Version record

Ver.	Description of change	Owner	Release Date
0		Dora Chou	2017.03.15

Ordering code(Example)

① ② ③ ④ ⑤ ⑥

SPM XXXX XXX X XX X

① Product Code

② Size (LxW, mm)

③ Inductance :

R22=0.22μH 2R2=2.2μH

220=22μH 221=220μH

④ Tolerance

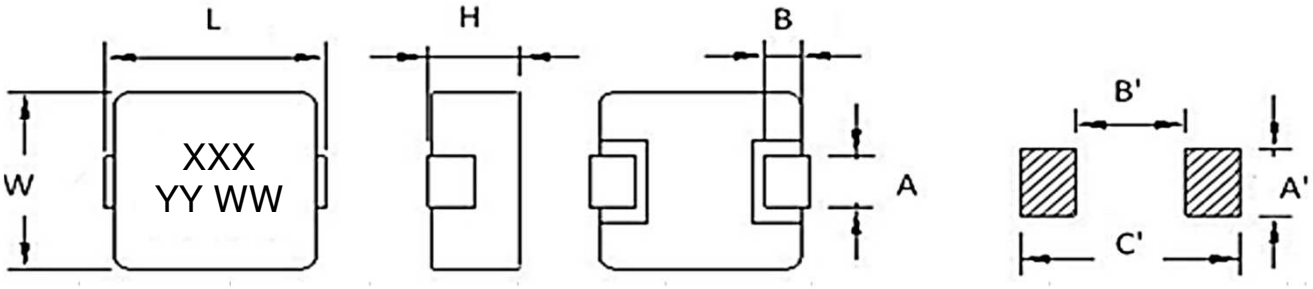
M=±20%, T=±25%, N=±30%

⑤ Material Type

⑥ Thickness (mm)

Code	Thick	Code	Thick	Code	Thick	Code	Thick
3	0.3	A	1.0	H	2.0	P	4.5
4	0.4	B	1.1	I	2.4	Q	5.0
5	0.5	C	1.2	J	2.5	R	6.0
6	0.6	D	1.4	K	2.8	S	6.5
7	0.7	E	1.5	L	3.0	T	2.6
8	0.8	F	1.6	M	3.5	U	7.0
9	0.9	G	1.8	N	4.0	V	9.0

1. Mechanical dimensions (mm)



Code	L	W	H	A	B	A'	B'	C'
Dimensions	7.2 ± 0.3	6.6 ± 0.2	2.8 ± 0.2	3.0 ± 0.5	1.5 ± 0.3	3.5	4.0	8.5

2.Electrical specification

Darfon No.	Inductance L (uH)	Tolerance	DC Resistance (mΩ)		Heat Rating Current DC Amps. Idc(A)	Saturation Current DC Amps. Isat(A)	Marking
			Typ.	Max.	Typ.	Typ.	
SPM7070R10NESL	0.10	± 30%	1.5	1.7	32.5	60.0	R10
SPM7070R15NESL	0.15	± 30%	1.5	1.8	24.0	41.0	R15
SPM7070R22MESL	0.22	± 20%	2.5	2.8	23.0	34.0	R22
SPM7070R33MESL	0.33	± 20%	3.0	3.5	21.0	25.0	R33
SPM7070R47MESL	0.47	± 20%	3.5	4.1	18.0	20.0	R47
SPM7070R56MESL	0.56	± 20%	3.9	4.5	16.5	18.0	R56
SPM7070R68MESL	0.68	± 20%	4.5	5.0	16.0	17.0	R68
SPM7070R82MESL	0.82	± 20%	7.0	7.5	14.0	16.0	R82
SPM70701R0MESL	1.0	± 20%	8.5	9.0	12.0	15.0	1R0
SPM70701R5MESL	1.5	± 20%	10.6	12.1	10.0	13.0	1R5
SPM70702R2MESL	2.2	± 20%	15.5	18.0	8.0	10.0	2R2
SPM70703R3MESL	3.3	± 20%	25.0	28.0	6.5	9.0	3R3
SPM70704R7MESL	4.7	± 20%	32.5	35.0	5.5	6.5	4R7
SPM70705R6MESL	5.6	± 20%	36.0	42.0	5.0	6.3	5R6
SPM70706R8MESL	6.8	± 20%	43.9	50.0	4.5	6.0	6R8
SPM70708R2MESL	8.2	± 20%	54.0	60.0	4.5	6.0	8R2
SPM7070100MESL	10	± 20%	62.0	68.0	4.0	5.5	100
SPM7070150MESL	15	± 20%	105.0	125.0	3.0	4.0	150
SPM7070220MESL	22	± 20%	144.0	160.0	2.5	3.0	220

■ NOTES

2-1 Test Frequency : 100 KHz , 1.0V

2-2 All test data is referenced to 25℃ ambient .

2-3 Operating Temperature Range -40℃ to + 125℃ .

The part temperature (ambient + temp rise) should not exceed 125℃ under worse case operating conditions. Circuit design , component placement, PWB trace and thickness, airflow and other cooling provision all the part temperature. Part temperature should be verified in the end application.

2-4 Idc(Irms) : DC current (A) that will cause an approximate △T of 40℃ .

2-5 Isat : DC current (A) that will cause L to drop approximately 30% .

2-6 Test Instrument : Inductance(CH-3302+CH-1320);Rdc(CH 16502)

※ Caution Temperature Rise

Temperature rise of this inductor depends on the installed board condition.

It shall be confirmed in the actual end product that temperature rise of inductor is within operation temperature.

2-7 Weight=0.7 ± 0.15 g

3. Precaution

3-1 Handling

- Keep the products away from all magnets and magnetic objects.
- Be careful not to subject the products to excessive mechanical shocks.
- Please avoid applying impact to the products after mounted on pc board.
- Avoid ultrasonic cleaning

3-2 Storage

To prevent deterioration of the solderability of terminal electrodes and/or the packing materials of the products, please store the products under following storage conditions.

Ambient temperature range +5℃ to 35℃

Humidity 45% to 70% RH .

Even under the ideal storage conditions, solder ability of inductor's electrode deteriorates as time passes, so inductors should be used within 6 months after the delivery time.

3-3 Cleaning Process Note

- 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 greatly
- The high power ultrasonic washing may damage the choke body.
- Please contact us if you need the cleaning via the above agents or ultrasonic washing.

4. Reliability

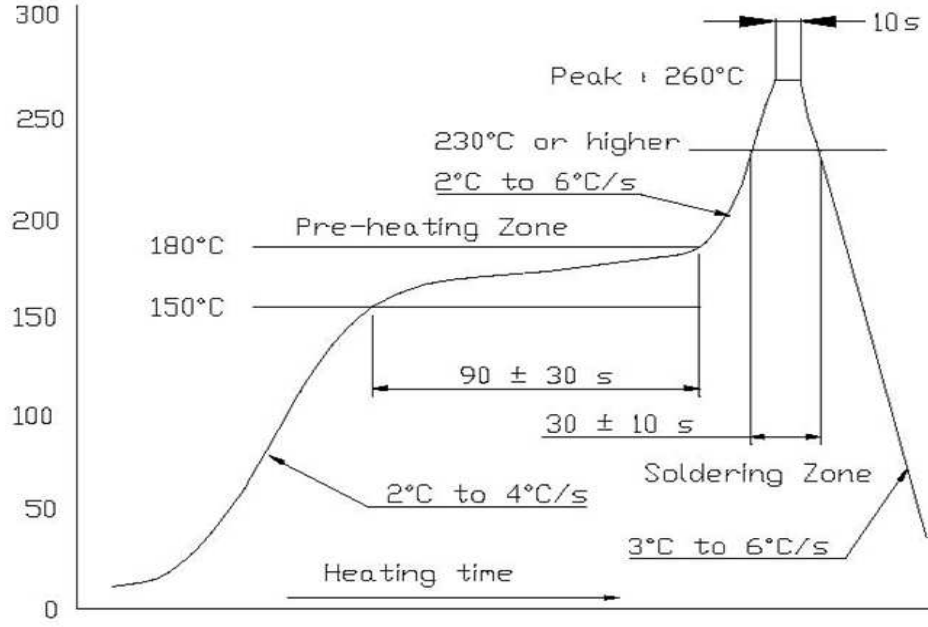
4-1 Mechanical

Item	Specification & Requirement	Test Method
Solder ability	The surface of terminal immersed shall be minimum of 90% covered with a new coating of solder	Solder heat proof : (1) Preheating : 160 ± 10℃ 90s (2) Retention time: 245 ± 5℃ for 3 ± 1 sec
Vibration	1) No mechanical damage. 2) Inductance change within±10%.	(1) Frequency : 10Hz to 55Hz to 10Hz in 60 sec as a period (2) Vibration time : period cycled for 2 hours in each of 3 mutual perpendicular directions (3) Amplitude : 1.5mm max.
Terminal strength	No detachment of terminal pin and no breakage of wire	Add static load 4.9N(500gf) to inductor through hole of test board for 10 ± 2 sec

4-2 Endurance

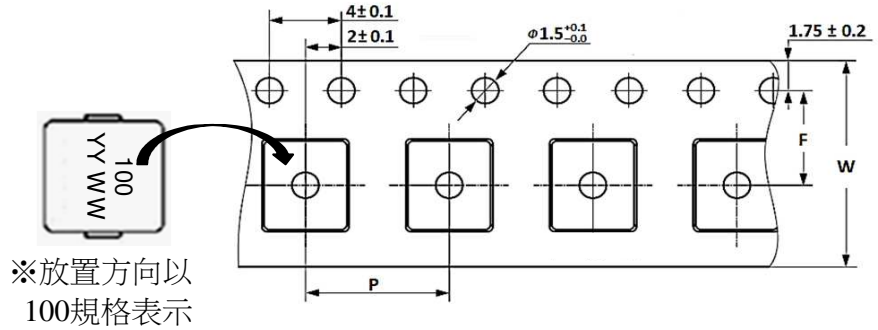
Item	Specification & Requirement	Test Method
Thermal Shock	1) No mechanical damage. 2) Inductance change within±10%.	(1) Repeat 100 cycles as follow : -40℃± 2℃, 30 ± 3 mins →Room temperature , 5 mins →+125℃± 2℃, 30 ± 3 mins →Room temperature , 5 mins (2) Recovery : 48 + 4 / - 0 hours of recovery under the standard condition after the test. (See Note)
High Temperature resistance	1) No mechanical damage. 2) Inductance change within±10%.	(1) Environment condition : 85℃ ± 2℃ Applied Current : Rated current (2) Duration : 500 + 4 / - 0 hours (See Note)
Humidity resistance	1) No mechanical damage. 2) Inductance change within±10%.	(1) Environment condition : 60℃ ± 2℃ Humidity : 90~95% Applied Current : Rated current (2) Duration : 500 + 4 / - 0 hours (See Note)
Low Temperature Storage	1) No mechanical damage. 2) Inductance change within±10%.	(1) Store temperature : -40℃ ± 2℃ (2) Duration : 500 + 4 / - 0 hours
High Temperature Storage	1) No mechanical damage. 2) Inductance change within±10%.	(1) Store temperature :+125℃± 2℃ (2) Duration : 500 +4 / -0 hours
Note : When there are questions concerning measurement result : measurement shall be made after 48 ± 2 hours of recovery under the standard condition.		

5. Reflow profile chart (Reference)



6. Packaging

6-1 Dimensions



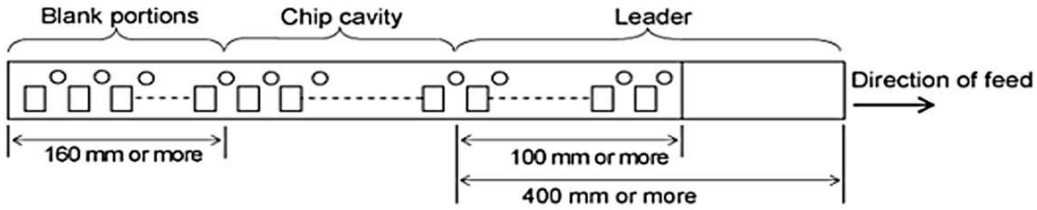
※放置方向以
100規格表示

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

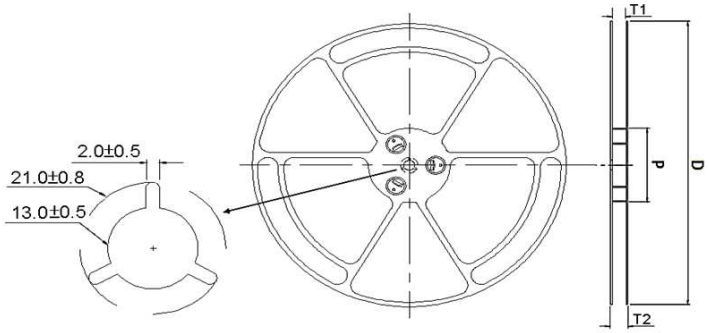
Unit：mm

※Tape採用熱封膠帶

6-2 Direction of rolling



6-3 Reel



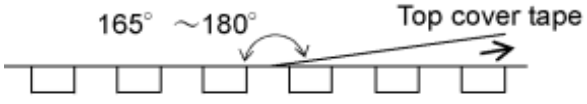
T1	T2
$8.4^{+0.2}_{-0.1}$	$12.4^{\pm 2.0}$
$12.4^{+0.2}_{-0.1}$	$17.0^{\pm 2.0}$
$16.4^{+0.2}_{-0.1}$	$21.0^{\pm 2.0}$
$24.4^{+0.2}_{-0.1}$	$28.4^{\pm 2.0}$

Code	D	P	Quantity(pcs)
Dimensions	330 ± 1.5	100 ± 1.5	1500

Unit：mm

The number of empty compartments in a reel , which shall not appear continuously, must be limited to 2.

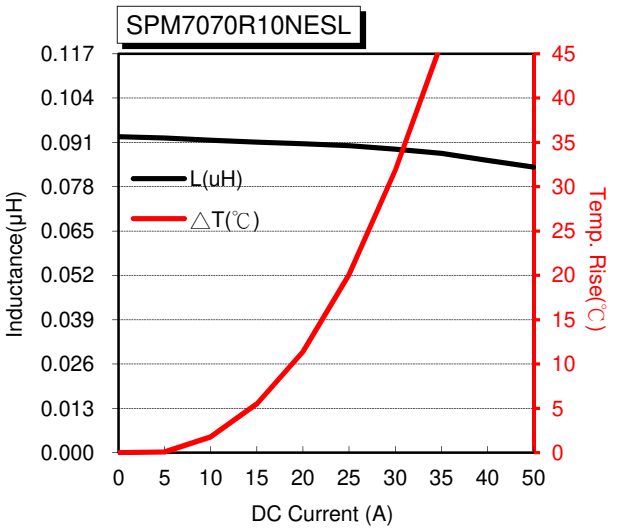
6-4 Peel force of top cover tape (peel speed：300mm/min)

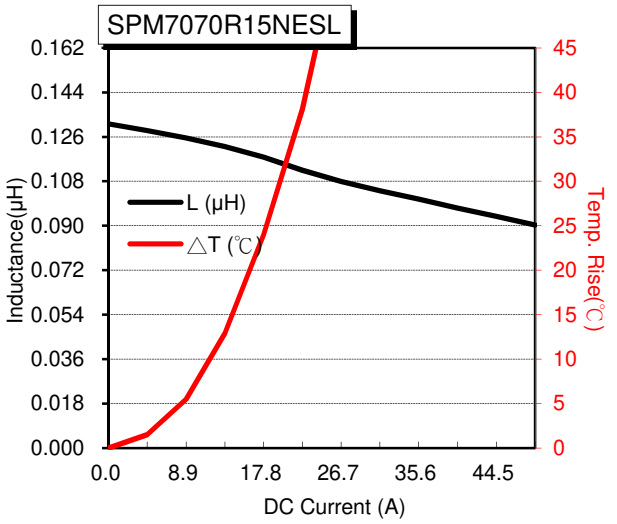


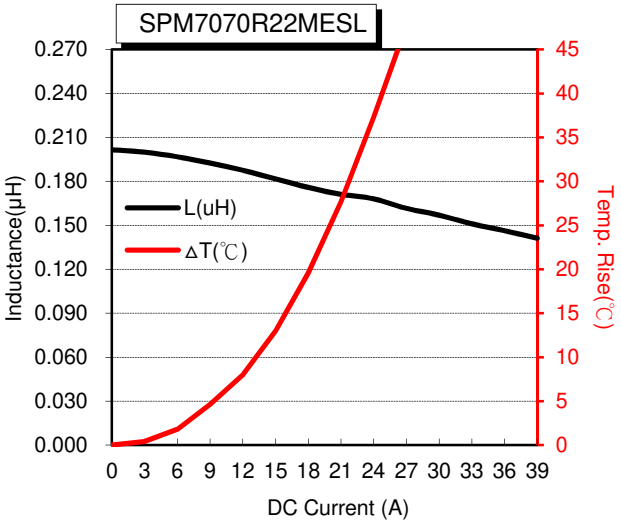
The peel speed： 300 mm/minute

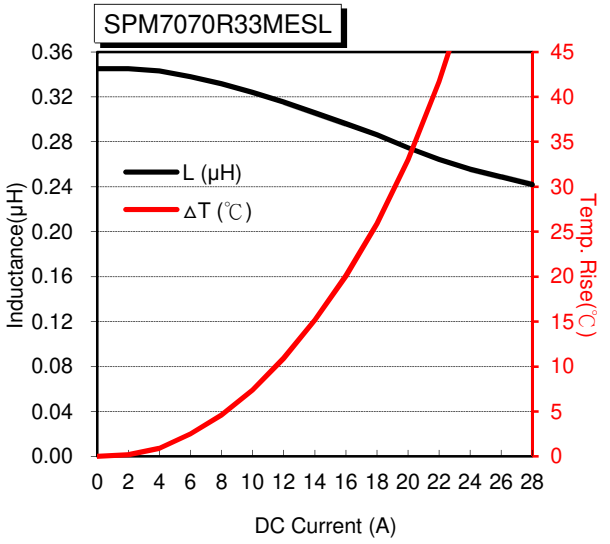
The peel force ： 0.1 to 1.3 N

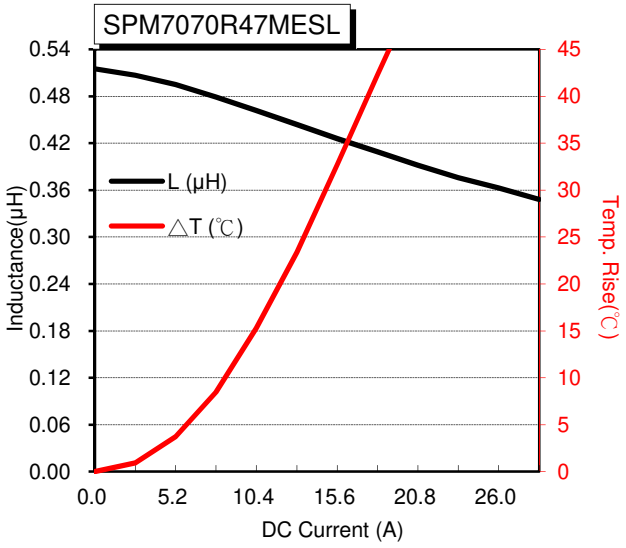
7. Current characteristic

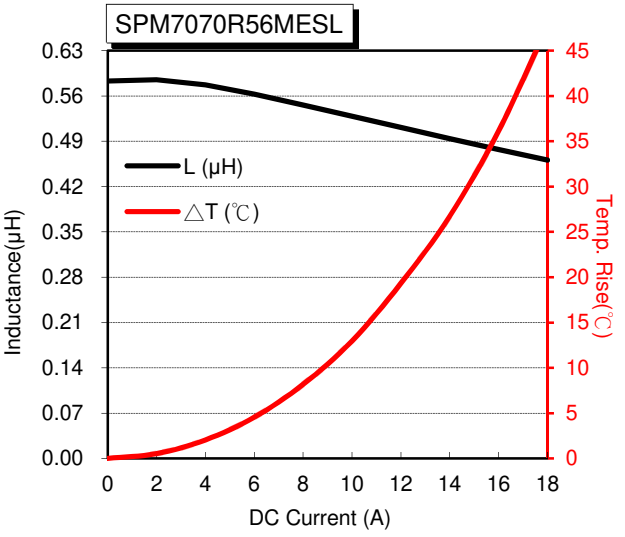




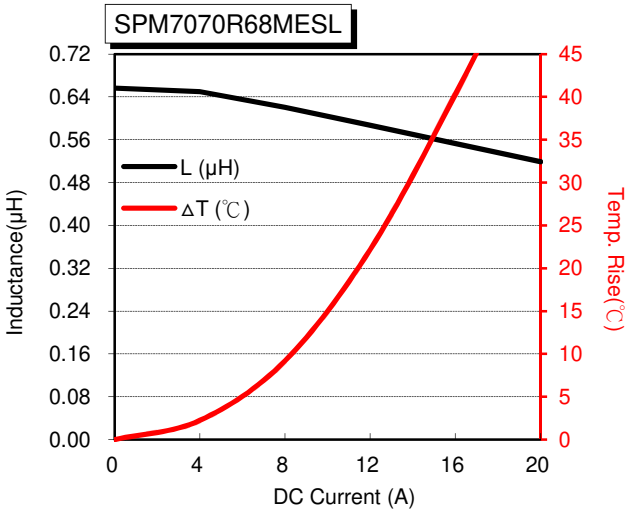


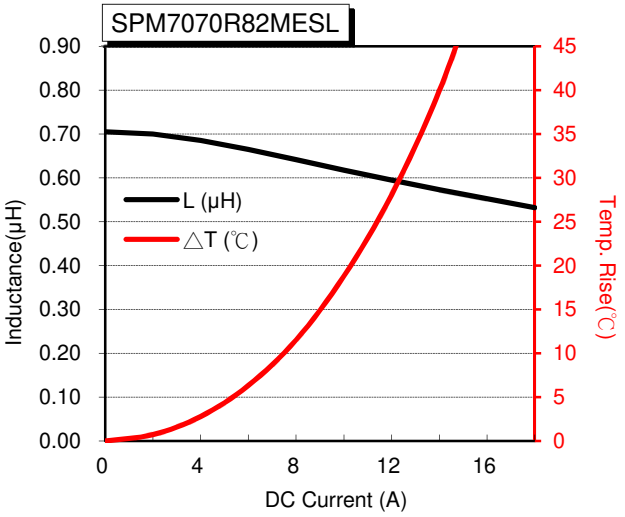


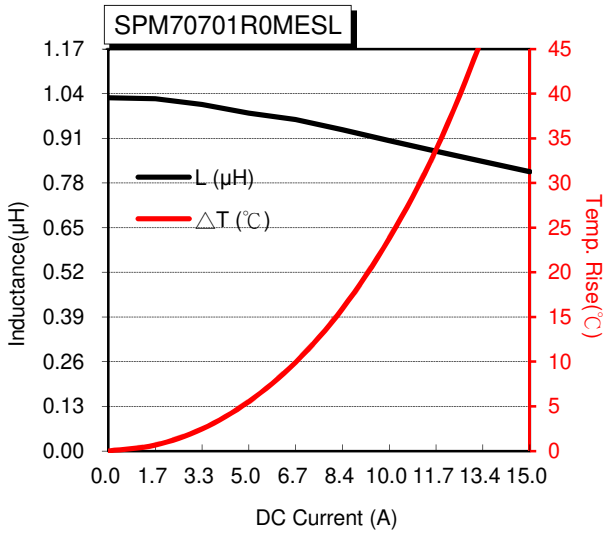


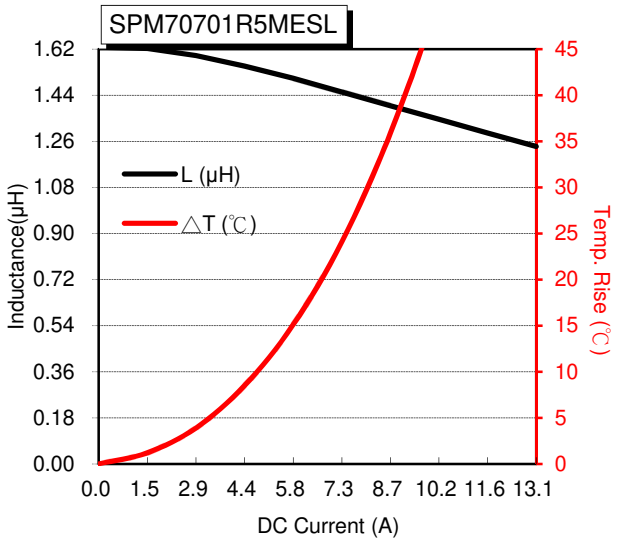


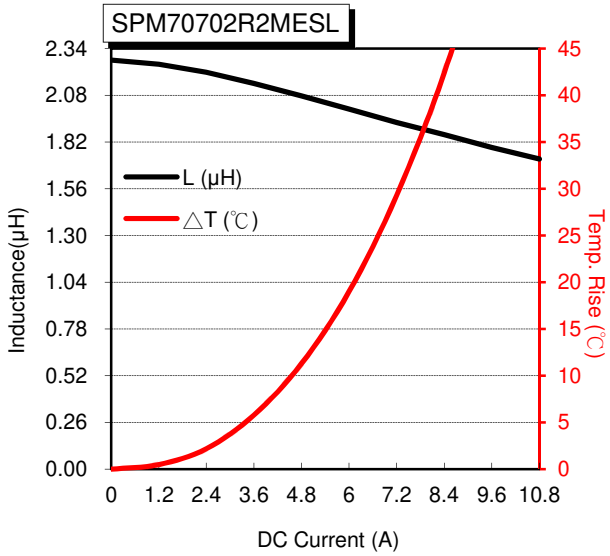
7. Current characteristic

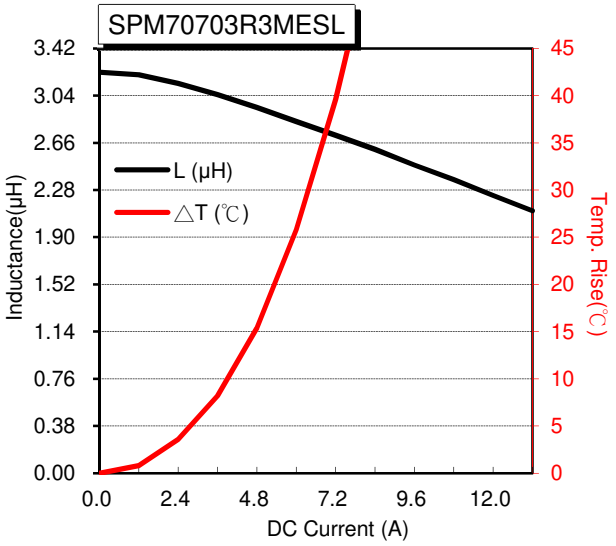




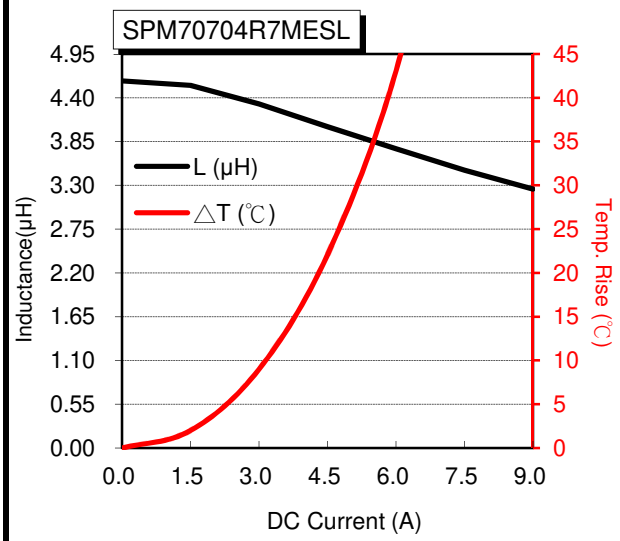


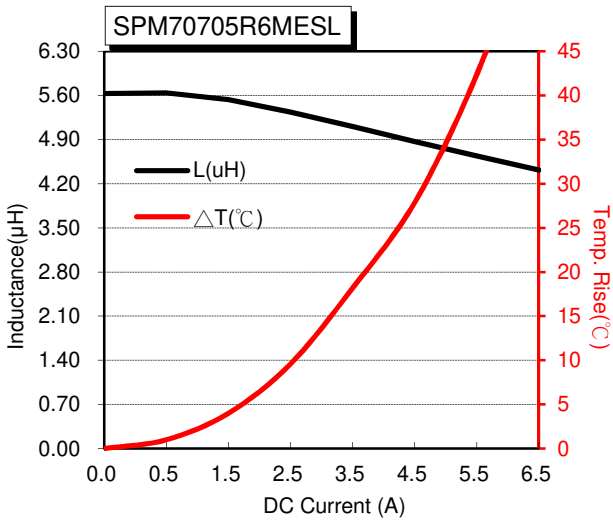


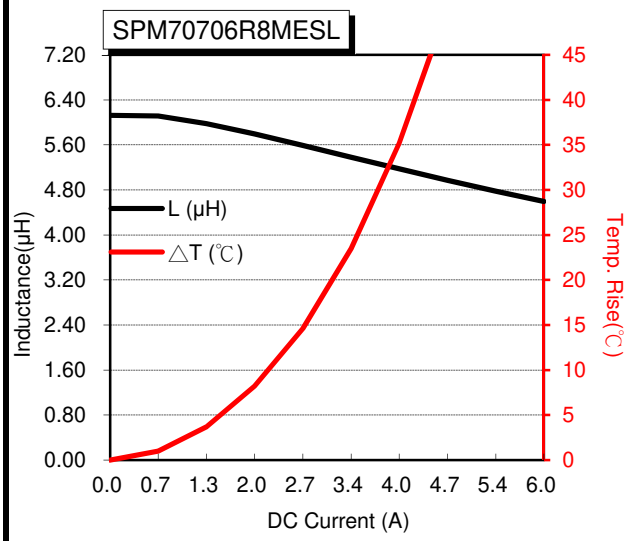


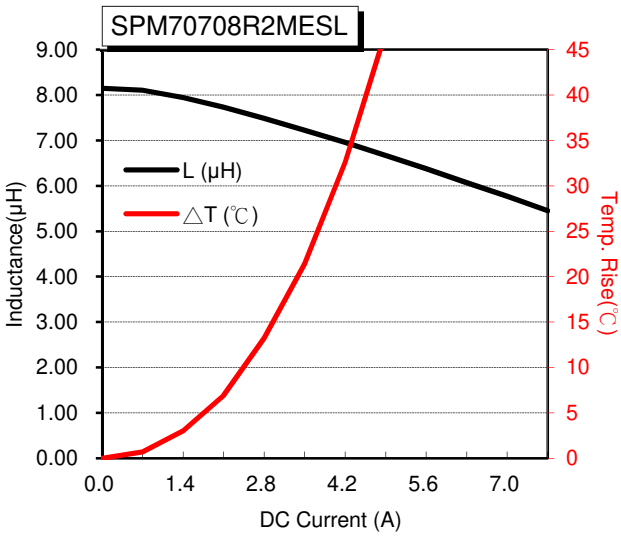


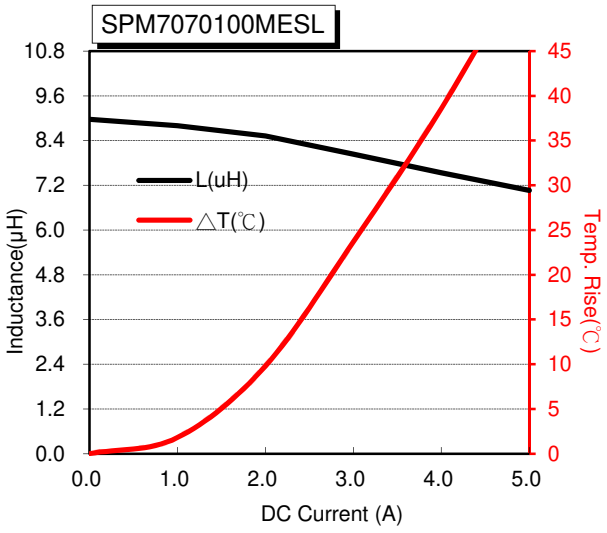
7. Current characteristic

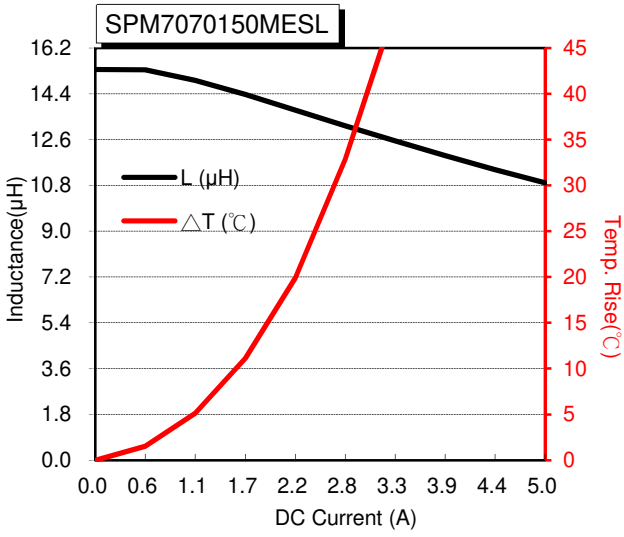












7. Current characteristic

