

APPROVAL SHEET

Customer Name	_____
Product Name:	Chip high frequency inductors(Free-Lead)
Manufacturer P/N	VHF
Customer P/N	_____
Version No.	A-3

Manufacturer	
Draft	Check
Date	2014-5-20

Approval Si gnet	
Date	_____

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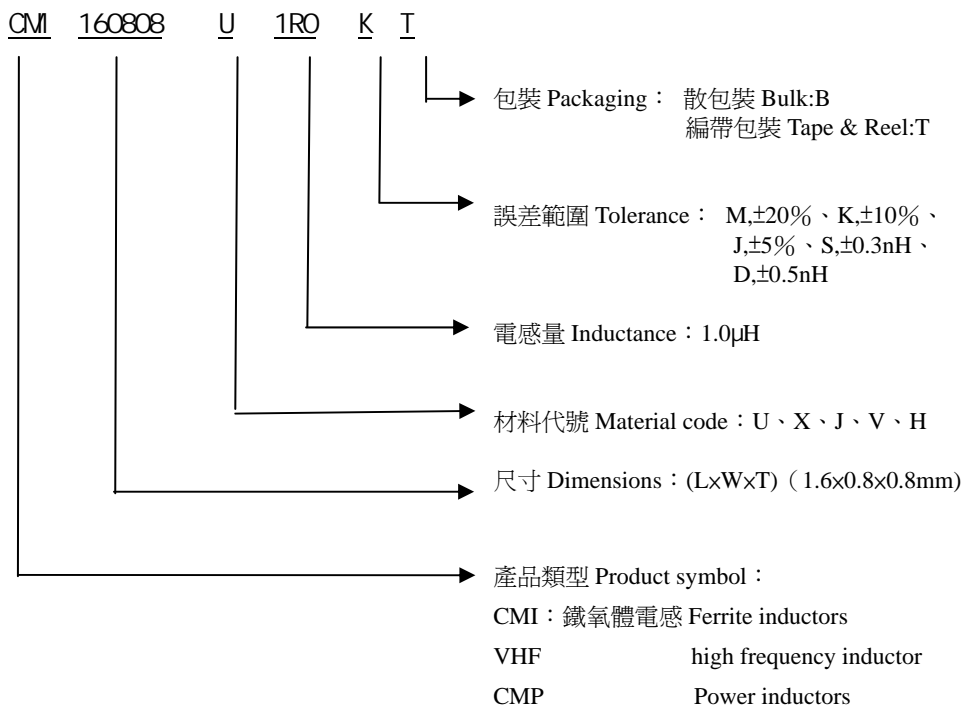
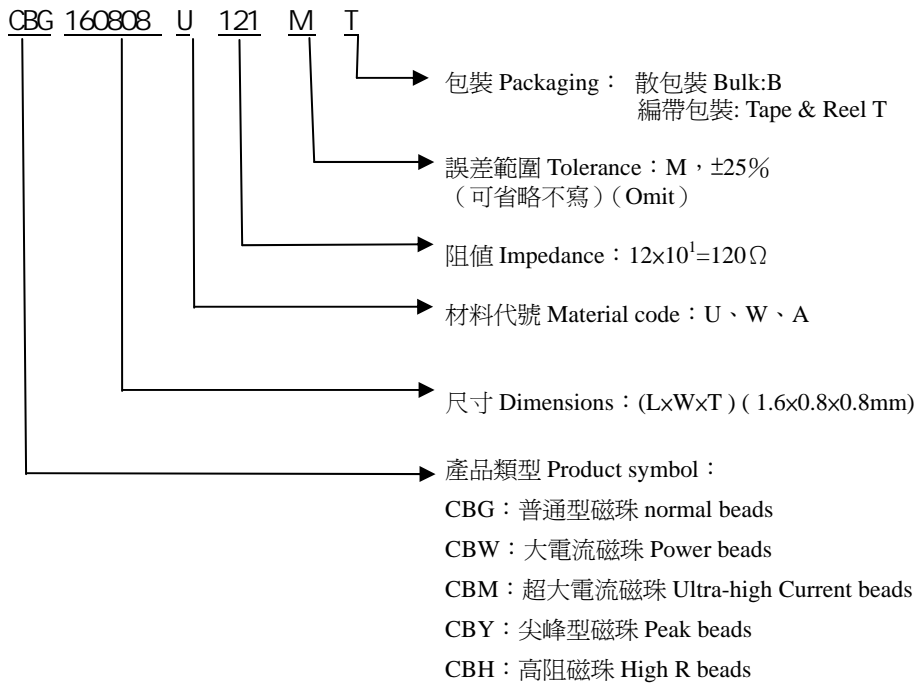


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Product Spec. Model


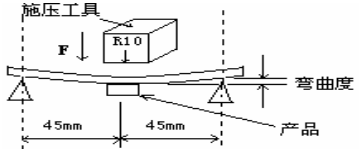


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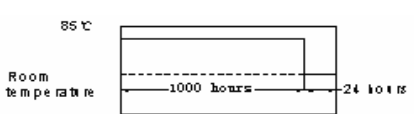
Reliability Testing Items

NO	Item	Standard	Test Method
1	Operating Temperature Range	-40 +85	
1	Solder ability	<p>90%</p> <p>At least 90% of terminal electrode should be covered with solder</p>	<p>: 120 150</p> <p>: 60s</p> <p>Sn/Pb=63/37</p> <p>: 230± 5</p> <p>: 4± 1s</p> <p>3 5s</p> <p>: 25mm/sec</p> <p>Preheating temperature:120 to 150</p> <p>Preheating time: 60s</p> <p>Solder Sn / Pb = 63/37 pure Sn product use 100% of the Sn solder.</p> <p>Solder temperature: 230± 5</p> <p>Duration : 4± 1s</p> <p>Immersion into the colophony flux for 3 to 5 sec.</p> <p>Immersion speed: 25mm/sec</p>
2	Resistance to Soldering	<p>75%</p> <p>H ± 10%</p> <p>(V U): ± 20%</p> <p>(X): ± 25%</p> <p>(J): ± 30%</p> <p>± 30%</p> <p>± 20%</p> <p>± 30%</p> <p>At least 75% of terminal electrode should be covered with solder.</p> <p>No mechanical damage.</p> <p>Inductance</p> <p>H change within ± 10%</p> <p>V U change within ± 20%</p> <p>X change within ± 25%</p> <p>J change within ± 30%</p> <p>Q value change(ferrite): within ± 30%</p> <p>Q value change(ceramic): within ± 20%</p> <p>Impedance change: within ± 30%</p>	<p>: 120 150</p> <p>: 60s</p> <p>Sn/Pb=63/37</p> <p>: 260± 5</p> <p>: 10± 0.5s</p> <p>3 5s</p> <p>: 25mm/sec</p> <p>Preheating temperature: 120 to 150</p> <p>Preheating time: 60s</p> <p>Solder Sn / Pb= 63/37 pure Sn product use 100% of the Sn solder.</p> <p>Solder temperature: 260± 5</p> <p>Duration : 10± 0.5s</p> <p>Immersion into the colophony flux for 3 to 5 sec.</p> <p>Immersion speed: 25mm/sec</p>

4	Reliability Testing Items
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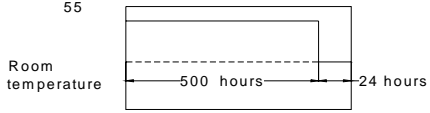
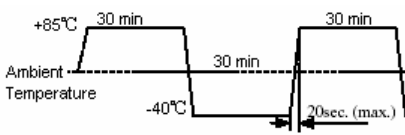
NO	Item	Standard	Test Method
4	Adhesion of electrode	The termination and body should be no damage.	<p>1005 1608 5N 2012 3216 3225 4516 4532 10N 10±1S Applied force: 5N force for 1005 and 1608 series. 10N force for 2012 3216 3225 4516 4532 series. Keep time 10±1S</p> 
5	Low temperature resistance	<p>± 10% ± 30% ± 20% ± 30%</p> <p>No mechanical damage. Inductance change: within ± 10% Q value change(ferrite): within ± 30% Q value change(ceramic): within ± 20% Impedance change: within ± 30%</p>	<p>: -55± 2 : 500²⁴₀ h Temperature: -55± 2²⁴ Testing time: 500⁰ h</p>
6	Bending strength	<p>± 10% ± 30% ± 20% ± 30%</p> <p>No mechanical damage. Inductance change: within ± 10% Q value change(ferrite): within ± 30% Q value change(ceramic): within ± 20% Impedance change: within ± 30%</p>	<p>: 2mm : : 0.8mm Warp: 2mm Testing board: glass epoxy-resin substrate Thickness: 0.8mm</p> 

4	Reliability Testing Items
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NO	Item	Standard	Test Method
7	Drop	$\pm 10\%$ $\pm 30\%$ $\pm 20\%$ $\pm 30\%$ No mechanical damage. Inductance change: within $\pm 10\%$ Q value change(ferrite): within $\pm 30\%$ Q value change(ceramic): within $\pm 20\%$ Impedance change: within $\pm 30\%$	1 10 Drop 10 times on a concrete floor from a high of 1m.
8	Vibration	$\pm 10\%$ $\pm 30\%$ $\pm 20\%$ $\pm 30\%$ No mechanical damage. Inductance change: within $\pm 10\%$ Q value change(ferrite): within $\pm 30\%$ Q value change(ceramic): within $\pm 20\%$ Impedance change: within $\pm 30\%$	$\pm 1.5\text{mm}$: $\pm 10\text{Hz}$ 55Hz 10Hz 1 Amplitude modulation: 1.5mm Test time: A period of 2h in each of 3 mutually perpendicular directions. Frequency range: 10Hz to 55Hz to 10Hz for 1min.
9	High temperature resistance	$\pm 10\%$ $\pm 30\%$ $\pm 20\%$ $\pm 30\%$ No mechanical damage. Inductance change: within $\pm 10\%$ Q value change(ferrite): within $\pm 30\%$ Q value change(ceramic): within $\pm 20\%$ Impedance change: within $\pm 30\%$	() $\pm 1000 \pm 0 \text{ h}$ $\pm 85 \pm 2$  Applied current: rated current(CBW Series) Testing time: $1000 \pm 0 \text{ h}$ Temperature: 85 ± 2

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Reliability Testing Items

NO	Item	Standard	Test Method
10	Humidity resistance	$\pm 10\%$ $\pm 30\%$ $\pm 20\%$ $\pm 30\%$ No mechanical damage. Inductance change: within $\pm 10\%$ Q value change(ferrite): within $\pm 30\%$ Q value change(ceramic): within $\pm 20\%$ Impedance change: within $\pm 30\%$	$: 90 \pm 2$ 95% RH $: 55 \pm 2$ $: 500 \begin{smallmatrix} 24 \\ 0 \end{smallmatrix} \text{ h}$ Humidity: 90 to 95% RH Temperature: 55 ± 2 24 Testing time: $500 \begin{smallmatrix} 24 \\ 0 \end{smallmatrix} \text{ h}$ 
11	Thermal Shock	$\pm 10\%$ $\pm 30\%$ $\pm 20\%$ $\pm 30\%$ No mechanical damage. Inductance change: within $\pm 10\%$ Q value change(ferrite): within $\pm 30\%$ Q value change(ceramic): within $\pm 20\%$ Impedance change: within $\pm 30\%$	-40 ± 3 $+85 \pm 3$ 20 32 Temperature: -40 for $30 \pm 3 \text{ min}$ $+85$ for $30 \pm 3 \text{ min}$ Transforming interval :max 20 sec Number of cycles: 32 

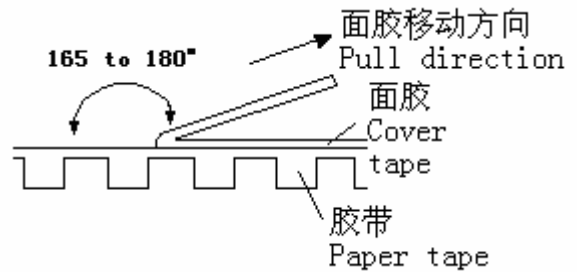
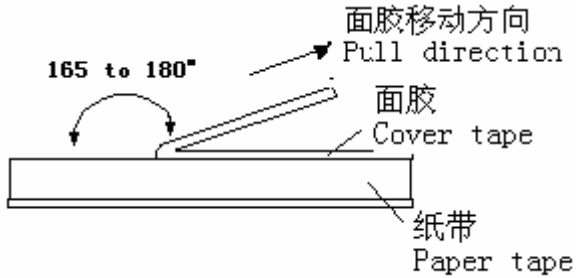
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Note:

When there are questions concerning, measurement shall be made after 24 ± 2 hrs of recovery under the standard condition.

5 Packaging

1 Peeling off force



0.1N 0.7N

Peeling force should be 0.1~0.7N pulling in the direction of arrow.

300mm/min

Speed of peeling off: 300mm/min.

The cover bond should not be damaged and bond the tape when it peeled off.

2 Packaging number (Unit: Pcs)

SIZE	453215	451616	322513	321611	321609	201212	201209	160808	100505
REEL	3000	5000	3000	3000	4000	3000	4000	4000	10000
BOX	12000	20000	15000	15000	20000	15000	20000	20000	50000
CASE	60000		180000	180000	240000	180000	240000	240000	600000

6 Recommend Soldering Conditions

1 Soldering Conditions

Products can be applied to reflow and flow soldering.

Flux, Solder

- a) 0.2 wt % Use rosin-based flux.

Don't use highly acidic flux with halide content exceeding 0.2(wt)% (chlorine conversion value).

- b) Using lead-free solder (96.5Sn /3.0Ag/0.5Cu)

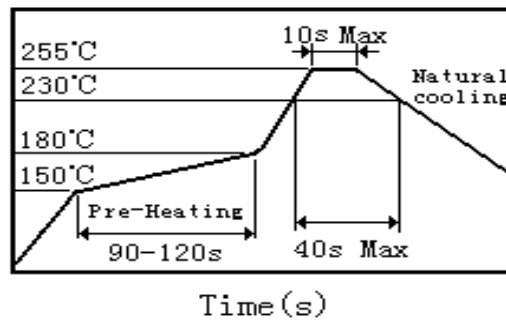
- c) : 100μ m 200μ m

6 Recommend Soldering Conditions

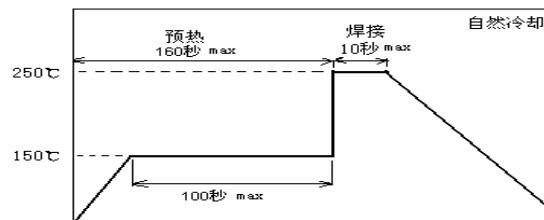
Soldering conditions

- 100 150
- Pre-heating should be in such a way that the temperature difference between solder and ferrite surface is limited to 150 max. Also cooling into solvent after soldering should be in such way that the temperature difference is limited to 100 max. Un-enough pre-heating may cause cracks on the ferrite, resulting in the deterioration of product quality.
-
- Products should be soldered within the following allowable range indicated by the slanted line. The excessive soldering conditions may cause the corrosion of the electrode. When soldering is repeated, allowable time is the accumulated time.

2 Reflow soldering profile



3 Flow soldering profile



4 Iron soldering

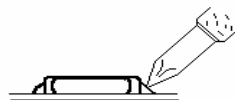
350 Perform soldering at 350 on 30W max

30W Time: < 5S

< 5S

Take care not to apply the tip of the soldering iron to the terminal

electrodes



5 Cleaning Conditions

60 Cleaning temperature : 60 max

1 Cleaning time: 1 minute min.

200W Ultrasonic output power: 200W max

7 Storage Conditions

1 Storage period

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Products which inspected in YINGDA over 6 months ago should be examined and used, which can be Confirmed with inspection No. marked on the container. Solder ability should be checked if this period is exceeded.

2 Storage conditions

-10 +40 30 70%

Products should be storage in the warehouse on the following conditions:

Temperature : -10~+40 Humidity: 30~70% relative humidity

Don't keep products in corrosive gases such as sulfur, chlorine gas or acid , or it may case oxidization of Electrodes resulting in poor solder ability.

Products should be stored on the palette for the prevention of the influence from humidity, dust and so on.

Products should be stored in the warehouse without heat shock, vibration, direct sunlight and so on.

Products should be stored under the airtight packaged condition.

8 ODS Usage Of ODS

1

ODS CCl₄ HCFC

1 For ODS listed below , we don't use in process

ODS: CCl₄, HCFC, etc.

9 Note

1 " " RoHS

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1 If the parcel label on product is "Unitary lead free" that indicate the products in accord with ROHS appointed requests.

2 This product specification guarantees the quality of our product as a single unit, Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.

3 We can't warrant against failure caused by any use of our product that deviates from the intended use as described in this product specification.

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10	Sample's feedback list			
<p>Respect customer,</p> <p>Thank you for your trust and support In cooperation, we will do our best to meet your all of requests, and provide the best service to you.</p> <p>If you have any problem, please feel free to contact us, we would earnestly analyze the question which you asked for, and reply to you as soon as possible. You only need fill in this form and fax or mail it to us.</p> <p>Wishes cooperate happily!</p>				
Problem Description				
Part NO.				
LOT NO.				
Sample Date				
Problem description				
Your analysis (for the reason)				
Note				
Your contact				
Your Name		Company		
Business		Address		
Tel		Post		
Fax		E-mail		
Contact us				
Contact person	Li huiqin	Tel	0758- 6923615	
Fax	0758- 6923617	E-mail	2008 li hui qi n@163. com	
Post	526020	Address	18 Fenghua Electronic Industrial City,18th Fenghua Road, Zhaoqing Guangdong, P.R, China	
Note	Please fill in the form and feedback to us in time, thanks!			