SPECIFICATION FOR APPROVAL

CUSTOMER: _____ FILE NO.: _____

CUSTOMER P/N: _____

DESCRIPTION: SMD TYPE MOLDING POWER INDUCTOR

PART NO: FXL1350-470-M

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

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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

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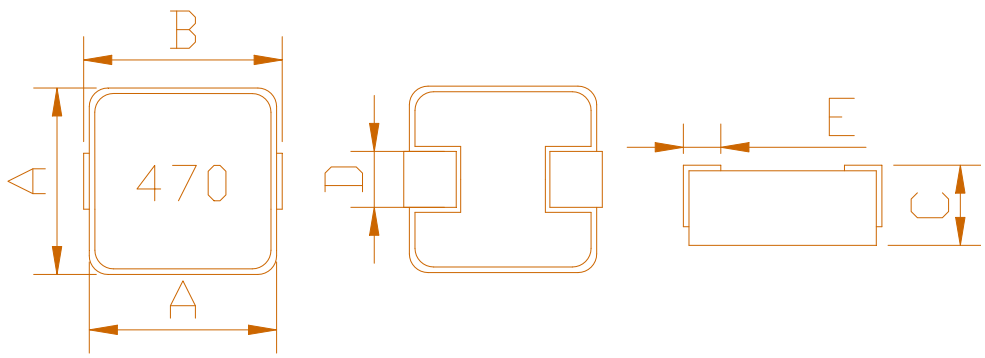
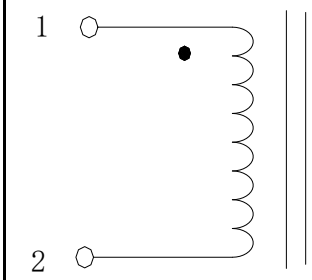
1. DRAWING

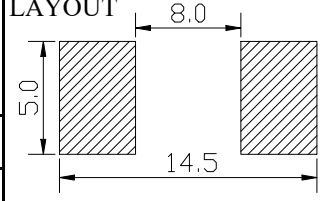
ASSEMBLY (UNIT: mm)



SCHEMATICS



SUGGESTED PCB LAYOUT



CODE	A	B	C	D	E
DIMENSION	12.8±0.5	13.2±1.0	5.0 MAX	3.5±0.5	2.5±0.5

2. ELECTRICAL CHARACTERISTICS @25℃

ITEM	SPEC. RANGE	TEST CONDITION	TEST INSTRUMENTS
L_0(μH)	47*(1±20%)	100KHz/1.0V	Microtest 6377
IDC(A)	3.5		Microtest 6377
Isat(A)	5.5		Microtest 6220
DCR(mΩ)	90		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.

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4.1 TEST DATA OF ELECTRICAL CHARACTERISTIC

TEST ITEM	L_0	Temperature rise	L_{Isat}	DCR	
	(μH)	(℃)	(μH)	(mΩ)	
CON.	100KHz/1V	IDC3.5A	Isat 5.5A	At 25℃	
SPEC.	47*(1±20%)	△T 40℃	Drop 30 %	90	
1	44.210	32.2	31.270	86.24	
2	45.010	30.5	32.000	86.17	
3	42.700	30.7	31.120	85.32	
4	40.500	31.2	29.620	86.66	
5	46.970	29.8	33.400	85.71	
6	42.630	31.8	30.410	87.43	
7	48.940	30.8	34.520	84.12	
8	47.580	31.2	33.430	85.78	
9	41.070	29.5	30.050	85.62	
10	41.700	32.4	30.120	84.79	
X	44.131	31.01	31.594	85.784	
R	8.44	2.90	4.90	3.31	

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

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4.2 TEST DATA OF DIMENSIONS

CODE	A	B	C	D	E		
	(mm)	(mm)	(mm)	(mm)	(mm)		
SPEC.	12.8±0.5	13.2±1.0	5.0 MAX	3.5±0.5	2.5±0.5		
1	12.68	13.49	4.81	3.80	2.43		
2	12.71	13.51	4.72	3.80	2.38		
3	12.70	13.48	4.75	3.80	2.45		
4	12.69	13.52	4.73	3.80	2.47		
5	12.71	13.50	4.80	3.80	2.44		
6	12.70	13.46	4.83	3.80	2.51		
7	12.72	13.53	4.78	3.80	2.48		
8	12.68	13.49	4.82	3.80	2.50		
9	12.67	13.49	4.80	3.80	2.49		
10	12.69	13.52	4.79	3.80	2.48		
X	12.695	13.499	4.783	3.800	2.463		
R	0.05	0.07	0.11	0.00	0.13		

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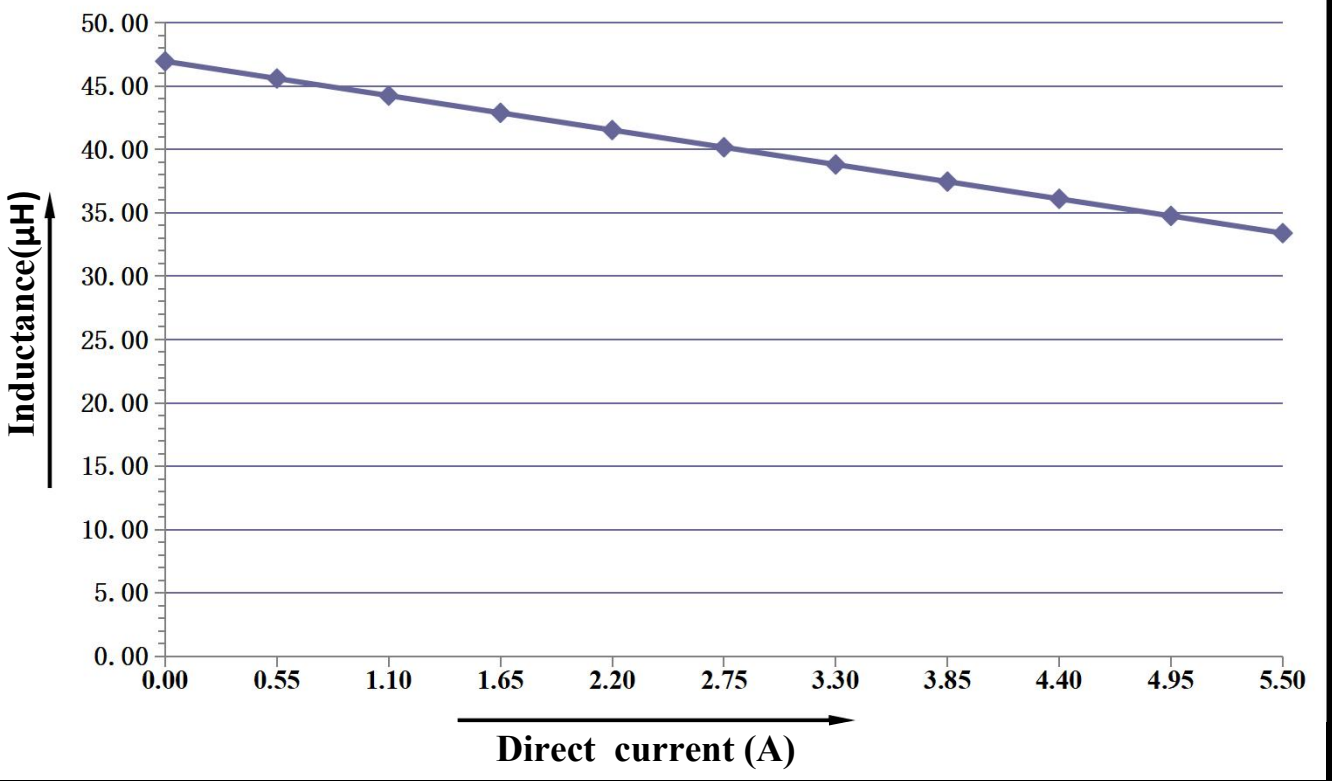
5. MATERIAL LIST

NO	ITEM	DESCRIPTION	SUPPLIER	REMARK
1	POWDER	ALLOY 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	0.6	1.1	1.7	2.2	2.8	3.3	3.9	4.4	5.0	5.5		
L_I (uH)	46.97	45.61	44.26	42.90	41.54	40.18	38.82	37.47	36.11	34.76	33.40		
Drop%	0.0%	2.9%	5.8%	8.7%	11.6%	14.5%	17.4%	20.2%	23.1%	26.0%	28.9%		



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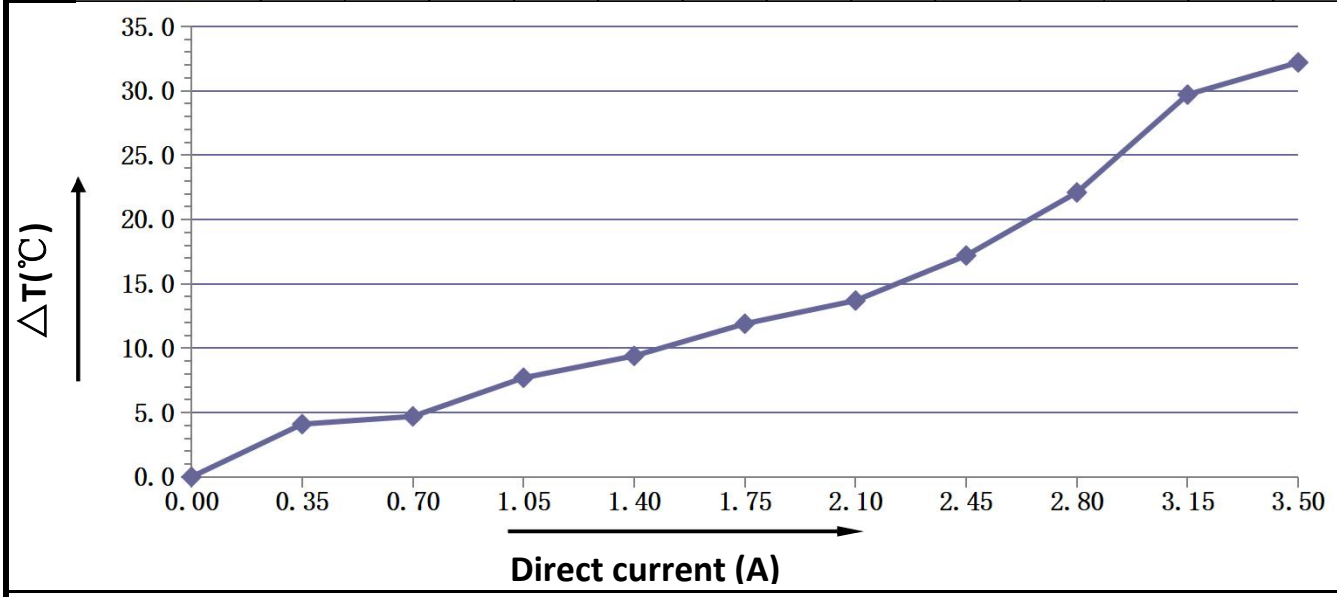
6.2 ELECTRICAL CHARACTERISTIC CURVE----△T vs IDC

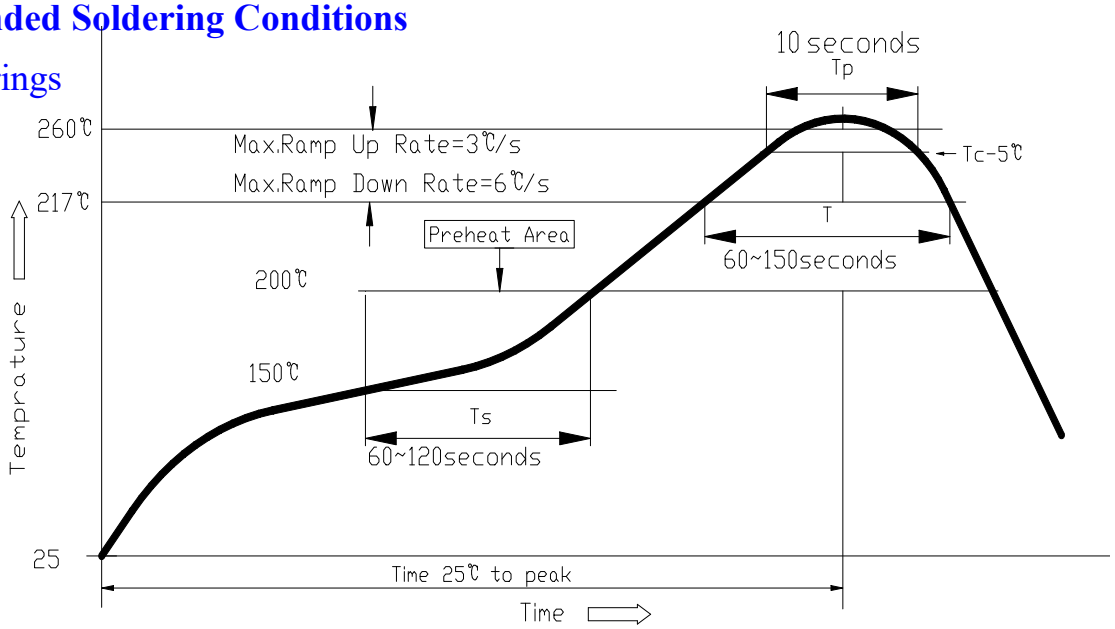
Temperature Rise(℃)vs Direct Current(A)

CURRENT(A)	0.0	0.4	0.7	1.1	1.4	1.8	2.1	2.5	2.8	3.2	3.5		
△T(℃)	0.0	4.1	4.7	7.7	9.4	11.9	13.7	17.2	22.1	29.7	32.2		



7. Recommended Soldering Conditions

Reflow Solderings



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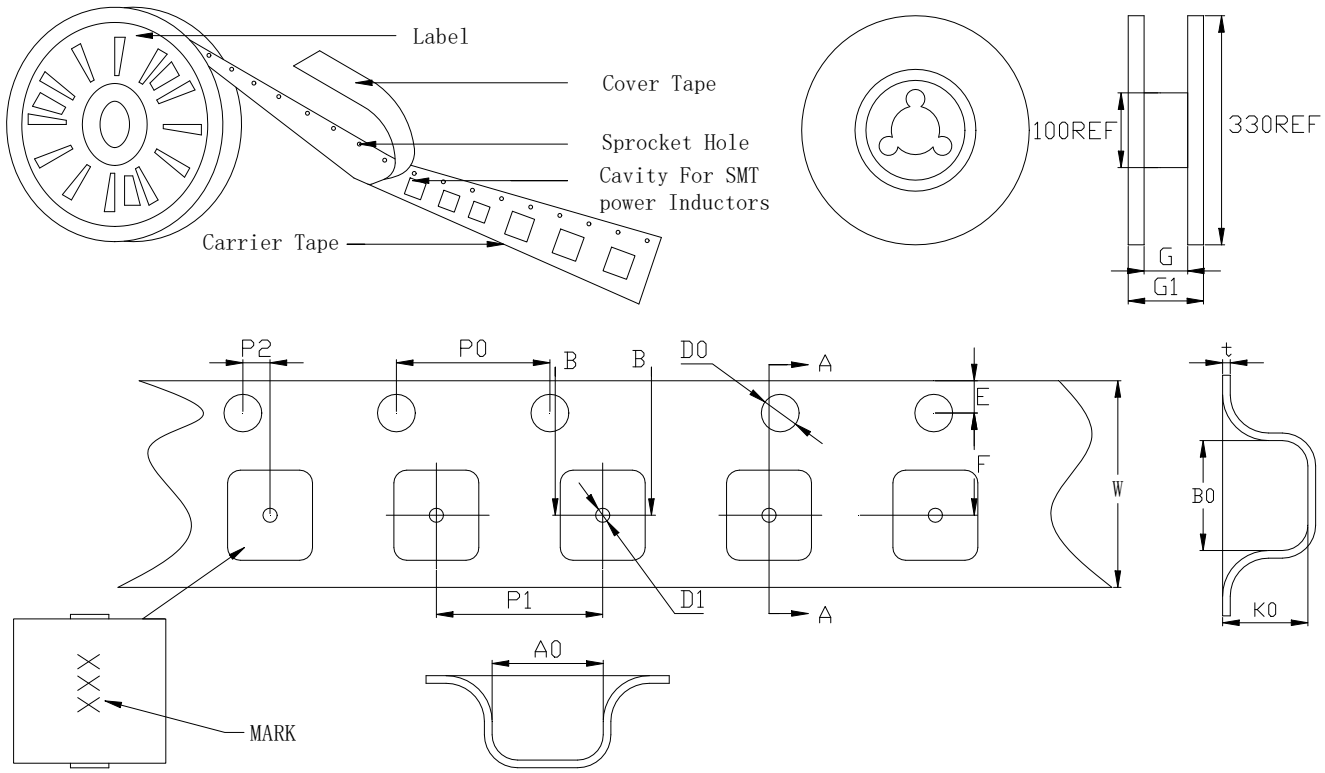
8. PACKAGING(unit: mm)



TYPE	DIMENSION OF REEL				PACKING UNIT (PCS/R)
FXL1350	W	24.0±0.35	D1	∅1.50MIN	Φ330mm
	E	1.75±0.15	A0	13.5±0.15	500 PCS/R
	F	11.50±0.15	B0	14.2±0.15	
	P1	16.00±0.15	K0	5.3±0.15	
	P0	4.00±0.15	t	0.35±0.15	
	P2	2.00±0.15	G	24.8±0.5	
	D0	∅1.50±0.15	G1	32.2±0.5	

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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.

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SPECIFICATION FOR APPROVAL

CUSTOMER:		REV NO:	A
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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.

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