DARFON Approval Sheet for SAM\SPM

鈺緯科技開發股份有限公司

Office

達方電子股份有限公司 Darfon Electronics Corp	總部 Headquarter 桃園市 33341 龜山區山鶯路 167-1 號 No.167-1, Shanying Rd., Guishan Dist, Taoyuan City 33341, Taiwan	Tel：+886-3-250-8800 Fax：+886-3-250-7180
	台南廠 Tainan Factory 台南市 70955 安南區鹽田里工業二路 21 號 No. 21 Gongye 2nd Rd., Annan Dist, Tainan 70955, Taiwan	Tel：+886-6-510-8800 Fax：+886-6-384-0020
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Factory

達方電子股份有限公司 Darfon Electronics Corp.	台南廠 Tainan Factory 台南市 70955 安南區鹽田里工業二路 21 號 No. 21 Gongye 2nd Rd., Annan Dist, Tainan 70955, Taiwan	Tel：+886-6-510-8800 Fax：+886-6-384-0020
淮安達方電子有限公司 Darfon Electronics (Huaian) Co., Ltd	淮安廠 Huaian Factory 中國江蘇省淮安市經濟開發區徐場街 9 號 No.9 Xu-Yang St., Economy Development Area, Huaian, Jiangsu Province, China	Tel: +86-517-8319-8800

達方電子股份有限公司 桃園市 統一發票專用章 統一編號 16081507 TEL:03-2508800 負責人 蘇開建 進出口專用

DARFON

Approval Sheet for SAM\SPM

SPECIFICATION FOR APPROVAL

Customer Name	: 鈺緯科技開發股份有限公司
Product	: SAM\SPM
Date	: 2026/01/05
FILE No	:

Content	Document No
SAM4040___ESC Series	DFE-L-G061-1-00
SAM4040___ELC Series	DFE-L-G062-1-00
SAM4040___ESH Series	DFE-L-G066-1-00
SAM4040___ELH Series	DFE-L-G067-1-00
SAM5050___ESE Series	DFE-L-G101-1-00
SAM5050___ELE Series	DFE-L-G102-1-00
SAM5050___ESG Series	DFE-L-G106-1-00
SAM5050___ELG Series	DFE-L-G107-1-00
SAM5050___ESH Series	DFE-L-G111-1-00
SAM5050___ELH Series	DFE-L-G112-1-00
SAM5050___ESL Series	DFE-L-G116-1-00
SAM5050___ELL Series	DFE-L-G117-1-00
SAM5050___ESN Series	DFE-L-G121-1-00
SAM5050___ELN Series	DFE-L-G122-1-00
SAM7070___ESE Series	DFE-L-G156-1-00
SAM7070___ELE Series	DFE-L-G157-1-00
SAM7070___ESG Series	DFE-L-G161-1-00
SAM7070___ELG Series	DFE-L-G162-1-00
SAM7070___ESL Series	DFE-L-G166-1-00
SAM7070___ELL Series	DFE-L-G167-1-00
SAM7070___ESN Series	DFE-L-G171-1-00
SAM7070___ELN Series	DFE-L-G172-1-00
SAM7070___ESQ Series	DFE-L-G176-1-00
SAM7070___ELQ Series	DFE-L-G177-1-00
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SAM8080___ELW Series	DFE-L-G212-1-00
SAM1010___E_N Series	DFE-L-G246-1-00
SAM1010___ELN Series	DFE-L-G247-1-00
SAM1010___ESW Series	DFE-L-G251-1-00
SAM1010___ELW Series	DFE-L-G252-1-00
SAM1313___E_Q Series	DFE-L-G286-1-00
SAM1313___E_R Series	DFE-L-G291-1-00
SAM1313___ELR Series	DFE-L-G292-1-00
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SPM2016___PWA Series	DFE-L-G437-1-00
SPM2016___PHA Series	DFE-L-G438-1-00
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SPM2520___PHC Series	DFE-L-G477-1-00
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SPM4040___EBA Series	DFE-L-G572-1-00
SPM4040___ESC Series	DFE-L-G576-1-00

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	SPM4040___ESE Series	DFE-L-G581-1-00
	SPM4040___ESH Series	DFE-L-G586-1-00
	SPM4040___EBH Series	DFE-L-G587-1-00
	SPM4040___ESL Series	DFE-L-G591-1-00
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✓ ✓	SPM7070___ESL Series	DFE-L-G696-1-00
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	SPM1313___ETQ Series	DFE-L-G852-1-00
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	SPM2222___ESX Series	DFE-L-G926-1-00
	SPM2222___EBX Series	DFE-L-G927-1-00

Customer		Darfon	
APPROVED BY:		APPROVED BY	Eric Chou(QA Dept)
		PREVIEWED BY	Rita Wu(Sales manager)
		PREPARED BY	Cherry Tsai(Sales Dept)

設計驗證
工程課
2026 -01- 16
發行

DARFON

Approval Sheet for SAM\SPM

Darfon P/N	Customer P/N	Description
SPM7070100MESL	3LCH100451Y (L0208)	

Remark:

DARFON

The history of revision change

Rev.	Release Date	Description
0	2023.10.16	New specification for approved

Example of DARFON P/N

Darfon P/N is used to identify the different specs. The actual dimensions, electrical property, and package are manifested in the product specification.

XXX	XXXX	XXX	X	X	X	X
①	②	③	④	⑤	⑥	⑦

① SMD inductor types
② Size Code (length and width)
③ Inductance Value
④ Tolerance of Inductance
⑤ Size of the packaging reel
⑥ product number
⑦ Thickness code

Notes

Handling

- Keep the products away from all magnets and magnetic objects.
- Be careful not to subject the products to excessive mechanical shocks.
- Please keep the products, which are mounted on PCB, away from any physical impact.

Storage and Operation

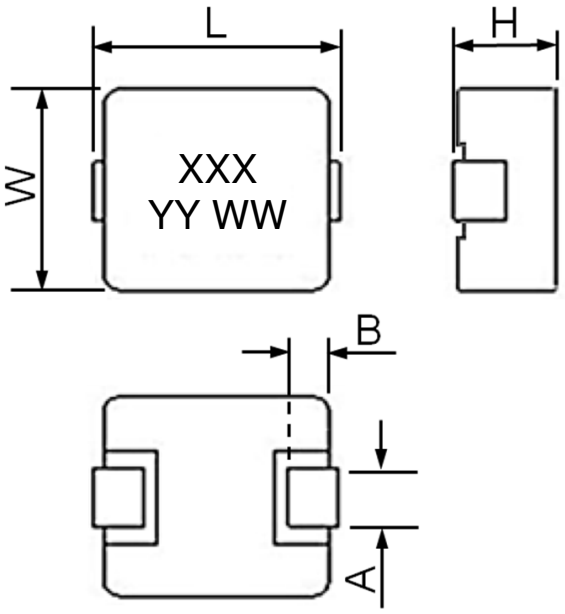
- Storage condition：Temperature 5 to 35℃, Humidity 45 to 70RH%.
  - To prevent deterioration of the solderability of terminal electrodes or the packing materials of the products.
- Product expiration date：6 months
  - Even under the ideal storage conditions, solder ability of inductor's electrode deteriorates decreases as time passes, so inductors should be used within 6 months after the delivery time.
- Operating temperature -40 to +125℃
  - It contains self temperature increase.
  - It should be confirmed in the actual end product that the temperature rise of the inductor is within the operating temperature.
    (Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provision all affect the part temperature.)

Cleaning

- If this power choke is dipped in the cleaning agent, such as toluene, xylene, ketone, and ether system, there is a possibility that the performance decreases enormously.
- The high-power ultrasonic washing may damage the choke body.

1. Physical Characteristics

1-1 Product Dimensions



Code	Dimensions
L	7.2 ± 0.3
W	6.6 ± 0.2
H	2.8 ± 0.2
A	3.0 ± 0.5
B	1.5 ± 0.3

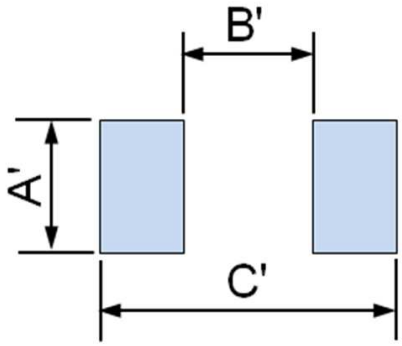
Unit：mm

Marking

The XXX represents inductance value. (shown in the "Section 2. Electrical Characteristic")

The YYWW represents date code, i.e. year (2020=20) and weekly (01~53).

1-2 Recommend Land Pattern Dimensions



Code	Dimensions
A'	3.5
B'	4.0
C'	8.5

Unit：mm

1-3 Weight Per Piece

0.7 ± 0.15 g

DARFON

2. Electrical Characteristics

2-1 Specifications

Darfon P/N	Nominal Inductance 〔μH〕	Inductance Tolerance [%]	DC Resistance Rdc [mΩ]		Heat Rating Current Idc〔A〕	Saturation Current Isat〔A〕	Marking
			Typ.	Max.	Max.	Max.	
SPM7070R10NESL	0.10	± 30%	1.5	1.7	32.50	60.00	R10
SPM7070R15NESL	0.15	± 30%	1.5	1.8	24.00	41.00	R15
SPM7070R22MESL	0.22	± 20%	2.5	2.8	23.00	34.00	R22
SPM7070R33MESL	0.33	± 20%	3.0	3.5	21.00	25.00	R33
SPM7070R47MESL	0.47	± 20%	3.5	4.1	18.00	20.00	R47
SPM7070R56MESL	0.56	± 20%	3.9	4.5	16.50	18.00	R56
SPM7070R68MESL	0.68	± 20%	4.5	5.0	16.00	17.00	R68
SPM7070R82MESL	0.82	± 20%	7.0	7.5	14.00	16.00	R82
SPM70701R0MESL	1.0	± 20%	8.5	9.0	12.00	15.00	1R0
SPM70701R5MESL	1.5	± 20%	10.6	12.1	10.00	13.00	1R5
SPM70702R2MESL	2.2	± 20%	15.5	18.0	8.00	10.00	2R2
SPM70703R3MESL	3.3	± 20%	25.0	28.0	6.50	9.00	3R3
SPM70704R7MESL	4.7	± 20%	32.5	35.0	5.50	6.50	4R7
SPM70705R6MESL	5.6	± 20%	36.0	42.0	5.00	6.25	5R6
SPM70706R8MESL	6.8	± 20%	43.9	50.0	4.50	6.00	6R8
SPM70708R2MESL	8.2	± 20%	54.0	60.0	4.50	6.00	8R2
SPM7070100MESL	10.0	± 20%	62.0	68.0	4.00	5.50	100
SPM7070150MESL	15.0	± 20%	105.0	125.0	3.00	4.00	150
SPM7070220MESL	22.0	± 20%	144.0	160.0	2.50	3.00	220
SPM7070330MESL	33.0	± 20%	230.0	255.0	2.00	3.30	330
SPM7070470MESL	47.0	± 20%	285.0	320.0	1.75	2.45	470

• Test Condition

— Temperature：25±5 ℃, Humidity：<70 RH%

— Frequency：100KHz, 1.0V

• Test Instruments

— Inductance：Chroma 3302 + Chroma 1320 + Chroma 1320S

— DC Resistance：Chroma 16502

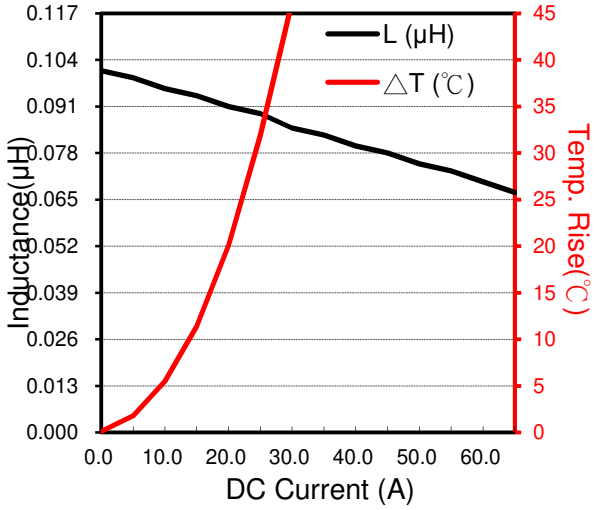
• Saturation current (Isat)：the maximum DC current will cause inductance drop approximately 30% from initial value.

Heat rating current (Idc)：the maximum DC current will cause temperature rising approximately 40℃.

• Impulse voltage=100V.

2-2 Current Characteristic

SPM7070R10NESL



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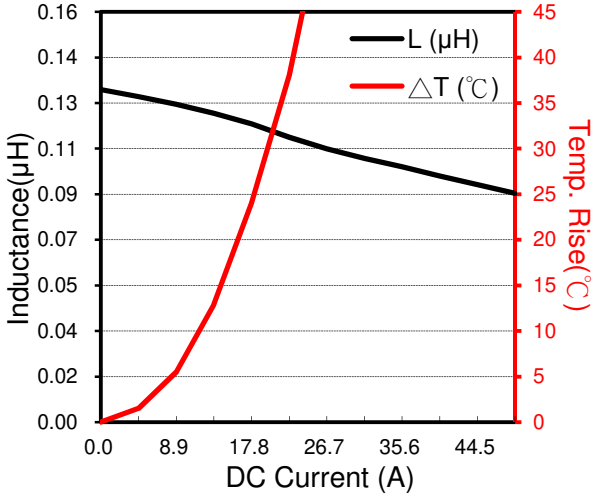

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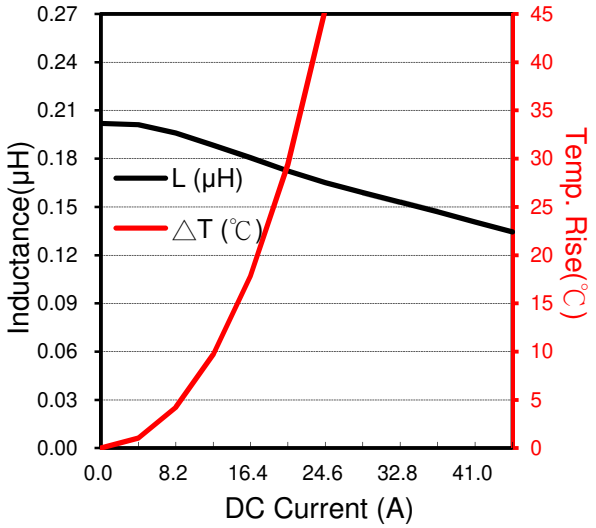

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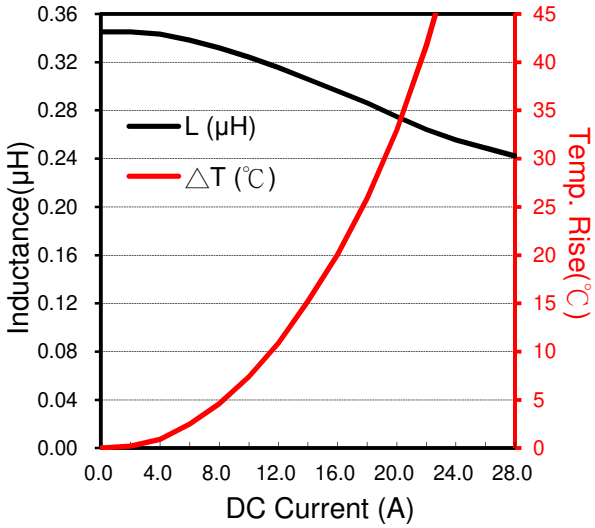

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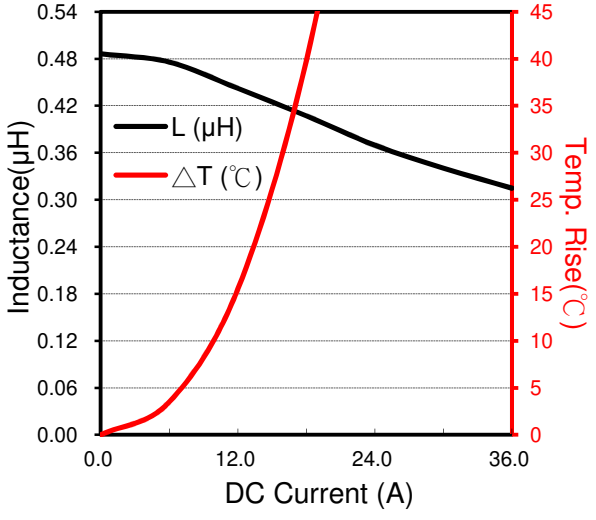

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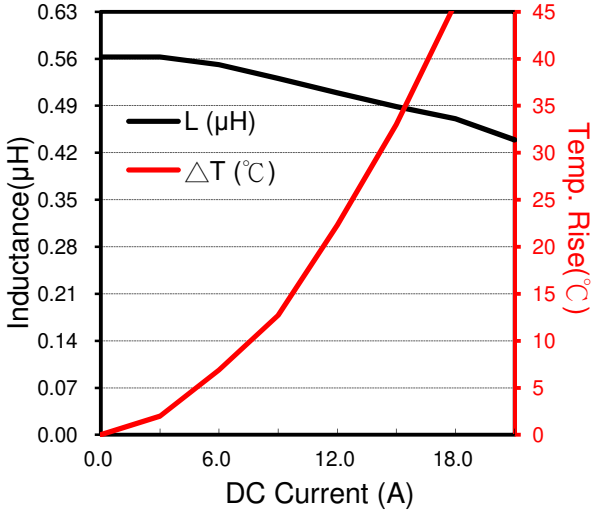

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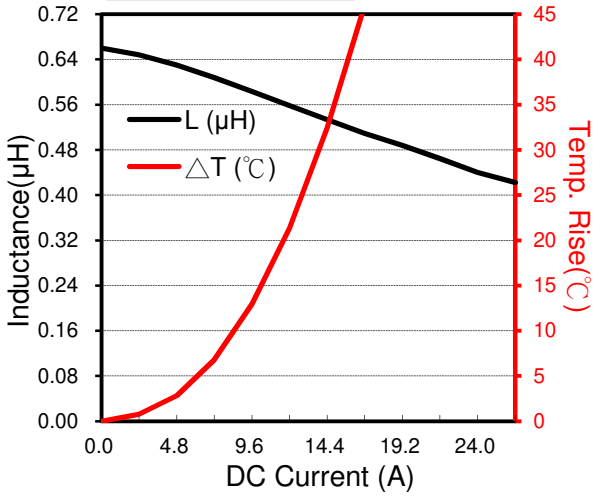

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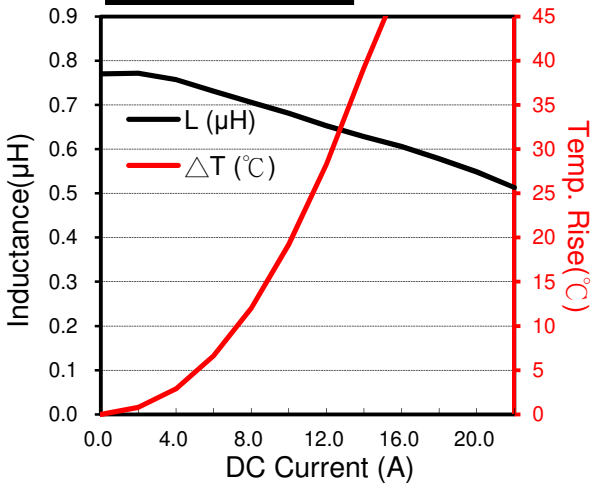

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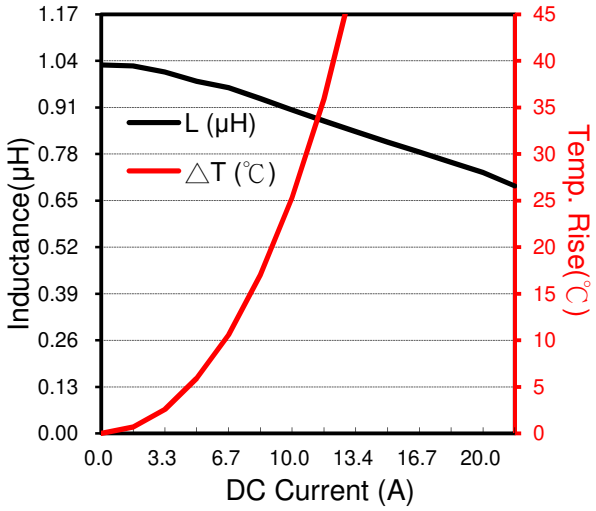

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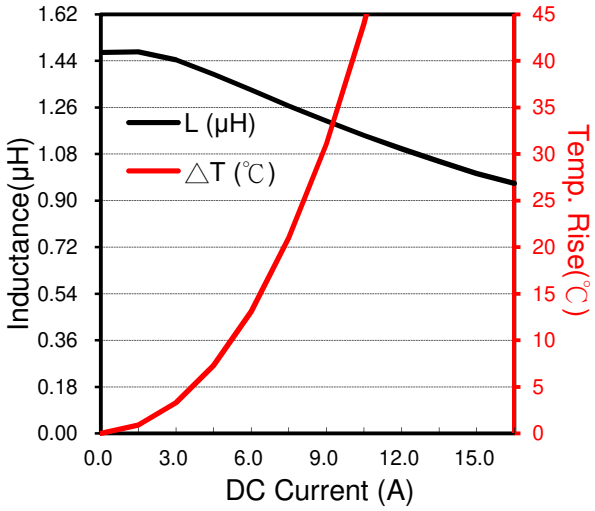

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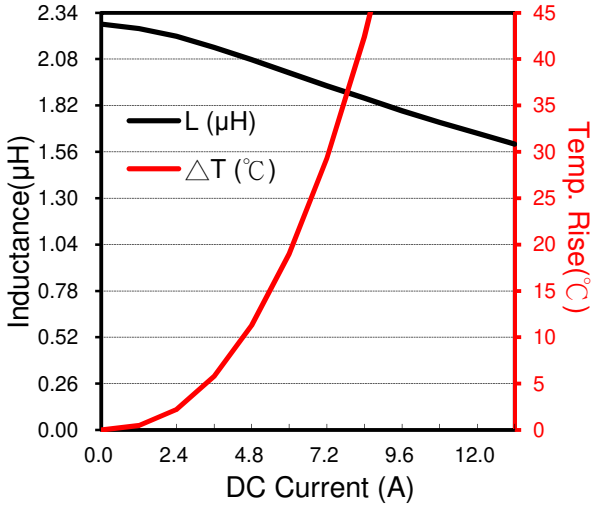

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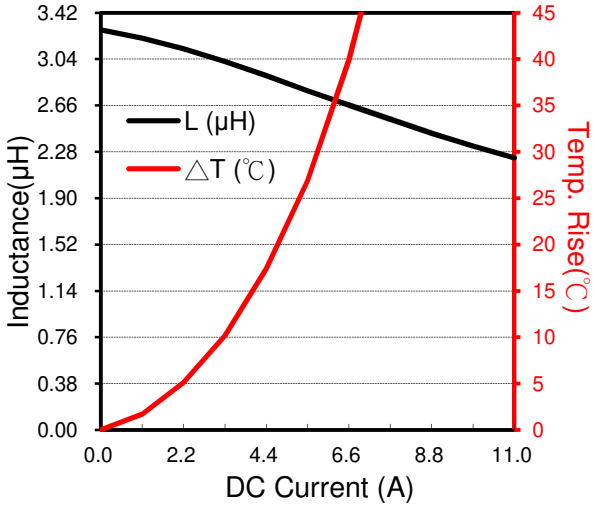

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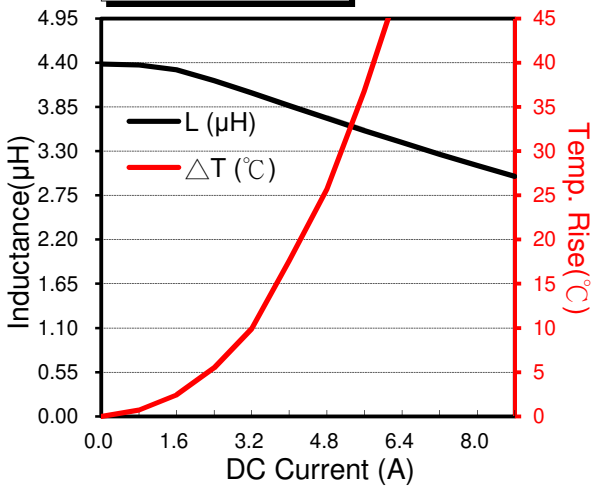

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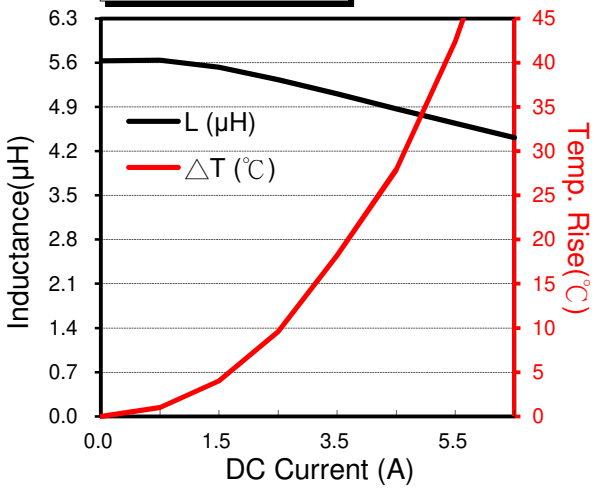

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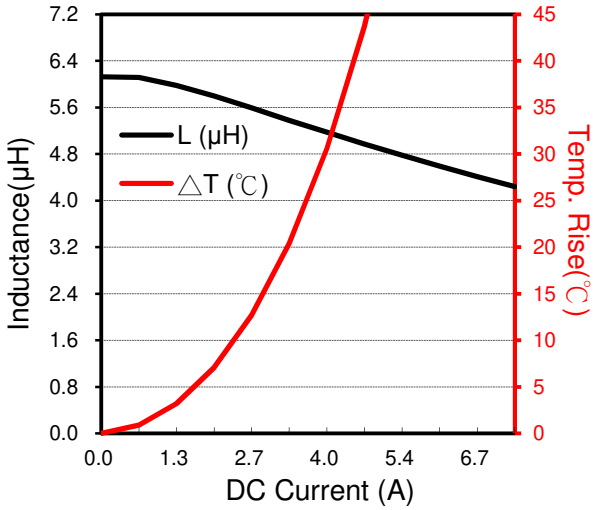

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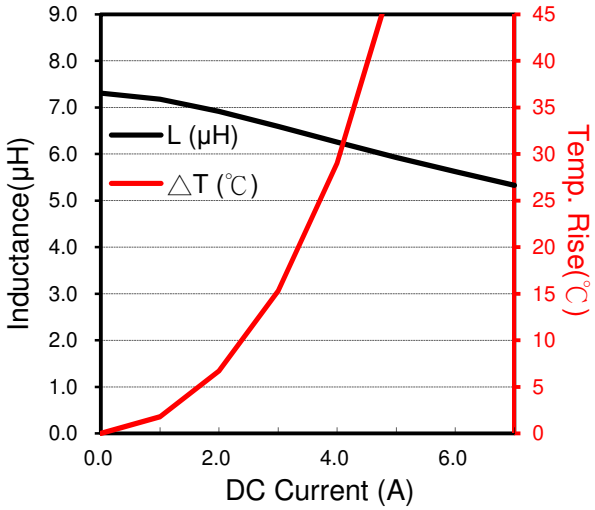

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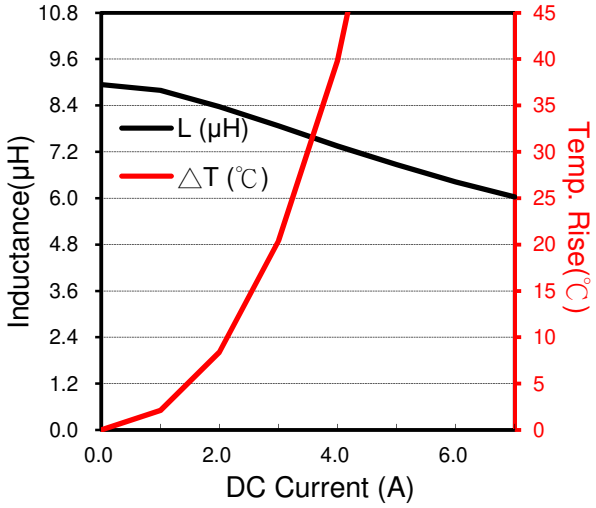

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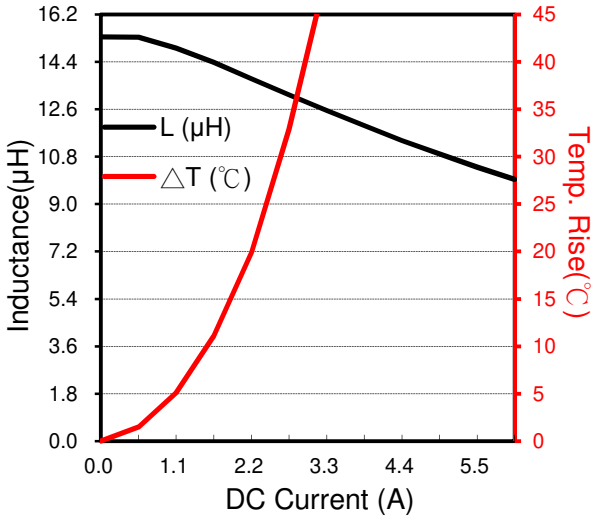

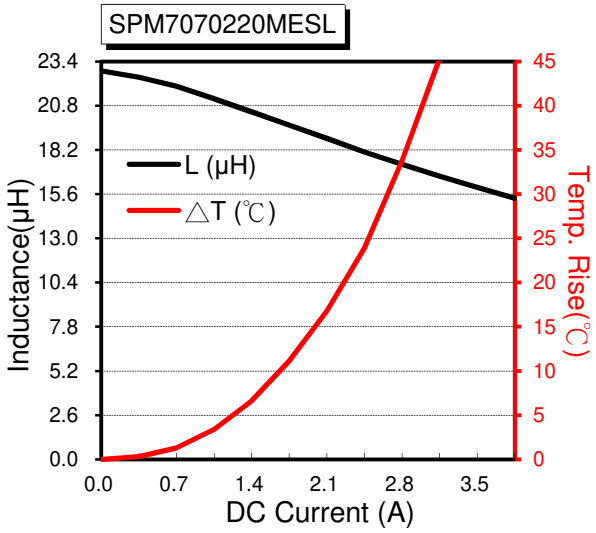
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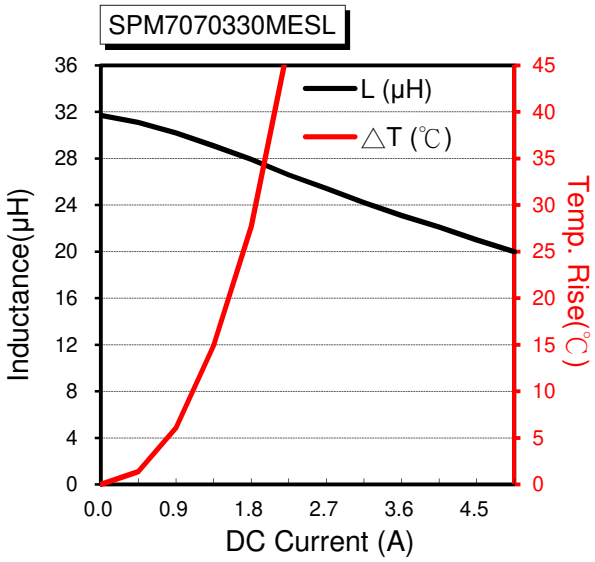
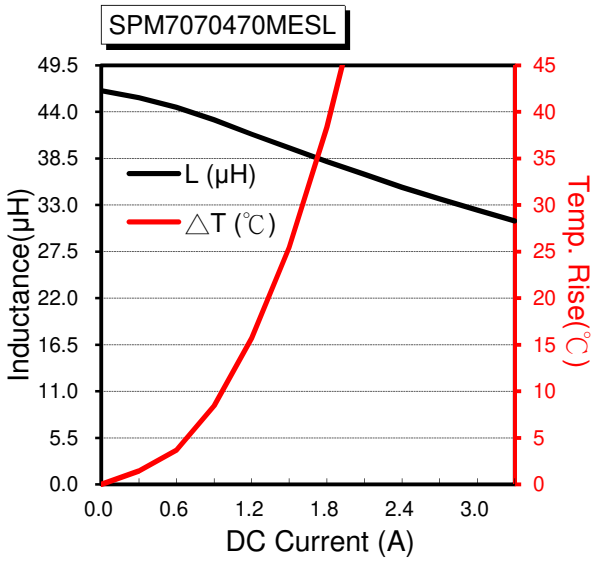
Inductance(μH)
Temp. Rise(℃)
DC Current (A)
L (μH)
△T (℃)
23.4
20.8
18.2
15.6
13.0
10.4
7.8
5.2
2.6
0.0
45
40
35
30
25
20
15
10
5
0
0.0
0.7
1.4
2.1
2.8
3.5


SPM7070330MESL
Inductance(μH)
Temp. Rise(℃)
DC Current (A)
L (μH)
△T (℃)
36
32
28
24
20
16
12
8
4
0
45
40
35
30
25
20
15
10
5
0
0.0
0.9
1.8
2.7
3.6
4.5


SPM7070470MESL
Inductance(μH)
Temp. Rise(℃)
DC Current (A)
L (μH)
△T (℃)
49.5
44.0
38.5
33.0
27.5
22.0
16.5
11.0
5.5
0.0
45
40
35
30
25
20
15
10
5
0
0.0
0.6
1.2
1.8
2.4
3.0

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3. Reliability

Item	Method	Criteria
Terminal strength	Add static load 4.9N(500gf) to inductor through hole of test board for 10 ± 2 sec.	1. No detachment of terminal pin. 2. No breakage of wire.
Solder ability	1. Preheating : 160 ± 10℃, 90 sec. 2. Retention time：245 ± 5℃, 3 ± 1 sec.	At least 90% of the electrode surface immersed is coved by new solder.
Vibration	1. Frequency Range： 1) 10~55Hz. 2) 10Hz to 55Hz to 10Hz for 1 min. 2. Amplitude : 1.5mm max. 3. Time：2 hrs each in X, Y, and Z direction.	1. Inductance change within 10%. 2. No abnormality observed in appearance.
Low Temperature Storage	1. Stored temp.：-40 ± 2℃. 2. Duration：500 +4/ -0 hrs.	1. Inductance change within 10%. 2. No abnormality observed in appearance.
High Temperature Storage	1. Stored temp.：125 ± 2℃ 2. Duration：500 +4/ -0 hrs.	1. Inductance change within 10%. 2. No abnormality observed in appearance.
Thermal Shock	1. Conditions for 1 cycle Step 1. -40 ± 2℃, 30 ± 3 mins Step 2. Room temperature , 5 mins Step 3. 125 ± 2℃, 30 ± 3 mins Step 2. Room temperature , 5 mins 2. The temperature cycles shall be repeated 100 cycles in the method.	1. Inductance change within 10%. 2. No abnormality observed in appearance.
Humidity Resistance	1. Environment temperature：60 ± 2℃ Humidity : 90~95 RH% 2. Duration : 500 +4/ -0 hrs	1. Inductance change within 10%. 2. No abnormality observed in appearance.
High Temperature Resistance	1. Environment temperature：85 ± 2℃ 2. Applied Current：Rated current 3. Duration：500 +4/ -0 hrs	1. Inductance change within 10%. 2. No abnormality observed in appearance.

• Standard measuring condition：

Measurement shall be made after 48 ± 2 hours of recovery under the standard condition.

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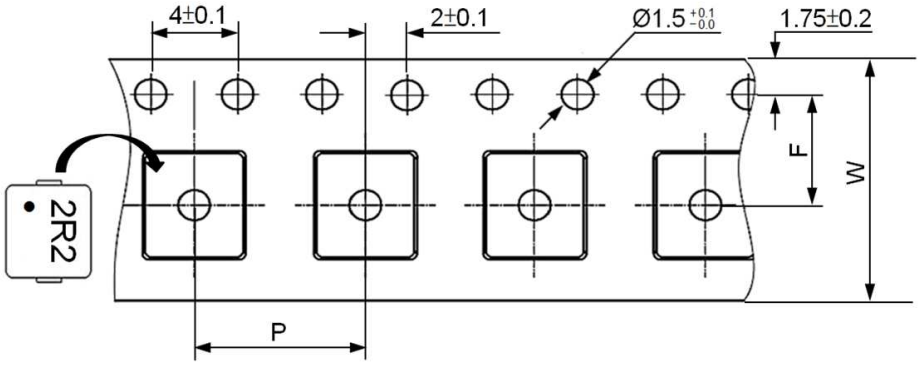
4. Taping Dimensions

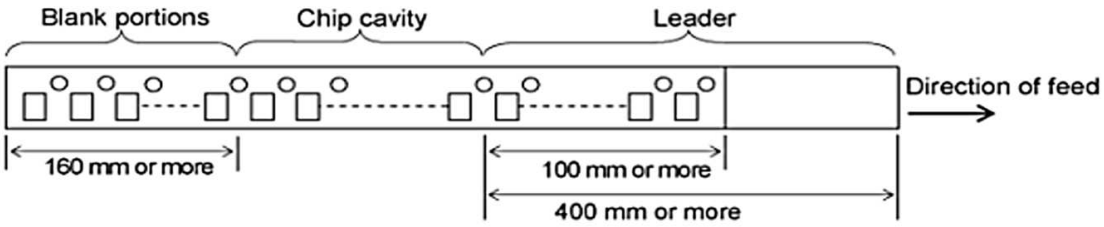
4-1 Carrier



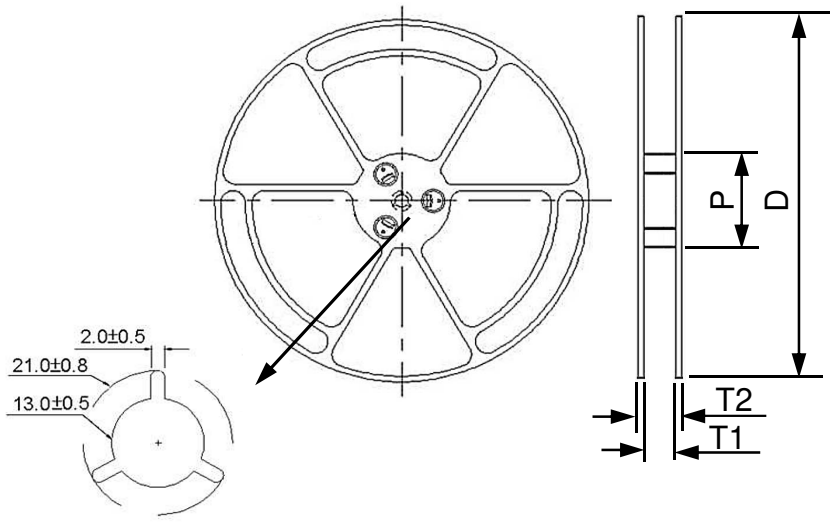
Code	Dimensions
W	16.0 ± 0.3
P	12.0 ± 0.1
F	7.5 ± 0.1

Unit：mm

• It's the schematic diagram of the inductor direction in the carrier.
The marking words are shown in "Section 1.Physical Characteristics and Section 2. Electrical Characteristic".



4-2 Reel



T1	T2
$8.4^{+0.2}_{-0.1}$	12.4 ± 2.0
$12.4^{+0.2}_{-0.1}$	17.0 ± 2.0
$16.4^{+0.2}_{-0.1}$	21.0 ± 2.0
$24.4^{+0.2}_{-0.1}$	28.4 ± 2.0
$45.2^{+0.2}_{-0.1}$	49.2 ± 2.0

Unit：mm

Code	Dimensions
D	330 ± 4.0
P	100 ± 4.0

Unit：mm

• The number of tapping= 1,500 pcs/reel.
(Each reel shall accommodate the defined tapping number whether there are empty compartments.)
• The number of empty compartments in a reel, which shall not appear continuously, must be limited to 2.
• T1 and T2 values of the reel could be referred to carrier width.
(T1 value is just a little bigger than carrier width.)

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5. Reflow Profile (Reference)

