit: mm

Dimensions							Recommended Land Pattern		
Series	A	B	C	D	E	F	I Typ.	J Typ.	H Typ.
APH0420C	4.1±0.2	4.1±0.2	1.9±0.2	3.4±0.3	0.88±0.3	1.7±0.3	1	1.4	3.8
APH0430C	4.1±0.25	4.1±0.25	2.8±0.2	3.4±0.3	0.88±0.3	1.7±0.3	1	1.4	3.8
APH0520C	5.5±0.2	5.3±0.2	1.9±0.2	4.3±0.3	1.1±0.3	2.3±0.3	1.25	2	4.7
APH0530C	5.5±0.2	5.3±0.2	2.9±0.2	4.3±0.3	1.1±0.3	2.3±0.3	1.25	2	4.7
APH0550C	5.5±0.2	5.3±0.2	4.8±0.2	4.3±0.3	1.1±0.3	2.3±0.3	1.25	2	4.7
APH0630C	6.6±0.2	6.4±0.2	2.8±0.2 (L≦1.2μH) 2.9±0.2 (L≧1.5μH)	See Spec table	1.4±0.3	2.6±0.3	1.55	2.5	5.6
APH0650C	6.6±0.2	6.4±0.2	4.8±0.2	See Spec table	1.4±0.3	2.6±0.3	1.55	2.5	5.6
APH0660C	6.6±0.2	6.4±0.2	5.8±0.2	5.3±0.3	1.4±0.3	2.6±0.3	1.55	2.5	5.6
APH0720C	7.8±0.25	7.6±0.2	1.85±0.2	See Spec table	1.75±0.3	3.15±0.3	2.3	2.8	7.2
APH0730C	7.8±0.25	7.6±0.2	2.9±0.2	See Spec table	1.75±0.3	3.15±0.3	2.3	2.8	7.2
APH0770C	7.8±0.25	7.6±0.2	6.7±0.3	See Spec table	1.75±0.3	3.15±0.3	2.5	2.8	7.2
APH0880C	8.9±0.3	8.5±0.3	7.7±0.3	See Spec table	1.8±0.3	3.5±0.5	2.65	2.7	7.8
APH1031C	11.9±0.3	11.0±0.3	2.9±0.2	9.0±0.5	2.4±0.3	4.4±0.5	3.4	3.7	11
APH1060C	11.9±0.3	11.0±0.3	5.7±0.3	See Spec table	2.4±0.3	4.5±0.5	3.4	3.7	11
APH1010C	11.9±0.3	11.0±0.3	9.7±0.3	See Spec table	2.4±0.3	4.4±0.5	3.4	3.7	11
APH1580C	16.5±0.3	15.5±0.3	7.7±0.3	13.2±0.5	3.2±0.3	7.0±0.5	4.5	6	15
APH1510C	16.5±0.3	15.5±0.3	9.7±0.3	13.2±0.5	3.2±0.3	7.0±0.5	4.5	6	15
APH1513C	16.5±0.3	15.5±0.3	12.7±0.3	13.2±0.5	3.2±0.3	7.0±0.5	4.5	6	15

ELECTRICAL CHARACTERISTICS 特性规格表

APH0420C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH0420C-R10M-TCD5	0.10±20%	2.5	33.8	38.6	13.5	18.5
APH0420C-R22M-TCD5	0.22±20%	4.6	19.4	19.9	13.0	17.3
APH0420C-R36M-TCD5	0.36±20%	6.5	14.9	16.9	11.0	14.9
APH0420C-R40M-TCD5	0.40±20%	7.73	13.9	15.9	10.0	14.4
APH0420C-R47M-TCD5	0.47±20%	8.58	13.1	14.5	9.0	12.8
APH0420C-R56M-TCD5	0.56±20%	9.3	13.0	14.3	8.5	12.3
APH0420C-R60M-TCD5	0.60±20%	9.52	12.7	14.0	8.0	12.0
APH0420C-R72M-TCD5	0.72±20%	11.9	11.0	12.3	7.6	10.8
APH0420C-1R0M-TCD5	1.0±20%	14.6	9.1	9.9	6.8	9.9
APH0420C-1R2M-TCD5	1.2±20%	17.9	8.0	9.3	6.6	9.3
APH0420C-1R5M-TCD5	1.5±20%	23.8	7.6	8.0	5.8	7.9
APH0420C-1R8M-TCD5	1.8±20%	28	7.2	7.7	5.2	7.2
APH0420C-2R2M-TCD5	2.2±20%	38.7	6.2	6.7	4.6	5.8

APH0430C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH0430C-R47M-TCD5	0.47±20%	7.26	15.6	17.4	10.0	14.4
APH0430C-R90M-TCD5	0.90±20%	10.1	9.3	10.3	8.2	11.5
APH0430C-1R0M-TCD5	1.0±20%	10.1	9.5	10.1	8.0	11.3
APH0430C-1R2M-TCD5	1.2±20%	11.5	9.0	9.5	7.8	10.1
APH0430C-1R5M-TCD5	1.5±20%	13.2	7.2	8.2	7.0	9.3
APH0430C-2R2M-TCD5	2.2±20%	22.6	6.3	7.2	6.0	8.1
APH0430C-3R3M-TCD5	3.3±20%	28.6	5.5	6.4	5.0	6.8
APH0430C-4R7M-TCD5	4.7±20%	44.1	4.2	4.7	3.9	5.3
APH0430C-6R8M-TCD5	6.8±20%	74.1	3.2	3.8	3.0	4.1

ELECTRICAL CHARACTERISTICS 特性规格表

● APH0520C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH0520C-R15M-TCD5	0.15±20%	4.6	27.6	30.8	13.9	19.3
APH0520C-R16M-TCD5	0.16±20%	4.6	27.6	30.8	13.9	19.3
APH0520C-R33M-TCD5	0.33±20%	7.3	23.6	25.1	10.5	14.8
APH0520C-R47M-TCD5	0.47±20%	8.05	20.6	22.6	10.1	14.5
APH0520C-R56M-TCD5	0.56±20%	9.54	16.6	19.4	9.9	14.3
APH0520C-R68M-TCD5	0.68±20%	10.2	14.4	16.4	9.6	13.8
APH0520C-R80M-TCD5	0.80±20%	11.8	13.9	15.9	9.4	13.4
APH0520C-R82M-TCD5	0.82±20%	12.7	13.4	15.3	8.5	12.3
APH0520C-1R0M-TCD5	1.0±20%	13.8	13.2	14.8	7.5	10.8
APH0520C-1R2M-TCD5	1.2±20%	16.3	12.6	14.3	6.8	9.7
APH0520C-1R5M-TCD5	1.5±20%	18.7	10.9	11.8	6.4	9.1

● APH0530C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH0530C-R15M-TCD5	0.15±20%	2.31	33.3	36.8	14.3	22.8
APH0530C-R16M-TCD5	0.16±20%	2.33	32.8	35.8	14.2	22.8
APH0530C-R33M-TCD5	0.33±20%	3.52	26.0	28.0	13.8	19.2
APH0530C-R47M-TCD5	0.47±20%	4.13	24.6	26.6	13.7	18.9
APH0530C-R56M-TCD5	0.56±20%	4.52	20.8	22.8	13.6	18.2
APH0530C-R60M-TCD5	0.60±20%	4.52	20.1	21.4	13.6	18.2
APH0530C-R80M-TCD5	0.80±20%	5.65	18.6	20.4	10.1	13.5
APH0530C-R82M-TCD5	0.82±20%	5.78	18.2	20.1	9.9	13.2
APH0530C-1R0M-TCD5	1.0±20%	7.6	14.7	16.9	9.0	12.5
APH0530C-1R2M-TCD5	1.2±20%	9.7	13.9	15.3	8.5	11.3
APH0530C-1R5M-TCD5	1.5±20%	11.2	12.9	14.3	8.0	10.8
APH0530C-1R8M-TCD5	1.8±20%	12.7	11.7	12.6	7.6	10.4
APH0530C-2R2M-TCD5	2.2±20%	14.5	9.3	10.3	7.2	10.0
APH0530C-3R3M-TCD5	3.3±20%	23.1	9.0	9.8	5.9	8.4
APH0530C-4R7M-TCD5	4.7±20%	36.3	7.2	8.5	4.3	6.1

ELECTRICAL CHARACTERISTICS 特性规格表

● APH0550C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH0550C-5R6M-TCD5	5.6±20%	24.2	7.4	8.9	5.3	7.4
APH0550C-6R8M-TCD5	6.8±20%	28.6	6.8	8.0	4.8	6.6
APH0550C-8R2M-TCD5	8.2±20%	32.5	6.3	7.4	4.6	6.3
APH0550C-100M-TCD5	10±20%	43	5.6	6.7	3.8	5.2
APH0550C-150M-TCD5	15±20%	76.7	3.2	3.7	3.0	3.9
APH0550C-220M-TCD5	22±20%	99.65	3.0	3.6	2.5	3.4

● APH0630C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current		D(mm)
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.	
Units	uH	mΩ	A		A		
Symbol	L	DCR	Isat		Irms		
APH0630C-R18M-TCD5	0.18±20%	1.75	36.8	41.0	24.0	32.6	5.3±0.3
APH0630C-R33M-TCD5	0.33±20%	2.5	28.6	32.8	20.0	25.6	5.55±0.3
APH0630C-R56M-TCD5	0.56±20%	3.31	25.1	28.6	17.0	22.6	5.3±0.3
APH0630C-R68M-TCD5	0.68±20%	5.17	21.6	25.6	15.0	20.5	5.3±0.3
APH0630C-1R0M-TCD5	1.0±20%	6.05	18.6	23.6	13.0	18.5	5.2±0.3
APH0630C-1R2M-TCD5	1.2±20%	7.4	16.6	22.6	12.0	16.5	5.15±0.3
APH0630C-1R5M-TCD5	1.5±20%	9.13	16.1	20.4	11.0	15.4	5.15±0.3
APH0630C-1R8M-TCD5	1.8±20%	10.2	13.4	14.5	10.0	14.4	5.1±0.3
APH0630C-2R2M-TCD5	2.2±20%	12.2	11.4	16.3	7.0	10.3	5.05±0.3
APH0630C-3R3M-TCD5	3.3±20%	20.8	9.3	12.5	6.0	8.3	5±0.3
APH0630C-4R5M-TCD5	4.5±20%	25.3	8.3	9.3	5.0	7.2	5±0.3

ELECTRICAL CHARACTERISTICS 特性规格表

● APH0650C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current		D(mm)
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.	
Units	uH	mΩ	A		A		
Symbol	L	DCR	Isat		Irms		
APH0650C-R82M-TCD5	0.82±20%	4.18	20.6	24.6	16.0	21.6	5.3±0.3
APH0650C-1R0M-TCD5	1.0±20%	4.52	18.6	23.6	15.0	20.5	5.3±0.3
APH0650C-1R2M-TCD5	1.2±20%	5.83	16.6	21.4	14.0	18.5	5.3±0.3
APH0650C-1R5M-TCD5	1.5±20%	6.3	14.9	19.9	13.0	17.5	5.3±0.3
APH0650C-1R8M-TCD5	1.8±20%	7.1	13.9	18.9	12.0	16.5	5.3±0.3
APH0650C-2R2M-TCD5	2.2±20%	8.5	12.4	16.4	10.0	13.4	5.2±0.3
APH0650C-3R3M-TCD5	3.3±20%	12.5	10.4	12.8	8.5	11.3	5.2±0.3
APH0650C-4R3M-TCD5	4.3±20%	16.2	8.8	11.3	7.0	9.3	5.2±0.3
APH0650C-4R7M-TCD5	4.7±20%	18.4	8.3	10.8	6.5	8.8	5.2±0.3

● APH0660C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH0660C-1R0M-TCD5	1.0±20%	4.4	19.6	24.6	16.0	21.6
APH0660C-1R5M-TCD5	1.5±20%	6.1	15.6	20.4	13.5	18.0
APH0660C-2R2M-TCD5	2.2±20%	8.1	12.9	16.9	11.0	14.4
APH0660C-3R3M-TCD5	3.3±20%	12.3	11.4	13.3	9.0	12.3
APH0660C-4R7M-TCD5	4.7±20%	14.4	9.6	10.8	8.5	11.3
APH0660C-5R6M-TCD5	5.6±20%	15.9	9.0	10.2	7.6	10.3
APH0660C-6R8M-TCD5	6.8±20%	20.8	8.4	9.5	7.0	9.3
APH0660C-8R2M-TCD5	8.2±20%	26.4	8.3	8.7	6.0	8.3
APH0660C-100M-TCD5	10±20%	29.82	7.0	7.8	5.0	7.2
APH0660C-150M-TCD5	15±20%	43.75	5.2	6.0	4.5	6.2
APH0660C-220M-TCD5	22±20%	60.63	5.0	5.8	3.8	5.2

ELECTRICAL CHARACTERISTICS 特性规格表

● APH0720C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current		D(mm)
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.	
Units	uH	mΩ	A		A		
Symbol	L	DCR	Isat		Irms		
APH0720C-R27M-TCD5	0.27±20%	3.5	32.8	35.8	16.0	21.6	6.6±0.3
APH0720C-R31M-TCD5	0.31±20%	4.8	31.8	34.8	14.0	20.5	6.2±0.3
APH0720C-R33M-TCD5	0.33±20%	4.8	31.8	34.8	13.0	19.5	6.2±0.3
APH0720C-R47M-TCD5	0.47±20%	6.2	25.6	28.6	12.0	17.5	6.2±0.3
APH0720C-R68M-TCD5	0.68±20%	9.2	23.6	25.6	10.0	13.4	6.2±0.3
APH0720C-1R0M-TCD5	1.0±20%	10.8	20.6	23.6	8.0	11.3	6.2±0.3

● APH0730C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current		D(mm)
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.	
Units	uH	mΩ	A		A		
Symbol	L	DCR	Isat		Irms		
APH0730C-1R0M-TCD5	1.0±20%	5	28.6	30.8	16.1	22.4	6.6±0.3
APH0730C-1R5M-TCD5	1.5±20%	8.25	24.1	25.6	12.0	15.8	6.6±0.3
APH0730C-2R2M-TCD5	2.2±20%	13.7	17.6	19.4	10.0	13.4	6.2±0.3
APH0730C-2R7M-TCD5	2.7±20%	15.4	13.9	16.4	9.2	11.7	6.2±0.3
APH0730C-3R3M-TCD5	3.3±20%	18	13.4	15.3	8.0	10.3	6.2±0.3
APH0730C-4R7M-TCD5	4.7±20%	26.7	12.4	13.3	6.9	9.3	6.2±0.3
APH0730C-5R6M-TCD5	5.6±20%	33.2	11.9	12.8	5.3	7.5	6.2±0.3
APH0730C-6R8M-TCD5	6.8±20%	42.5	11.4	12.3	4.5	7.0	6.2±0.3
APH0730C-8R2M-TCD5	8.2±20%	48.73	9.3	10.5	3.0	6.1	6.2±0.3

● APH0770C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current		D(mm)
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.	
Units	uH	mΩ	A		A		
Symbol	L	DCR	Isat		Irms		
APH0770C-1R0M-TCD5	1.0±20%	2.81	32.6	35.6	20.0	25.6	6.7±0.3
APH0770C-1R8M-TCD5	1.8±20%	4.46	23.6	25.6	15.8	21.6	6.7±0.3
APH0770C-3R3M-TCD5	3.3±20%	9.42	15.7	19.8	11.5	15.6	6.7±0.3
APH0770C-4R7M-TCD5	4.7±20%	13.5	13.9	15.5	10.5	14.0	6.7±0.3
APH0770C-6R8M-TCD5	6.8±20%	19.6	11.4	13.1	7.0	9.8	6.5±0.3

ELECTRICAL CHARACTERISTICS 特性规格表

● APH0880C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current		D(mm)
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.	
Units	uH	mΩ	A		A		
Symbol	L	DCR	Isat		Irms		
APH0880C-1R8M-TCD5	1.8±20%	4	24.6	28.6	18.0	24.6	7.2±0.3
APH0880C-2R2M-TCD5	2.2±20%	4.3	22.6	25.6	16.0	22.1	7.2±0.3
APH0880C-3R3M-TCD5	3.3±20%	7.3	20.6	23.6	13.5	18.5	6.9±0.3
APH0880C-4R7M-TCD5	4.7±20%	9.8	15.6	16.9	10.5	15.0	6.9±0.3
APH0880C-6R8M-TCD5	6.8±20%	14.3	12.9	14.8	8.0	11.6	6.9±0.3
APH0880C-100M-TCD5	10±20%	22.9	10.4	11.3	6.6	9.0	6.9±0.3

● APH1031C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH1031C-R28M-TCD5	0.28±20%	1.6	59.0	66.0	25.5	35.8
APH1031C-R56M-TCD5	0.56±20%	2.75	39.8	45.0	23.0	32.6
APH1031C-R82M-TCD5	0.82±20%	4.1	32.8	38.8	18.0	25.6
APH1031C-R90M-TCD5	0.90±20%	4.2	31.8	36.8	17.0	24.6
APH1031C-1R0M-TCD5	1.0±20%	4.95	30.6	35.8	16.0	23.6
APH1031C-1R5M-TCD5	1.5±20%	6.6	25.6	30.8	12.0	18.5

● APH1060C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current		D(mm)
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.	
Units	uH	mΩ	A		A		
Symbol	L	DCR	Isat		Irms		
APH1060C-R68M-TCD5	0.68±20%	1.5	51.0	56.0	22.5	34.8	9.5±0.5
APH1060C-1R0M-TCD5	1.0±20%	2.32	45.0	49.0	20.0	29.1	9±0.5
APH1060C-1R2M-TCD5	1.2±20%	2.64	41.0	46.0	18.0	27.1	9±0.5
APH1060C-1R5M-TCD5	1.5±20%	3.3	36.8	41.0	16.0	25.1	9±0.5
APH1060C-2R2M-TCD5	2.2±20%	4.84	30.6	35.8	14.0	20.5	9±0.5
APH1060C-3R3M-TCD5	3.3±20%	7.7	25.6	28.6	11.4	17.3	9±0.5
APH1060C-4R7M-TCD5	4.7±20%	10.72	22.6	25.6	8.7	14.4	9±0.5

ELECTRICAL CHARACTERISTICS 特性规格表

● APH1010C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current		D(mm)
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.	
Units	uH	mΩ	A		A		
Symbol	L	DCR	Isat		Irms		
APH1010C-2R2M-TCD5	2.2±20%	2.8	29.6	34.8	24.5	32.6	9.3±0.5
APH1010C-3R3M-TCD5	3.3±20%	4.1	24.0	28.0	18.2	25.6	9.3±0.5
APH1010C-4R7M-TCD5	4.7±20%	5.7	22.0	26.0	17.5	24.6	9.3±0.5
APH1010C-5R6M-TCD5	5.6±20%	7.2	20.2	24.2	15.7	21.8	9.3±0.5
APH1010C-6R8M-TCD5	6.8±20%	8.9	19.1	22.4	14.0	19.0	9±0.5
APH1010C-8R2M-TCD5	8.2±20%	12.4	16.9	18.7	12.9	17.6	9±0.5
APH1010C-100M-TCD5	10±20%	13.75	15.2	17.9	11.5	16.0	9±0.5
APH1010C-150M-TCD5	15±20%	19.3	12.9	15.3	9.9	14.2	9±0.5

● APH1580C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH1580C-2R0M-TCD5	2.0±20%	2.21	53.0	58.0	29.5	40.8
APH1580C-2R2M-TCD5	2.2±20%	2.48	50.0	56.0	28.0	37.8
APH1580C-3R0M-TCD5	3.0±20%	3	42.0	47.0	26.0	35.3
APH1580C-4R2M-TCD5	4.2±20%	4.68	33.8	38.8	20.5	27.6
APH1580C-5R3M-TCD5	5.3±20%	5.34	31.8	35.8	19.5	26.6
APH1580C-6R2M-TCD5	6.2±20%	6.5	31.8	34.8	17.0	23.6
APH1580C-7R2M-TCD5	7.2±20%	7.2	29.6	32.8	15.0	21.6
APH1580C-8R2M-TCD5	8.2±20%	7.92	25.6	28.6	13.0	19.5
APH1580C-100M-TCD5	10±20%	9.6	21.6	24.6	11.0	16.5
APH1580C-150M-TCD5	15±20%	15	18.6	21.4	10.0	13.4
APH1580C-220M-TCD5	22±20%	23.2	16.6	19.4	9.0	12.3

ELECTRICAL CHARACTERISTICS 特性规格表

- APH1510C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH1510C-4R7M-TCD5	4.7±20%	3.8	39.8	44.0	22.0	30.6
APH1510C-5R6M-TCD5	5.6±20%	4.2	34.8	38.8	21.0	28.6
APH1510C-6R8M-TCD5	6.8±20%	4.6	31.8	36.8	20.0	26.6
APH1510C-8R2M-TCD5	8.2±20%	7.2	28.6	32.8	19.0	25.6
APH1510C-100M-TCD5	10±20%	8.6	24.1	27.1	16.0	22.6
APH1510C-150M-TCD5	15±20%	11.5	18.6	20.4	14.0	18.5
APH1510C-220M-TCD5	22±20%	15.8	16.6	18.4	10.5	14.6
APH1510C-330M-TCD5	33±20%	20	14.4	17.1	8.6	12.6

- APH1513C-TCD5 Series

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,0.1V	Max.	Max.	Typ.	Max.	Typ.
Units	uH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
APH1513C-4R7M-TCD5	4.7±20%	3.3	41.0	45.0	23.0	31.6
APH1513C-5R6M-TCD5	5.6±20%	3.9	35.8	41.0	22.0	29.6
APH1513C-6R8M-TCD5	6.8±20%	4.2	32.8	37.8	21.0	27.6
APH1513C-8R2M-TCD5	8.2±20%	5.74	29.6	33.8	20.0	26.6
APH1513C-100M-TCD5	10±20%	7	27.6	30.8	19.0	25.6
APH1513C-150M-TCD5	15±20%	7.5	21.6	26.1	16.0	22.6
APH1513C-220M-TCD5	22±20%	13.86	19.6	22.6	12.0	17.5
APH1513C-330M-TCD5	33±20%	22.2	16.6	19.4	9.0	14.4

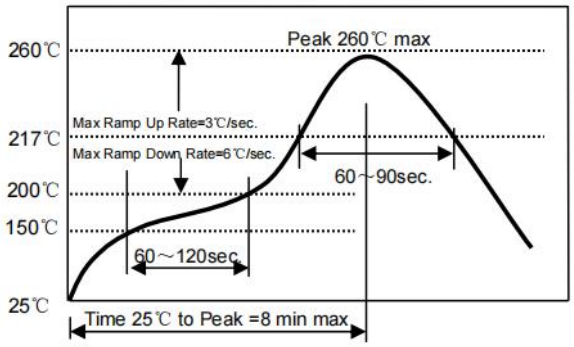
- Rated current: Isat or Irms, whichever is smaller.
- Isat: DC current at which the inductance drops by approximately 35% from its value without current.
- Irms: DC current that causes the temperature rise (ΔT=40°C) from 20°C ambient.
- The part temperature (ambient + temp rise) should not exceed 125℃ under the worst case operating condition. Circuit design, component,PCB trace size and thickness airflow and other cooling provisions all could affect the part temperature. Part temperature should be verified in the end application.
- Absolute maximum voltage 30VDc, if continuous working voltage exceeds 30VDC, please consult our factory for high voltage series products.

RELIABILITY TEST 可靠性试验

Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	1. No case deformation or change in visual 2. New solder coverage More than 95%	1.Preheat：155℃±5℃ ，60S±2S 2.Tin: lead-free. 3.Temperature:240℃±5℃，flux 3.0S±0.5S.
Mechanical shock	1. No case deformation or change in visual 2. △L/Lo≦±10%	1. Acceleration： 100G 2. Pulse time:：6ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions
Mechanical vibration	1. No case deformation or change in visual 2. △L/Lo≦±10%	1. Reflow: 2times 2. Frequency: 10HZ～50HZ～10HZ，20 Min/Cycles 3. Amplitude: 1.52 mm±10% 4. Directions: X,Y,Z 5. Time: 12 cycle / direction
Endurance Reliability		
Item	Specification and Requirement	Test Method
Thermal Shock	Inductance change: Within ± 10% Without distinct damage in visual	1. First -55℃ for 30 minutes，last 125℃ for 30 minutes as 1 cycle. Go through 1000 cycles. 2. Max transfer time is 3 minutes. 3. Measured at room temperature after placing for 24±2 hours.
Biased Humidity	Inductance change: Within ± 10% Without distinct damage in visual	1.Reflow 2 times, 2.85℃±3℃,85%±3%RH,1000 hours. 3.Measured at room temperature after placing for 24±2 hours
Low temperature storage	Inductance change: Within ± 10% Without distinct damage in visual	1. Temperature：-55 ± 2℃ 2. Time：1000 hours 3. Measured at room temperature after placing for 24±2 hours
High temperature storage	Inductance change: Within ± 10% Without distinct damage in visual	1. Temperature：+125 ± 2℃ 2. Time：1000 hours 3. Measured at room temperature after placing for 24±2 hours

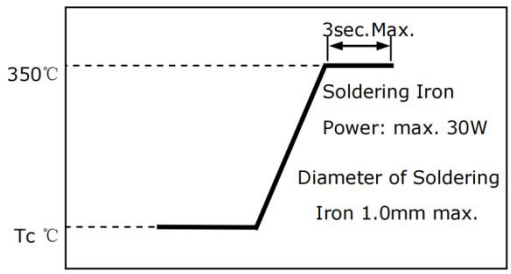
RECOMMENDED SOLDERING TECHNOLOGIES 焊接工艺建议

- Reflowing Profile.
- ☆ Preheat condition: 150~200℃/60~120sec.
- ☆ Allowed time above 217℃: 60~90sec.
- ☆ Max temp: 260℃.
- ☆ Max time at max temp: 10sec.
- ☆ Solder paste: Sn/3.0Ag/0.5Cu.
- ☆ Allowed Reflow time: 2x max.



☆ Note: The reflow profile in the above table is only for qualification and is not meant to specify board assembly profiles. Actual board assembly profiles must be based on the customer's specific board design,solder paste and process, and should not exceed the parameters as the Reflow profile shows.

- Iron Soldering Profile.
- ☆ Iron soldering power: Max.30W
- ☆ Pre-heating: 150 ℃ / 60sec.
- ☆ Soldering Tip temperature: 350℃Max.
- ☆ Soldering time: 3sec Max.
- ☆ Solder paste: Sn/3.0Ag/0.5Cu.
- ☆ Max.1 times for iron soldering



☆ Note: Take care not to apply the tip of the soldering iron to the terminal electrodes.

PRECAUTIONS ON USE 使用注意事项

- Precautions on Use.

☆ 1.Always wear static control bands to protect against ESD.
☆ 2.Any devices used with the products (soldering irons, measuring instruments) should be properly grounded.
☆ 3.Keep bare hands and metal conductors (i.e., metal desk) away from electrodes or conductive areas that lead to electrodes.
☆ 4.Preheat when soldering.
☆ 5.Don't apply current in excess of the rated current value. It may reduce the impedance or inductance,or cause damage to components due to over-current.
☆ 6.For magnetic products, keep clear of anything that may generate magnetic fields such as speakers and coils. Use non-magnetic tweezers when handing the chips.
☆ 7.When soldering, the electrical characteristics may be varied due to hot energy and mechanical stress.
☆ 8.When coating products with resin, the relatively high resin curing stress may change the electrical characteristics. For exterior coating, select resin carefully so that electrical and mechanical performance of the product is not affected. Before using, please evaluate reliability with the product mounted in your application set.
☆ 9.When mount chips with adhesive in preliminary assembly, do appropriate check before the soldering stage, i.e., the size of land pattern, type of adhesive, amount applied, hardening of the adhesive on proper usage and amounts of adhesive to use.
☆ 10.Mounting density: Add special attention to radiating heat of products when mounting other components nearby. The excessive heat by other products may cause deterioration at joint of this product with substrate.
☆ 11.Since some products are constructed like an open magnetic circuit, narrow spacing between components may cause magnetic coupling.
☆ 12.Please do not give the product any excessive mechanical shocks in transportation.
☆ 13.Please do not touch wires by sharp terminals such as tweezers to avoid causing any damage to wires.
☆ 14.Please do not add any shock and power to the soldered product to avoid causing any damage to chip body.
☆ 15.Please do not touch the electrodes by naked hand as the solderability of the external electrodes may deteriorate by grease or oil on the skin.
☆ 16.Avoid ultrasonic processing, which may cause component falling off and poor pad contact.
☆ 17.When using APV products, customers should record the production batch number for traceability.

SAFETY REMINDERS 注意事项

SAFETY REMINDERS

● All products listed in this specification are developed, designed and intended for use in general electronics equipment. The products are not designed or Warranted to meet the requirements of the applications listed below, whose performance and/or quality require especially high reliability, or whose failure, malfunction or trouble might directly cause damage to society, person, or property. Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below. Please contact us for more details if you intend to use our products in the following applications.

☆ 1.Aerospace/aviation equipment

☆ 2.Transportation equipment (cars, electric trains, ships, etc.)

☆ 3.Medical equipment

☆ 4.Power-generation control equipment

☆ 5.Atomic energy-related equipment

☆ 6.Seabed equipment

☆ 7.Transportation control equipment

☆ 8.Public information-processing equipment

☆ 9.Military equipment

☆ 10.Electric heating apparatus, burning equipment

☆ 11.Disaster prevention/crime prevention equipment

☆ 12.Safety equipment

☆ 13.Other applications that are not considered general-purpose applications

● When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.