Coilmaster

RoHS Compliant

SPECIFICATION APPROVAL

CUSTOMER : Özdisan

PRODUCT : SQH6045SP-330M-LF

Pb-Free

CODE NO. : C03060188

CUS. CODE :

SPEC.NO. : C-3060-188(00)

DATE : 14-Mar-23

CUSTOMER APPROVAL

Coilmaster Electronics Co., Ltd.
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PREPARED BY	APPROVED BY	AUTHORIZED BY
JEAN	TONY	MASCOT

PRODUCT	SQH6045SP-330M-LF	COIL SPECIFICATION	DATE	2023/3/14
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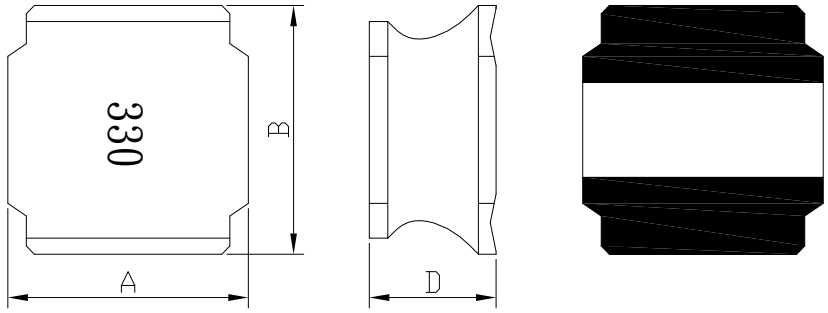
EXTERNAL DIMENSIONS :

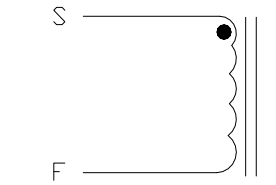


A ： 6.3 Max. m/m
B ： 6.3 Max. m/m
D ： 4.5 Max. m/m

ELECTRICAL CHARACTERISTIC :

L(μH)	:	33±20%	100KHz 1V
DCR(mΩ)	:	189 Max.	145 Typ.
Isat(A)	:	1.5 Max.	(L1.5A MAX ≧0Ax70%)
INDUCTANCE DROP :		30% Typ. @ IDC	1.5 A
Irms(A)	:	1.4 Max.	
Operating Temp. Range :		- 40℃ ~ +125℃	

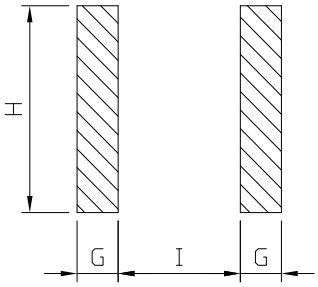
SCHEMATIC DRAWING ：



"●" START FOR STAND

ϕ Ts(Ref.)

PCB PATTERN :



G : 2.05 m/m
H : 5.30 m/m
I : 2.40 m/m

MATERIAL LIST :

NO	ITEM	MATERIAL	SUPPLIER OF THE MATERIAL
1	CORE	Ferrite Core	TAK or equ
2	WIRE	Cooper Wire P180	Elektrisola or equ
3	EPOXY	Soft Magnetic Epoxy	Coilmaster or equ
4			

COILMASTER ELECTRONICS CO., LTD.

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TEST DATA

ELECTRICAL CHARACTERISTICS								
MEAS. ITEM	L(μH)	DCR(mΩ)	Isat(A)					
TEST FREQ.	100KHz 1V	Max.	Max.					
YOUR			L(1.5A)					
SPEC.	33±20%	189.0	≧0Ax70%					
1	30.57	146.000						
2	30.76	146.000						
3	29.68	150.000						
4	30.23	150.000						
5	30.65	150.000						
6	30.20	150.000						
7	29.60	150.000						
8	29.35	150.000						
9	29.65	149.000						
10	29.30	150.000						
X	**29.999**	**149.000**	**#DIV/0!**					
R	**1.46**	**4.00**	**0.00**					

DIMENSION								
MEAS. ITEM	A	B	C	D				
TEST FREQ.	m/m	m/m	m/m	m/m				
YOUR								
SPEC.	6.3 Max.	6.3 Max.		4.5 Max.				
1	6.13	5.86		4.28				
2	6.12	5.86		4.28				
3	6.12	5.86		4.28				
4	6.12	5.86		4.29				
5	6.13	5.86		4.29				
6	6.13	5.86		4.29				
7	6.13	5.86		4.27				
8	6.13	5.86		4.29				
9	6.12	5.86		4.28				
10	6.13	5.86		4.28				
X	**6.126**	**5.860**		**4.283**				
R	**0.01**	**0.00**		**0.02**				

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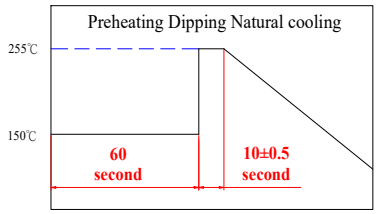
TEST ITEMS	SPECIFICATIONS	TEST CONDITIONS / TEST METHODS
ELECTRICAL PERFORMANCE TEST		
L	REFER TO STANDARD ELEC-TRICAL CHARACTERISTIC LIST.	CH-1061 OR EQUIV.
DCR		CH-502A OR EQUIV
RATED CURRENT		APPLIED THE CURRENT TO COILS THE IDUCTANCE CHANGE SHOULD BE LESS THAN 30% TO INITIAL VALUE AND TEMPERATURE RISE SHOULD NOT BE MORE THAN 40℃..
TEMPERATURERISE TEST	40℃ MAX (△t)	1. APPLIED THE ALLOWED DC CURRENT FOR 4 HOURS. 2. TEMPERATURE MEASURE BY DIGTAL SURFACE THERMOMETER.
OVER LOAD TEST	NO EVIDENCE OF ELECTRICAL DAMAGE	APPLIED 1.5 TIMES OF RATED ALLOWED DC CURRENT TO INDUCTORS FOR A PERIOD OF 5 MINUTES.
MECHANICAL PERFORMANCE TEST		
SOLDER HEAT RESISTANCE	1. INDUCTORS SHOULD HAVE NO EVIDENCE OF ELEC- TRICAL AND MICHANICAL DAMAGE 2. INDUCTANCE SHOULD NOT HANGE MORE THAN±10% 3. SOLDER MATERIAL WILL BE LEAD FREE.	PREHEAT:150℃ 60SECS SOLDER TEMPERATURE: 255±5℃ FLUX: ROXIN.. DIP TIME:10±0.5SECS. 
VIBRATION TEST (LOW FREQUENCY)		1.AMPLITUDE: 1.5 mm 2.FREQUENCY: 10-55-10HZ / 1 MIN 3.DIRECTION: X, Y, Z 4.DURATION: 2 HRS/X, Y, Z
SHOCK TEST		INDUCTORS SHOULD BE DROPPED 10 TIMES FROM A HEIGHT OF 1m ONTO 3cm WOODEN BOARD.

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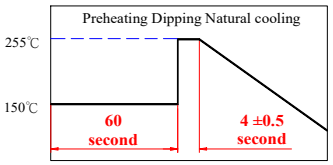
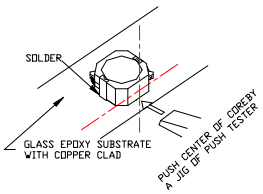
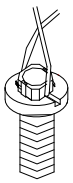
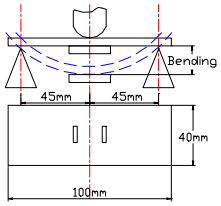
TEST ITEMS	SPECIFICATIONS	TEST CONDITIONS / TEST METHODS
MECHANICAL PERFORMANCE TEST		
SOLDERABILITY TEST	MORE THAN 90% OF TERMINAL ELECTRODE SHOULD BE COVERED WITH SOLDER.	AFTER FLUXING, INDUCTOR SHALL BE DIPPEDIN A MELTED SOLDER BATH AT 255±5℃ FOR 5 SECONDS 
COMPONENT ADHESION (PUSH TEST)	1.5Kg Min	THE DEVICE SHOULD BE REFLOW SOLDERED (255±5℃ FOR 10 SECONDS) TO A TINNED COPPER SUBSTRATE. A DYNOMETER FORCE GAUGE SHOULD BE APPLIED TO THE SIDE OF THE COMPONENT. THE DEVICE MUST WITH- STAND A MINIMUM FORCE OF 1.5Kg WITHOUT AILURE OF THE TERMINATION . ATTACHED TO COMPONENT. 
COMPONENT ADHESION (PULL TEST)	1.5Kg Min	1.INSERT 10cm WIRE INTO THE REMAINING OPEN EYE BEND THE ENDS OF EVEN WIRE LENGTHS UPWARD AND WIND TOGETHER 2. TERMINAL SHALL NOT BEREMARKABLY DAMAGED 
FLEXTURE STRENGTH	THE FORCES APPLIED SHOULD NOT DAMAGE THE DIELECTRIC.	SOLDER A CHIP ON A TEST SUBSTRATE, BEND THE SUBSTRATE BY 2mm AND RETURN. 
RESISTANCE TO SOLVENT TEST	THERE SHOULD BE NO CASEDEFORMATION, CHANGE IN APPEARANCE OR BITERATION OF MARKING	INDUCTERS SHALL WITHSTAND 6 MINTES OF ALCOHOL

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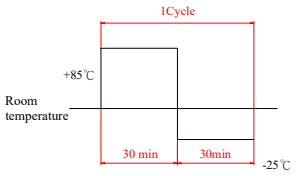
TEST ITEMS	SPECIFICATIONS	TEST CONDITIONS / TEST METHODS
CLIMATIC TEST		
TEMPERATURE CHARACTERISTIC	1.APPEARANCE:NO DAMAGE 2.INDUCTANCE:WITHIN±10% OF INITIAL VALUE.	- 40℃ ~ +125℃
HUMIDITY TEST		60℃±2℃ / 96±2 HOURS
LOW TEMPERATURE STORAGE		1.TEMPERATURE:- 25℃±2℃ 2.TIME: 96±2 HOURS
THERMAL SHOCK TEST		1.-25±5℃ FOR 30 MINUTES. +80±5℃ FOR 30 MINUTES. 2.TOTAL: 10 CYCLES 
HIGH TEMPERATURE STORAGE		1.APPLIED CURRENT: MAX RATED CURRENT 2.TEMPERATURE:80℃±2℃
NOTE：INDUCTORS ARE TO BE TESTED AFTER 2 HOUR AT ROOM TEMPERATURE.		
LIFE TEST		
HIGH TEMPERATURE LOAD LIFE TEST	INDUCTORS SHOULD BE NO EVIDENCE OF SHORT OR OPEN CIRCUIT	1. TEMPERATURE: 80±2℃ 2. TIME: 500±12 HOURS 3. LOAD: ALLOWED DC CURREN
HUMIDITY LOAD LIFE TEST		1. TEMPERATURE: 60±2℃ 2. R.H.: 90-95% 3. TIME: 500±12 HOURS 4. LOAD: ALLOWED DC CURREN

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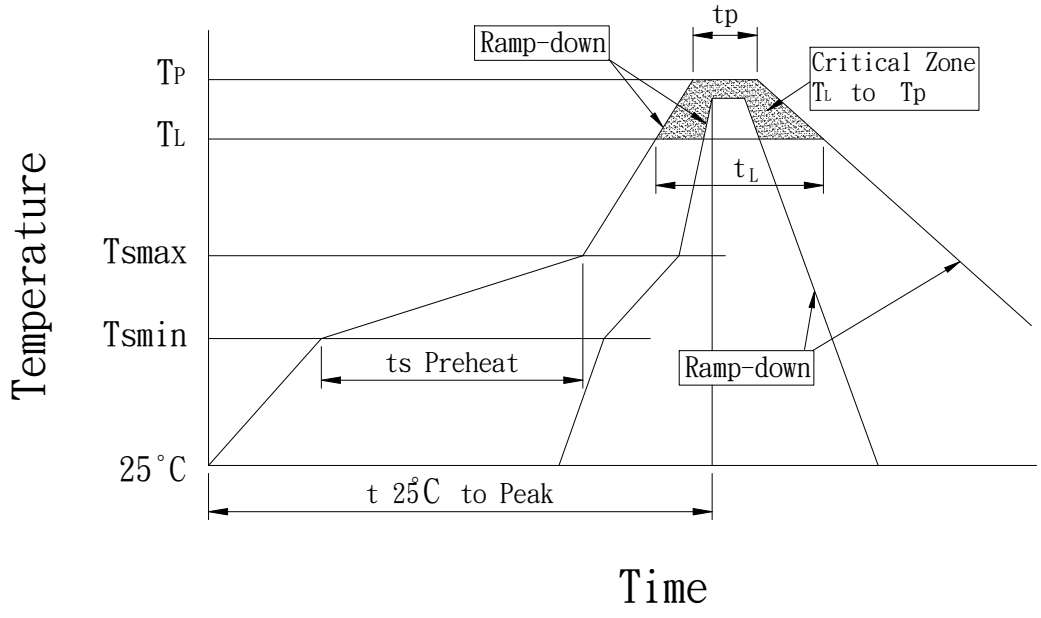
RECOMMENDED SOLDERING CONDITIONS：

CLASSIFICATION REFLOW PROFILES

Profile Feature	Sn-Pb Eutectic Assembly		Pb-Free Assembly	
	Large Body	Small Body	Large Body	Small Body
Average ramp-up rate (T_L to T_P)	3℃/second max.		3℃/second max.	
Preheat -Temperature Min (Ts_{min}) -Temperature Min (Ts_{max}) -Time (min to max) (ts)	100℃ 150℃ 60-120 seconds		150℃ 200℃ 60-180 seconds	
Tsmax to T_L -Ramp-up Rate			3℃/second max.	
Time maintained above: -Temperature (T_L) -Time (t_L)	183℃ 60-150 seconds		217℃ 60-150 seconds	
Peak Temperature (Tp)	225 +0/-5℃	240 +0/-5℃	245 +0/-5℃	255 +5/-5℃
Time within 5℃ of actual Peak Temperature (tp)	10-30 seconds	10-30 seconds	10-30 seconds	20-40 seconds
Ramp-down Rate	6℃/second max.		6℃/second max.	
Time 25℃ to Peak Temperature	6 minutes max.		8 minutes max.	

Note : All temperatures refer t topside of the package. Measured on the package body surface.

REFLOW SLODERINGS



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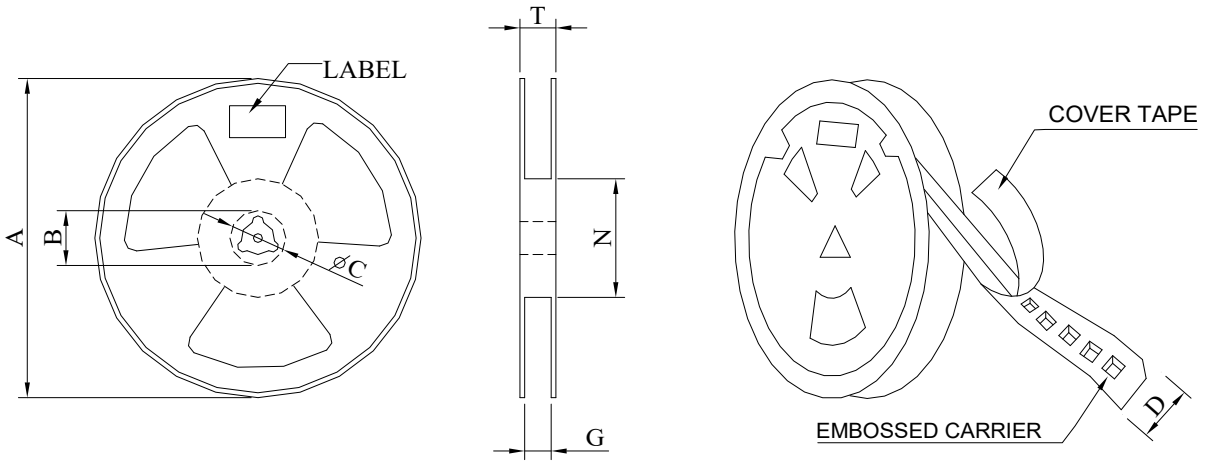
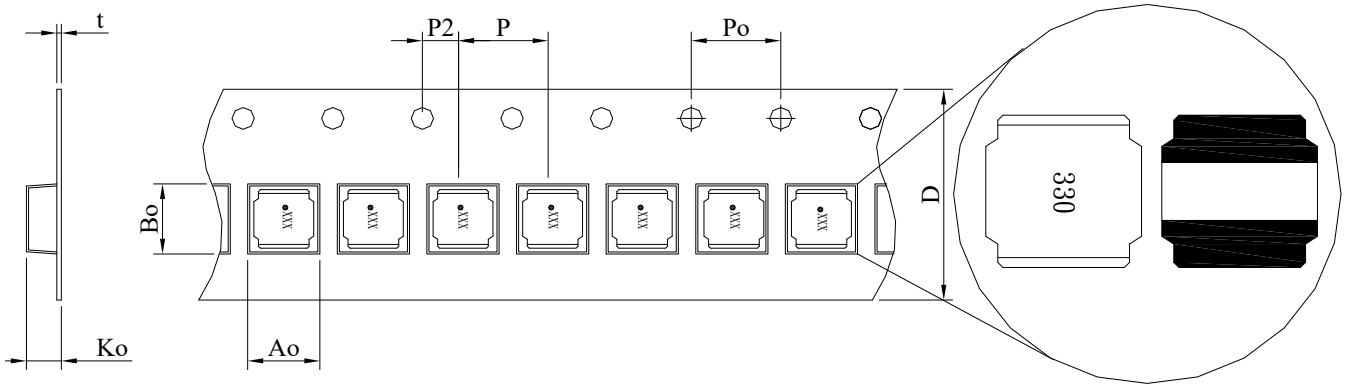
PACKAGE：



*CARRIER TAPE WIDTH：D



STYLE	DIMENSIONS (m/m)														
	Q'TY (PCS)	A	B	C	D	G	N	T	Ao	Bo	Ko	t	P	Po	P2
330	1000	330	—	—	16	16.6	99.5	21	6.4	6.4	4.7	0.4	8	4	2.00 ±0.1

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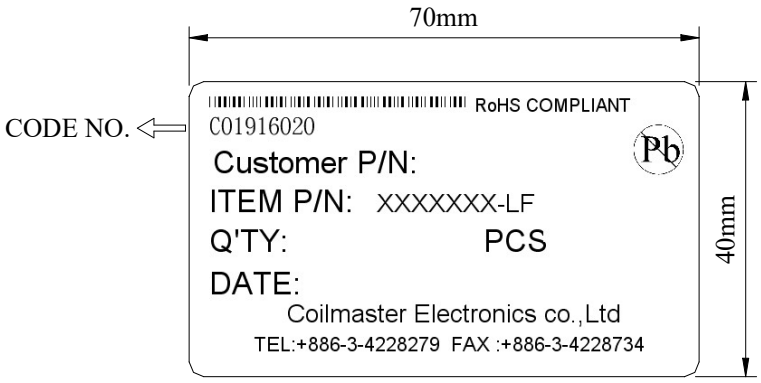
LABLE：



INNER BOX LABEL

OUT BOX LABEL

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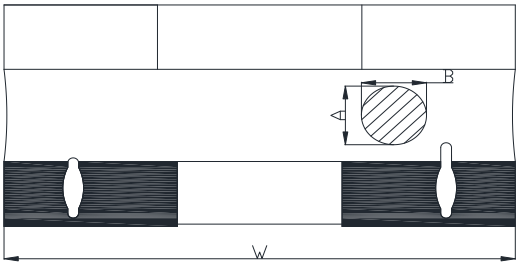
Void appearance tolerance Limit:

Size of voids occurring to coating resin is specified below.



Exposed wire tolerance limit for the coating resin part on the product side is specified as follows:

Size of exposed wire occurring to coating resin is specified below.

1. Length direction (dimension a): Dimension b is unspecified.
2. Width direction (dimension b): Acceptable when a≦w/2.
3. The total area of exposed wire occurring to each sides is not greater than 50% of coating resin area, and is acceptable.

Core chipping

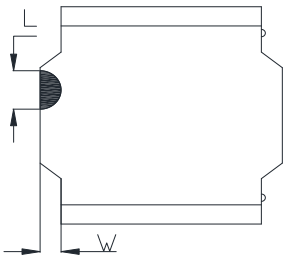
The appearance standard of the chipping size on top side, and bottom side ferrite core is listed below.

Chip off is generated during molding and manufacturing process.

Chip off acceptance limits subjected to the product size.

Our current Defect limit is based on the IPC-A-610.

Some chip off does not impact the product function, see the IPC standard 1 & 2.



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For the product dimension for SQH20 /SQH25 series L: ≦50 % of the length / W: ≦25 % of the width

For the product dimension for SQH30 /SQH40 series L: 0.7mm Max / W: 0.7mm Max

For the product dimension for SQH 50/ SQH60 / SQH80 seri L: 1.0mm Max / W: 1.0mm Max

Defects typically occur at the corners and edges of the product.

These may manifest as slight blackening and roughness,

but as long as they do not affect the product's performance and reliability, they are within acceptable limits.

COILMASTER ELECTRONICS CO., LTD.

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Cautions and Warnings：

1. All of the components are manufactured, designed, and promoted for applying in general electronics devices, for the specific area such as automotive, medical, military and aerospace except for general electronic devices, Coilmaster must be asked for written approval before incorporating the components into these areas.

2. The components that will be used in high-reliability / high level of safety applications should be pre-evaluated by the end customer. Especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health. The customer shall be responsible for evaluating and confirming Coilmaster product is suitable for use in customer's applications.

3. Customer must be cautioned to verify that data sheets are the updated ones before placing orders. In the individual cases, any trouble or failure of electronic components happens during their long span cannot be eliminated even follow the instruction with existing technology.

4. Washing / Cleaning process may jeopardize the product and cause the defect. Washing agents may harm the long-term functionality of the product

5. The storage period should not be longer than 12 months (In the specific storage environment). The oxidization may happen on the terminals. Hence all the products shall be used within 12 months after the shipping date. If the time is over 12 months, please check the solderability before use it.

6. Products should not be kept in unsuitable storage conditions, such as areas susceptible to high humidity, high temperatures, dust or corrosion.

7. Don't touch electrodes directly with bare hands as oil secretions may inhibit soldering. Always ensure optimum conditions for soldering.

8. Don't bend the terminals or subject them to excessive stress.

9. Please ensure that all terminals and case lugs are completely fixed with solder onto PCB

10. Ensure the tuning slug or cap is not fixed by solder flux during the production process.

11. Avoid placing coils near the edge of the PCB

12. Don't touch any exposed winding part and avoid coming into contact with the guide of the electrode in automatic mounting

13. The inductor / coil / common mode choke generates heat when current is applied. Please take care of this during the design.

14. Always handle the product with care to prevent the damage.

15. Our specification specifies the quality of the component as a single unit. Please ensure the component is thoroughly evaluated in your application circuit. Even for customized products, conclusive validation of the component in the circuit can only be carried out by customer.

16. The general testing condition is in the room temperature 25 +/- 5°C and humidity under 65% RH, which is applied to all products.

17. If have any query, please feel free to contact our sales department.