SPECIFICATION FOR APPROVAL

CUSTOMER: _____ FILE NO.: _____

CUSTOMER P/N: _____

DESCRIPTION: SMD TYPE MOLDING POWER INDUCTOR

PART NO: YSPI1050-680M

DATE: 2025年1月18日 REVISION: A

SPECIFICATION ACCEPTED BY:	
DRAWN BY	刘娟
CHECKED BY	薛德东
APPROVED BY	张伟波

CUSTOMER CONFIRMATION	
Engineering Department	
Quality Department	
Purchasing department	

Note: if the customer does not sign back but has a formal order, it will be regarded as formal approval.

SPECIFICATION FOR APPROVAL

CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 1 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

Change Record:

CHANGE DATE	CHANGE WRITING	MODIFY PERSON	REVISION
2025/1/18	New revision	薛德东	A
	Following Blank		

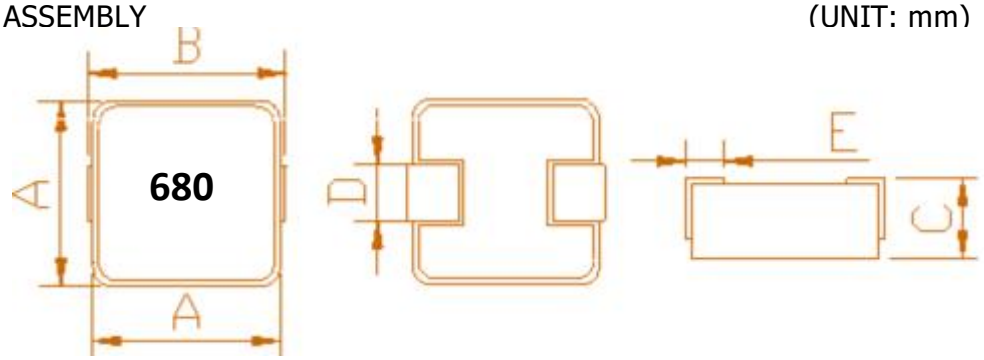
APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟

SPECIFICATION FOR APPROVAL

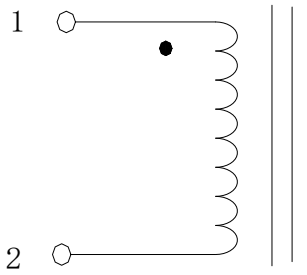
CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 2 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

1. DRAWING

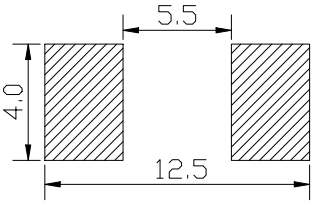
ASSEMBLY (UNIT: mm)



SCHEMATICS



SUGGESTED PCB LAYOUT



CODE	A	B	C	D	E
DIMENSION	10.0±0.3	11.0±0.3	5.0MAX	3.0±0.1	2.0±0.5

2. ELECTRICAL CHARACTERISTICS @25℃

ITEM	SPEC. RANGE	TEST CONDITION	TEST INSTRUMENTS
L_0(μH)	68*(1±20%)	100KHz/1.0V	Microtest 6377
IDC(A)	2.7A		Microtest 6377
Isat(A)	3.8A		Microtest 6220
DCR(mΩ)	140MAX		Microtest 4210

3. GENERAL SPECIFICATION

a. Rating DC current: Temperature rise(△T) is 40℃ approximately at IDC.
b. Saturation DC current: Inductance drop approximately 30% of L_0 at Isat.
c. Storage temp.: -40℃ ~ 85℃
d. Storage R.H.: 30% ~ 70%
e. Operating temp.: -25℃~ +125℃
f. Resistance to solder heat: 260℃/10 secs.

APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟

SPECIFICATION FOR APPROVAL

CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 3 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

4.1 TEST DATA OF ELECTRICAL CHARACTERISTIC

TEST ITEM	L_0	Temperature rise	L_{Isat}	DCR	
	(μH)	(℃)	(μH)	(mΩ)	
CON.	100KHz/1V	IDC2.7A	Isat3.8A	At 25℃	
SPEC.	68*(1±20%)	△T 40℃	Drop 30 %	140MAX	
1	68.00	27.3	48.21	135.96	
2	69.00	25.8	48.84	135.55	
3	71.25	28.6	49.64	135.60	
4	70.18	28.4	49.19	135.64	
5	68.63	29.6	47.86	135.57	
6	65.90	28.7	47.60	135.42	
7	67.18	26.7	47.61	135.71	
8	65.30	29.4	47.33	135.69	
9	70.68	29.4	49.28	135.74	
10	64.68	27.6	46.79	135.66	
X	68.080	28.15	48.235	135.654	
R	6.57	3.80	2.85	0.54	

TEST INSTRUMENTS

☐PRECISION LCR METER	Microtest 6377
☐BIAS CURRENT SOURCE	Microtest 6377,Microtest 6200
☐AUTOMATIC COMPONENT ANALYZER	Microtest 7703
☐LCR METER	Microtest 6377
☐OHM METER	Microtest 4210

APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟

SPECIFICATION FOR APPROVAL

CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 4 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

4.2 TEST DATA OF DIMENSIONS

CODE	A	B	C	D	E		
	(mm)	(mm)	(mm)	(mm)	(mm)		
SPEC.	10.0±0.3	11.0±0.3	5.0MAX	3.0±0.1	2.0±0.5		
1	10.07	11.07	4.78	3.01	2.12		
2	10.10	11.10	4.75	3.01	2.17		
3	10.09	11.05	4.82	3.01	2.15		
4	10.08	11.04	4.88	3.01	2.13		
5	10.10	11.11	4.76	3.01	2.12		
6	10.07	11.07	4.75	3.01	2.14		
7	10.08	11.07	4.82	3.01	2.16		
8	10.07	11..18	4.92	3.01	2.13		
9	10.08	11.14	4.80	3.01	2.13		
10	10.07	11.09	4.79	3.01	2.16		
X	10.081	11.08	4.807	3.01	2.141		
R	0.03	0.10	0.17	0.00	0.05		

APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟

SPECIFICATION FOR APPROVAL

CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 5 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

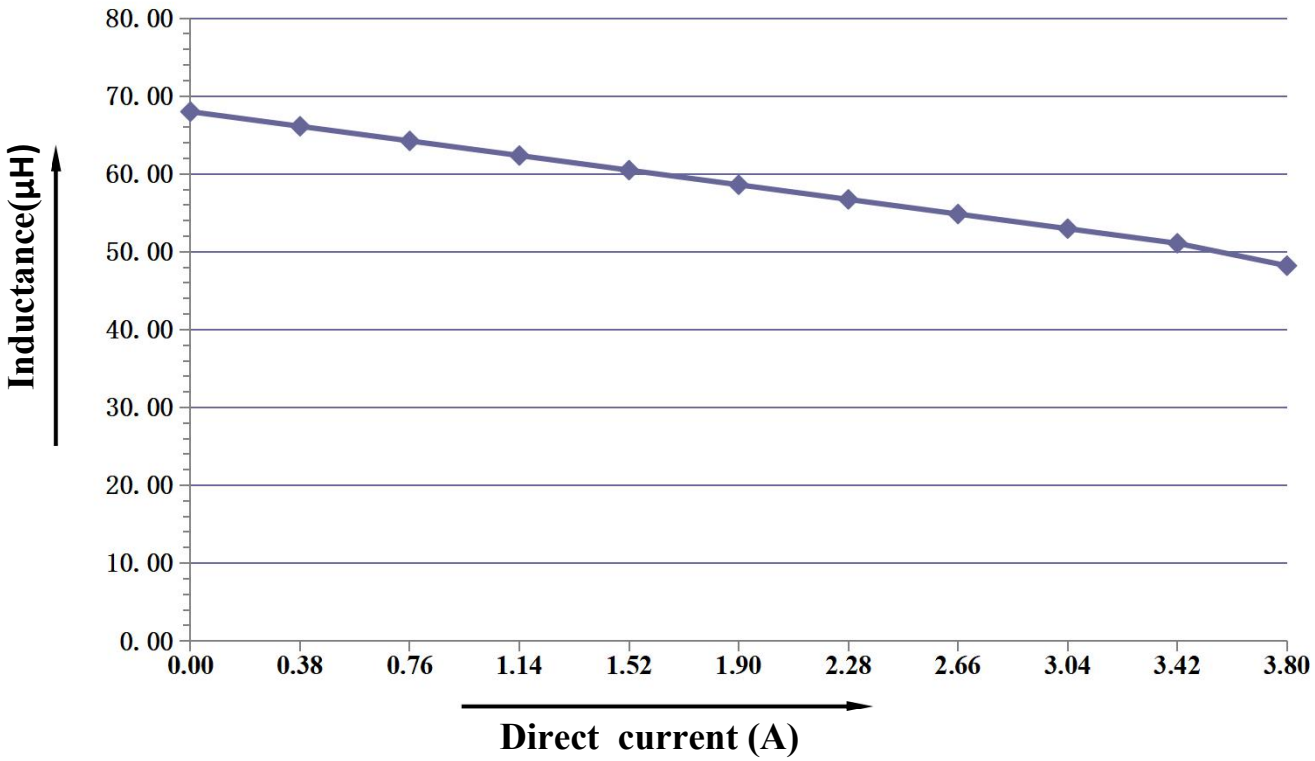
5. MATERIAL LIST

NO	ITEM	DESCRIPTION	SUPPLIER	REMARK
1	POWDER	REDUCED POWDER	TLL	
2	WIRE	ENAMELED COPPER WIRE EIW	JUNGSHING OR EQU	
3	TERMINAL	SHEET MATERIAL	ZHONGSHUN OR EQU	

6.1 ELECTRICAL CHARACTERISTIC CURVE----L vs Isat

Inductances (uH) VS Direct current (A)

CURRENT(A)	0.0	0.4	0.8	1.1	1.5	1.9	2.3	2.7	3.0	3.4	3.8		
L_I(uH)	68.00	66.12	64.24	62.36	60.48	58.61	56.73	54.85	52.97	51.09	48.21		
Drop%	0.0%	97.2%	94.5%	91.7%	88.9%	86.2%	83.4%	80.7%	77.9%	75.1%	70.9%		



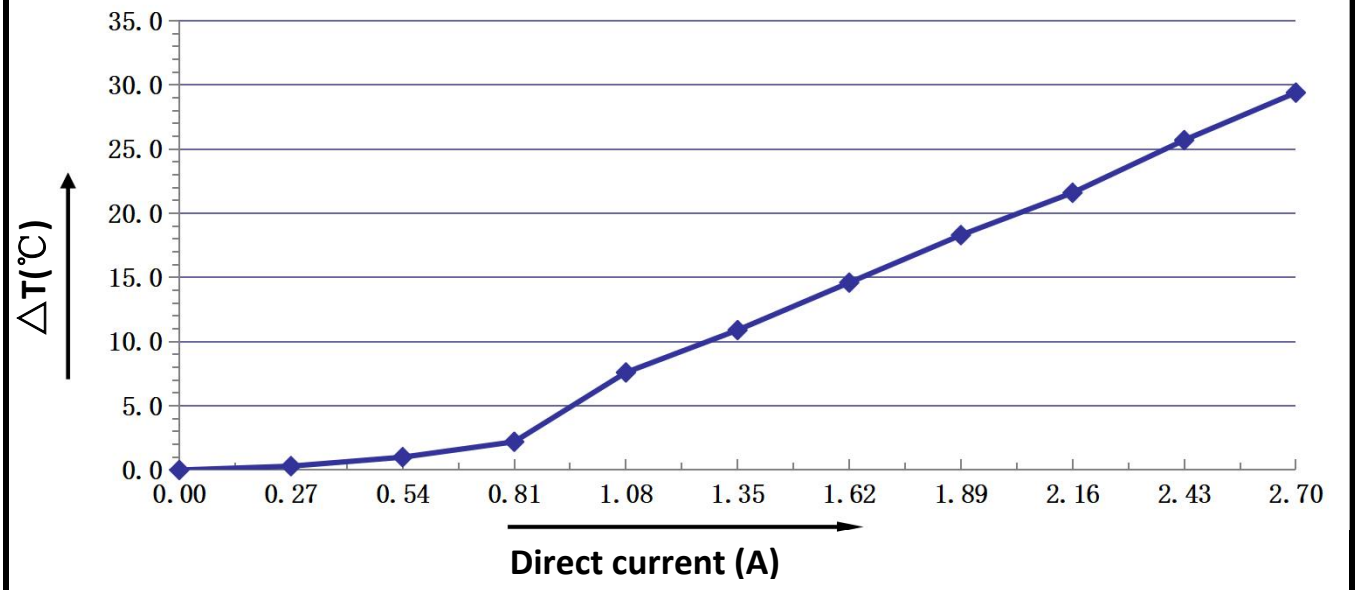
APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟

CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 6 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

6.2 ELECTRICAL CHARACTERISTIC CURVE----△T vs IDC

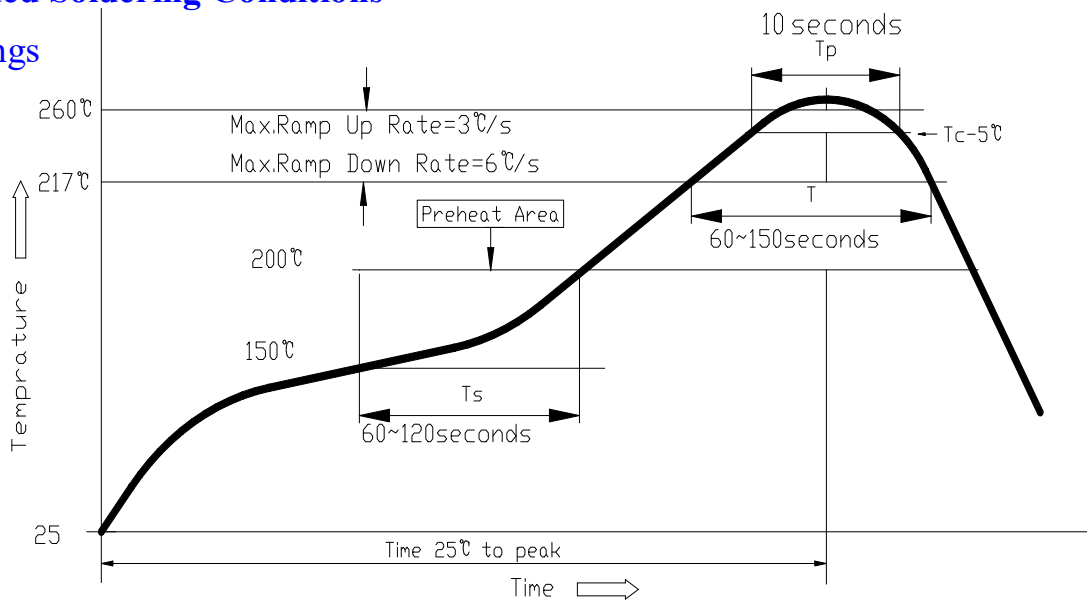
Temperature Rise(℃)vs Direct Current(A)

CURRENT(A)	0.00	0.27	0.54	0.81	1.08	1.4	1.6	1.9	2.2	2.43	2.70		
△T(℃)	0.0	0.3	1.0	2.2	7.6	10.9	14.6	18.3	21.6	25.7	29.4		



7. Recommended Soldering Conditions

Reflow Solderings

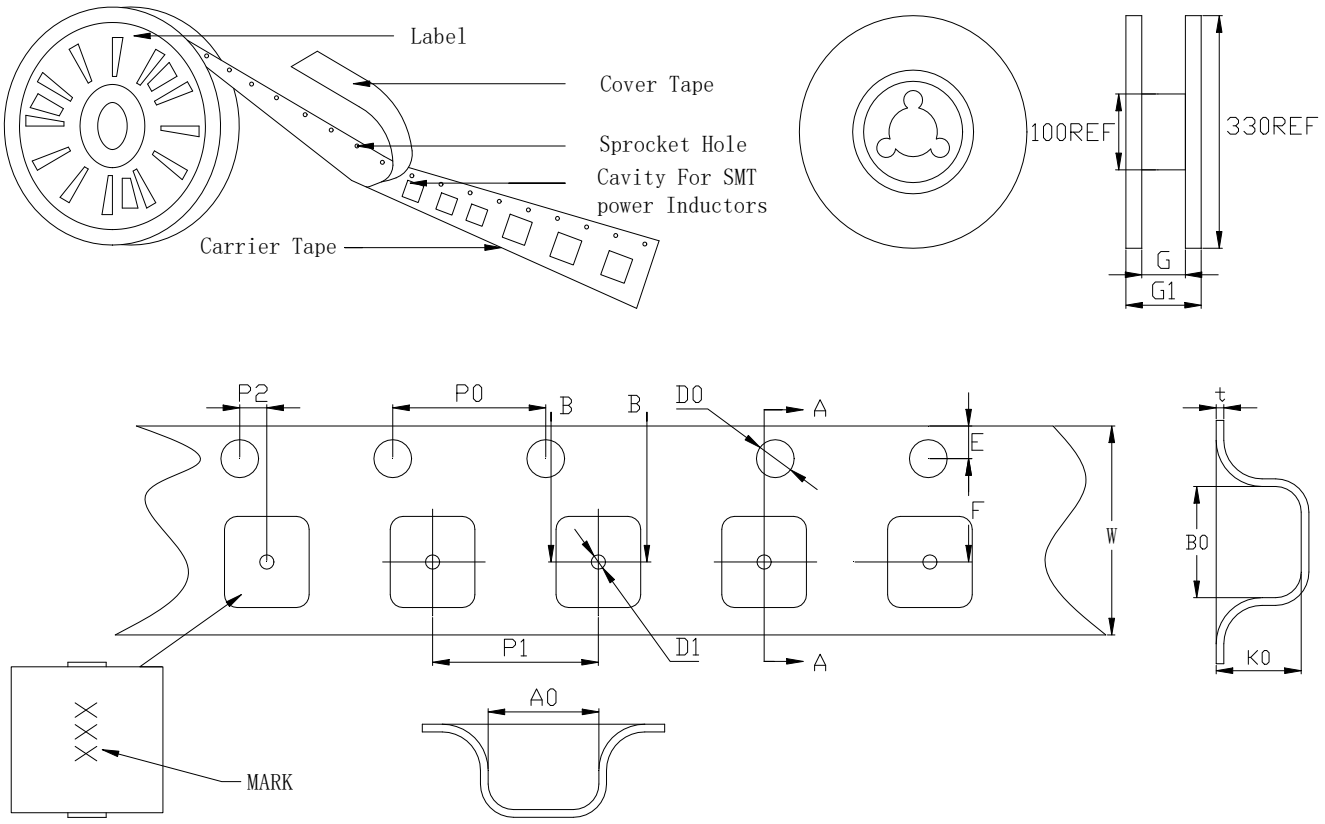


APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟

SPECIFICATION FOR APPROVAL

CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 7 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

8. PACKAGING(unit: mm)



TYPE	DIMENSION OF REEL				PACKING UNIT (PCS/R)
YSPI1050	W	24.0±0.35	D1	∅1.50MIN	Φ330mm
	E	1.75±0.15	A0	10.7±0.15	800PCS/R
	F	11.50±0.15	B0	12.0±0.15	
	P1	16.00±0.15	K0	4.5±0.15	
	P0	4.00±0.15	t	0.35±0.15	
	P2	2.00±0.15	G	24.8±0.3	
	D0	∅1.50±0.15	G1	32.2±0.3	

APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟

SPECIFICATION FOR APPROVAL

CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 8 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

9.1 RELIABILITY TEST

TEST ITEM	SPECIFICATION	TEST CONDITION
Resistance to soldering heat	1. Inductor shall have no evidence of electrical and mechanical damage. 2. Inductance shall not change more than ±5%. 3. Q shall not change more than ±20%.	a. Temp: 260±5°c b. Time: 10±1.0 secs
Solderability test	The terminal shall be at least 95% covered with solder.	After fluxing, the terminal shall be dipped in a melted solder bath at 245±5℃ for 4±1.0 secs.
High temperature & high humidity test	The anti-erosion quality of the surface and the specimen's inductance shall not change from the initial value within ±10%	a. Test condition 1)Temp.:60±2℃℃, R.H.:90~95% 2)Time:500±2hours b. Measurement methods: The experimental component should be put at normal condition for 2 hours then to measure again after test
Salt spray test		a. Test condition 1)Temp.:35±2℃ 2)Time:48±2hours 3)Salt solution PH:6.5~7.2 b. Measurement methods: The experimental component should be put at normal condition for 2 hours then to measure again after test
Vibration test	1. Inductance shall be within ±10% of the initial value. 2. Appearance:no damage	a. Frequency: 10 to 55HZ b. Amplitude: 1.5mm c. Direction and time: X, Y and Z directions for 2 hours each.

We have suggested the storage period of lead-free product should not over 6 months.

APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟

SPECIFICATION FOR APPROVAL

CUSTOMER:		REV NO:	A
DESCRIPTION:	SMD TYPE MOLDING POWER INDUCTOR	PAGE NO:	PAGE 9 OF 9
PART NO:	YSPI1050-680M	DATE:	2025年1月18日

9.2 RELIABILITY TEST

TEST ITEM	SPECIFICATION	TEST CONDITION
Free fall test	No mechanical damage shall be noticed.	Drop the product from 1 meter height to 3 cm thick board, repeat 10 times。
Temperature Cycling test	1. Inductance shall be within ±10% of the initial value 2. Appearance:No damage	a. Test condition 1)Temp.:-55℃,time:30±3min 2)Temp.:+125℃,time: 30±3min 3)Cycles times:10 cycles b. Measurement methods: The experimental component should be put at normal condition for 2 hours then to measure again after test
High Temperature resistance test		a. Test condition 1)Applied rated current 2)Temp.:85℃±2℃ 3)Test time:500+24/-0H b. Measurement methods: The experimental component should be put at normal condition for 24 hours then to measure again after test.
Low temperature resistance test		a. Test condition 1)Temp.:-55℃±2℃ 2)Test time:500+24/-0H b. Measurement methods: The experimental component should be put at normal condition for 24 hours then to measure again after test.

We have suggested the storage period of lead-free product should not over 6 months.

APPROVED BY	CHECKED BY	DRAWN BY
张伟波	薛德东	刘娟