

COMPONENT SPECIFICATION

Part should be fulfill the banned and restricted substances requirement which specified in ESPP-3001

MODEL NO.: ALMA02	DESCRIPTION: Lnductor SMD 10uH7*7*5mm SHC0603-100M
	PART NO.: E20-00349-01
	Remark:

Rev.No.: A1	History: 第一次
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PlastoForm	吴学柱 PREPARED BY:	刘日明 CHECKED BY:	刘日明 APPROVED BY:
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SPECIFICATION FOR APPROVAL

ROHS



CUSTOMER : 捷永广建电子(深圳)有限公司

CUSTOMER P/N. : E20-00349-01

P/N. : SHC0605-100M

ITEM : 一体成型电感

ISSUED NO. (REV.) : 00

ISSUED DATE : 2014.08.15

FILE NO. :

CUSTOMER APPROVAL



APPROVED	CHECKED	DESIGNED
叶鑫	陈安鸿	王萍

DONGGUAN (MY) ELECTRON CO.,LTD.
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Product IdentificAtion:

SHC 0605 - 100 - M

① ② ③ ④

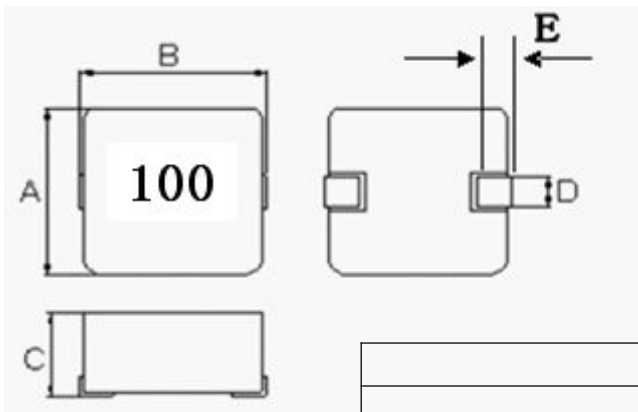
①Product Code

②Dimensions : 7.0 *7.9 * 5.0 mm

③Inductance : 100=10 μ H

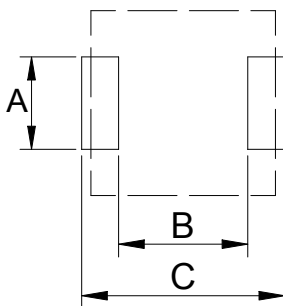
④Tolerance : M = $\pm 20\%$

External Dimensions Unit(mm):



NOTE: Dimensions in mm					
PRODUCT NO	A	B	C	D	E
SHC0605-100M	6.8 \pm 0.2	7.6 \pm 0.3	5.0MAX	3.0 \pm 0.3	1.5 \pm 0.5

Recommended PCB Layout:



TYPE	A	B	C
SHC0605	3.43 ref	3.71 ref	7.37 ref

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Electrical Specification :

PART NUMBER	INDUCTANCE Lo(μ H) \pm 20% @0A	Rdc (m Ω)		HEAT RATING CURRENT(Idc) DC AMPS1	SATURATION CURRENT(Isat) DC AMPS2
		Typ.	Max		
SHC0605-100M	10	54.8	60	4.5	5.3

TEST FREQUENCY:100KHz,0.25V

TESTING INSTRUMENT L :Agilent/4284A or Chroma /11300

Chroma /11300+3302+1320+1320S BIAS CURRENT SOURCE

R_{dc}:Chroma /16502 or CH502BC, MICRO OHMMETER

NOTES:

- 1.DC current (Idc) that will cause an approximate Δ T of 40 $^{\circ}$ C
- 2.DC current (Isat) that will cause Lo to drop approximately 35%
- 3.All test data is referenced to 25 $^{\circ}$ C ambient
- 4.Operating Temperature Range -55 $^{\circ}$ C to +150 $^{\circ}$ C
- 5.The part temperature (ambient + temp rise) should not exceed 150 $^{\circ}$ C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.



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TEST REPORT

Electrical Characteristic

Item				
	L0A	DCR	I rms	I sat
Specification	10uH	60mΩ	4.5Amps	5.3Amps
Tolerance	±20%	Max	ΔT ≦ 40°C	L ≧ 65%
1	9.63	54.98	25.3°C	76.99%
2	9.94	54.29		
3	9.88	54.84		
4	10.33	54.97		
5	9.73	54.46		
6	9.53	54.62		
7	9.70	54.45		
8	10.25	54.90		
9	10.04	55.21		
10	10.35	55.27		
\bar{X}	9.94	54.80		

External Dimensions

Item						
	A	B	C	D	E	
Specification	6.8	7.6	5.0	3.0	1.5	
Tolerance	±0.2	±0.3	MAX	±0.3	±0.5	
1	6.89	7.73	4.89	3.02	1.73	
2	6.87	7.53	4.85	3.01	1.45	
3	6.89	7.62	4.91	2.98	1.46	
4	6.88	7.63	4.92	3.03	1.48	
5	6.87	7.52	4.87	3.02	1.76	
6	6.89	7.69	4.86	2.99	1.73	
7	6.83	7.68	4.82	3.01	1.75	
8	6.90	7.62	4.92	2.99	1.73	
9	6.91	7.68	4.82	3.03	1.75	
10	6.89	7.67	4.93	3.02	1.46	
\bar{X}	6.88	7.64	4.88	3.01	1.63	

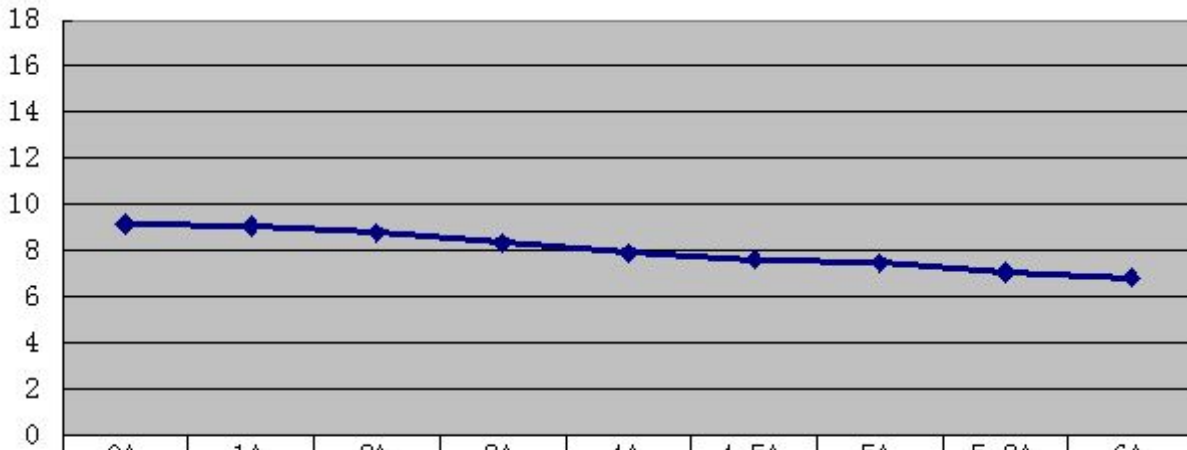


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Inductance VS DC current

Test Frequency: 100KHZ/0. 25V

IDC	L	%LOA	
0A	9.17	100.00%	
1A	9.08	99.02%	
2A	8.79	95.86%	
3A	8.36	91.17%	
4A	7.91	86.26%	
4.5A	7.63	83.21%	
5A	7.48	81.57%	
5.3A	7.06	76.99%	
6A	6.85	74.70%	



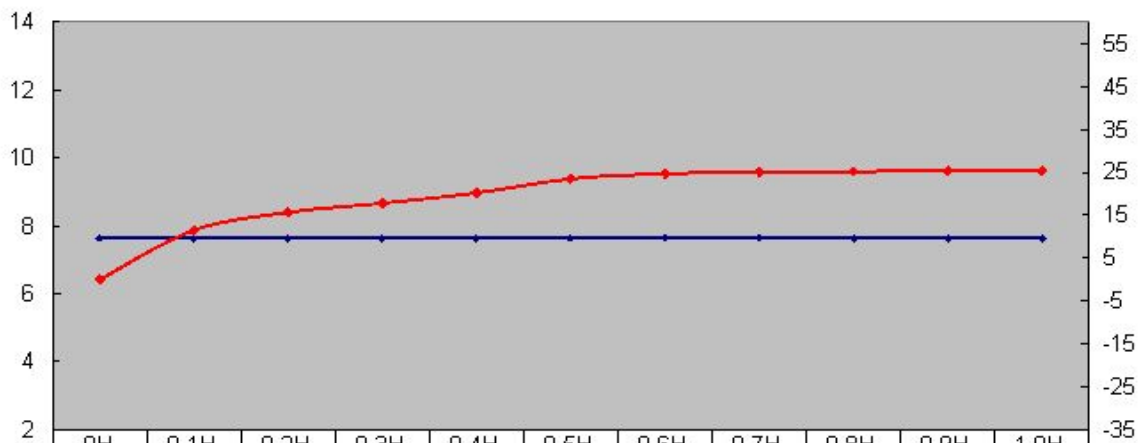
◆L	9.17	9.08	8.79	8.36	7.91	7.63	7.48	7.06	6.85
%LOA	100.00%	99.02%	95.86%	91.17%	86.26%	83.21%	81.57%	76.99%	74.70%

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DC current VS Temperature

Test Frequency: 100KHZ/0. 25V

Time	L(μ H)	T($^{\circ}$ C)	Δ T($^{\circ}$ C)
0h	7.64	30.1	0
0.1h	7.63	41.6	11.5
0.2h	7.63	45.8	15.7
0.3h	7.63	47.9	17.8
0.4h	7.63	50.3	20.2
0.5h	7.63	53.6	23.5
0.6h	7.63	54.8	24.7
0.7h	7.63	55.2	25.1
0.8h	7.63	55.3	25.2
0.9h	7.63	55.4	25.3
1h	7.63	55.4	25.3



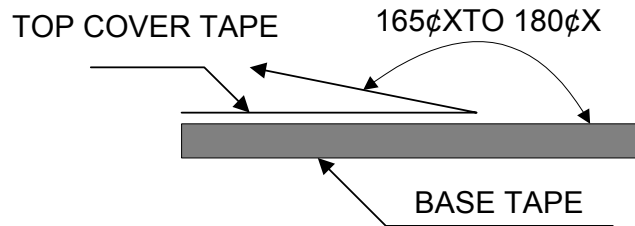
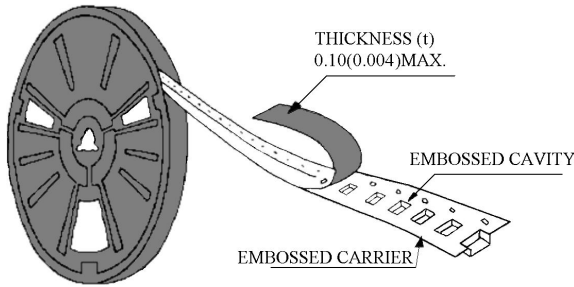
	0H	0.1H	0.2H	0.3H	0.4H	0.5H	0.6H	0.7H	0.8H	0.9H	1.0H
— L (μ H)	7.64	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63
— T ($^{\circ}$ C)	30.1	41.6	45.8	47.9	50.3	53.6	54.8	55.2	55.3	55.4	55.4
— Δ T($^{\circ}$ C)	0	11.5	15.7	17.8	20.2	23.5	24.7	25.1	25.2	25.3	25.3



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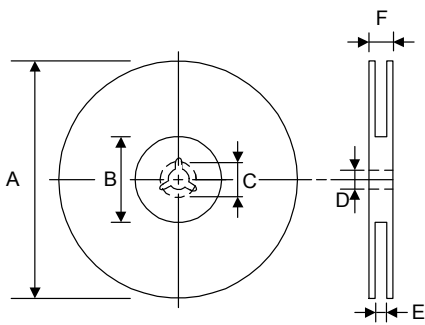
PACKAGING:

Peel-off Force:

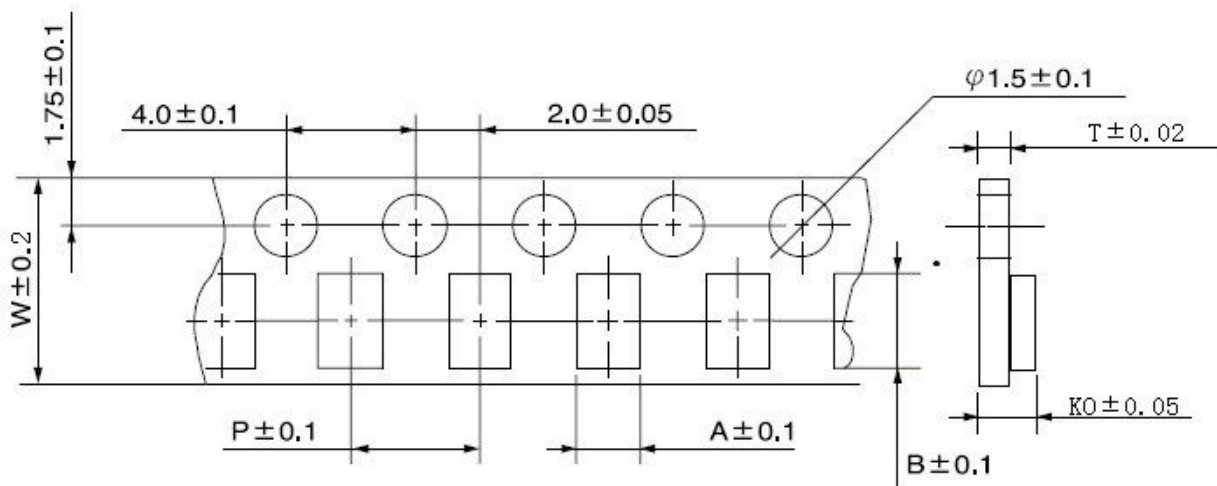


The force for peeling off cover tape is 10 to 120 grams in the arrow direction.

Dimension (Unit: mm):

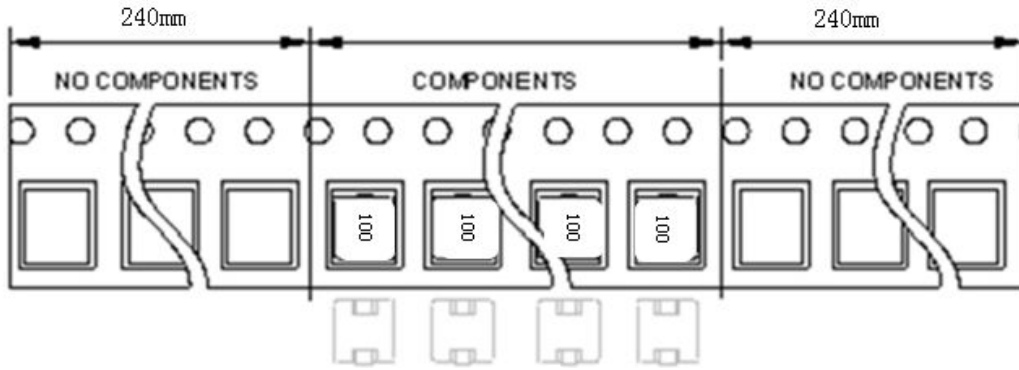


TYPE	A	B	C	D	E	F
16mm	330	100	21.0±0.8	13.0±1.0	16.0±0.5	20.0±2.0



TYPE	A	B	KO	W	P	T
SHC0605	7.4	8.2	5.1	16.0	12.0	0.4

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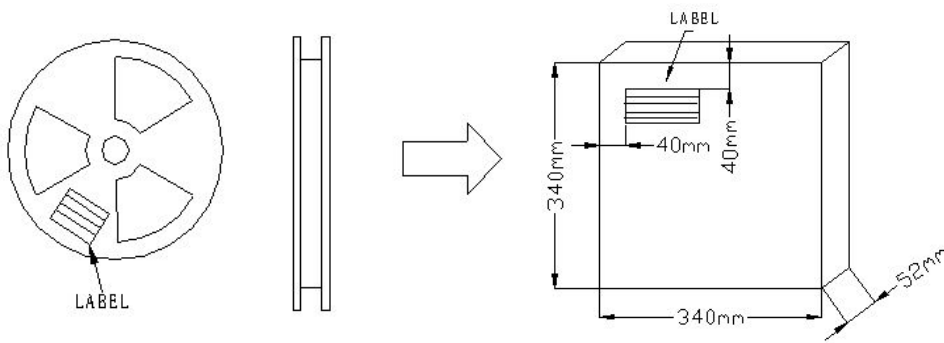


Taping Quantity:

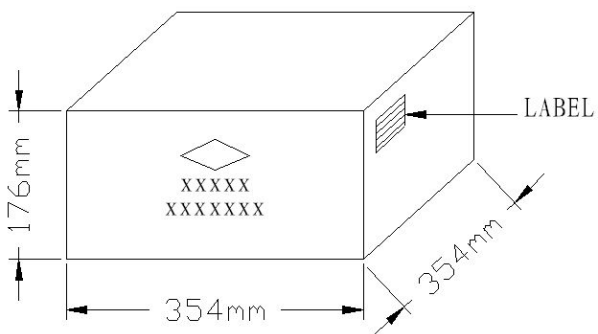
SERIES	SHC0605
PCS/Reel	1000

CARTON:

MIDDLE PACKAGING : 2 Reel /BOX



EXTERNAL PACKAGING : 3 BOX / CARTON



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RELIABILITY TEST

*Electrical performance test

Item	Specification	Test method
Inductance	Refer to the electrical specifications.	Measured with a LCR meter Agilent4284A,CH3302G
DC Resistance		Micro-ohm meter CH11025
Saturation current		DC current (A) that will cause L0 to drop approximately 35% (environment temperature of 25°C)
Heat rating current		DC current (A) that will cause an approximate ΔT of 40°C (environment temperature of 25°C)

*Mechanical performance test

bending	Change from an initial value Inductance: within $\pm 10\%$	Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 2mm and hold for 30 sec. Boad : 40*100mm , thickness: 1mm
Adhesion strength	Change from an initial value Inductance: within $\pm 10\%$	A static load using a R0.5 pressing tool shall be applied to the body of the specimen in the direction of the arrow and shall be hold for 60 \pm 5 sec. Mesure after removing pressure.
Vibration	Change from an initial value Inductance: within $\pm 10\%$	The specimen shall be subjected to a vibration of 1.5mm amplitude, sweep frequency 10~55Hz(10Hz to 55Hz to 10Hz in aperiod of one minute) for 2hr in each of 3(X,Y,Z) axes.
Mechanical shock	Change from an initial value Inductance: within $\pm 10\%$	Dropped onto printed circuit board from 100cm height three times in x, y, z directions. The terminals shall be protected.



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Item	Specification	Test method
solderability	New solder shall cover 90% minimum of the surface immersed.	Electrode shall be immersed in flux at room temperature and then shall be immersed in solder bath after preheat. Preheat 160±10℃ , 90 sec Soldering 245±5℃ , 3±1 sec
Resistance to soldering heat	Change from an initial value Inductance: within ± 10%	Reflow soldering method Preheat 150~180℃ , 90~120sec Peak temp. 260℃(230℃ over 30~40 Sec.) The specimen shall be subjected to the reflow process under the above condition 2 times. Test board shall be 0.8mm thick. Base material shall be glass epoxy resin. Soldering iron method Bit temperature 230± 7℃ Period of soldering 3sec Measurement The specimen shall be stored at standard atmospheric conditions for 1 hr in prior to the measurement.

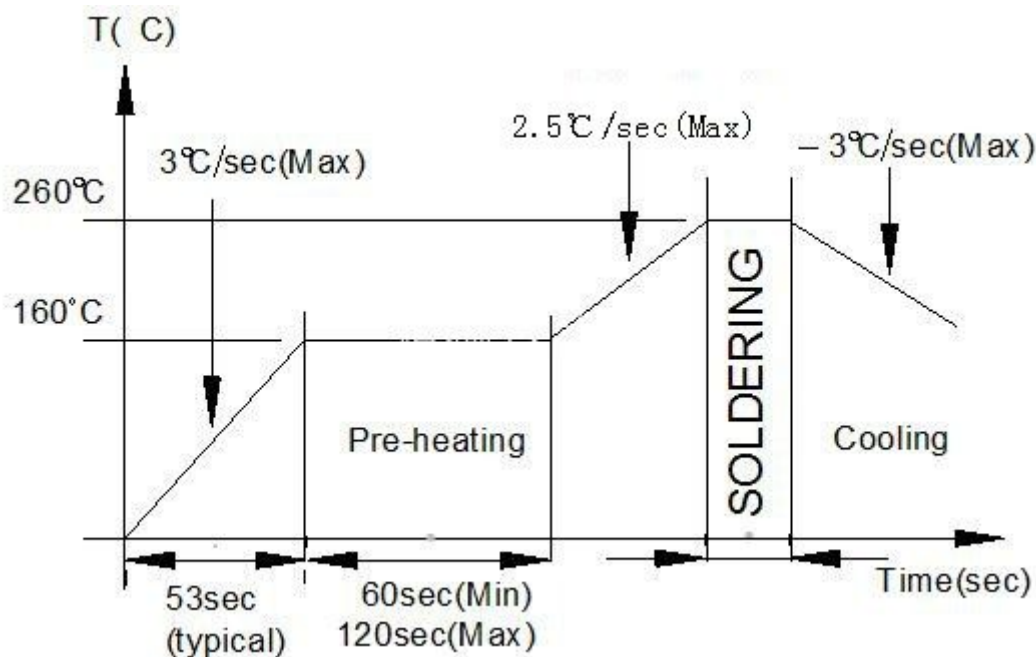
***Climatic test**

Low temperature	Change from an initial value Inductance: within ± 10%	The specimen shall be stored at a temperature of -40±3℃ for 96hr. then it shall be stabilized under standard atmospheric conditions for 1hr before measurement. measurement shall be made within 1hr.
Dry heat	Change from an initial value Inductance: within ± 10%	The specimen shall be stored at a temperature of 85±3℃ for 96hr. then it shall be stabilized under standard atmospheric conditions for 1hr before measurement. measurement shall be made within 1hr.
Dump heat	Change from an initial value Inductance: within ± 10%	The specimen shall be stored at a temperature of 60±3℃ with relative humidity of 90~95% for 96h. Then it shall be stabilized under standard atmospheric conditions for 1hr before measurement. Measurement shall be made within 1hr.
Temperature cycle	Change from an initial value Inductance: within ± 10%	The specimen shall be subjected to 10 continuous cycles of temperature change of -40℃ for 30 min and 85℃ for 30 min with the transit period of 2 min or less. Then it shall be stabilized under standard atmospheric conditions for 1hr before measurement. Measurement shall be made within 1hr.



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Recommended Reflow Soldering Profile:



IR Reflow soldering :

Preheat at 3°C per second to 160°C and using lead free solder ,
 IR at 260°C for 10 seconds.

Rework flow:

Component must withstand two IR reflow cycles with a cool down
 between cycles.



★ NOTES:

The contents of this data sheet are subject to change without notice. Please confirm specifications and delivery conditions when placing your order.