BOURNS **SRF0703-221M alternative**

Part No.CMS74BQV-221M-LF
Dual-Winding Shielded Power Inductors

Dual, 220 µH, 1.48 ohm, 520 mA,
7.6mm x 7.6mm x 3.4mm

RoHs Compliant

SPECIFICATION APPROVAL

CUSTOMER : BEC Distribution

PRODUCT : CMS74BQV-221M-LF

Pb-free

CODE NO. : C00774206

CUS. CODE :

SPEC.NO. : C-0774-206(00)

DATE : 14-Apr-11

CUSTOMER APPROVAL

BEC DISTRIBUTION Ltd.
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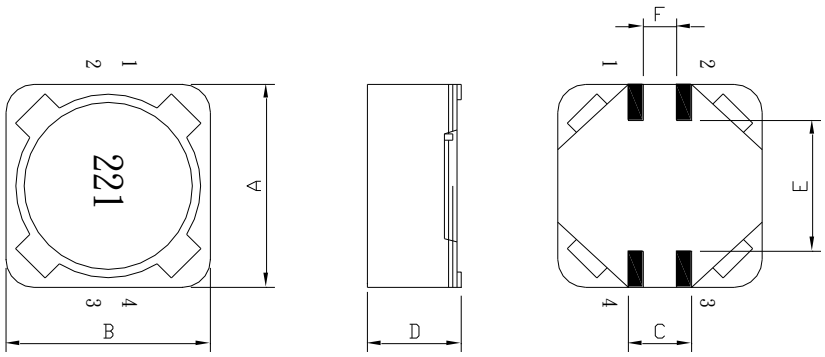
PREPARED BY	APPROVED BY	AUTHORIZED BY
JEAN	TONY	MASCOT

BOURNS SRF0703-221M alternative

PRODUCT	CMS74BQV-221M-LF	COIL SPECIFICATION	DATE	2011/4/14
SPEC.NO.	C-0774-206(00)		CODE NO.	C00774206

EXTERNAL DIMENSIONS :



A : 7.6 Max. m/m
B : 7.6 Max. m/m
C : 2.7 Ref. m/m
D : 4.45 Max. m/m
E : 2.9 Ref. m/m
F : 1.0 Ref. m/m

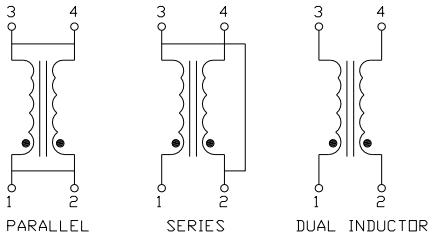
ELECTRICAL CHARACTERISTIC :

	PARALLEL	SERIES	
L(uH) :	227.0±20%	908±25%	100KHz 0.25V
DCR(Ω) :	1.134	3.288	Max.
Irms(A) :	0.56	0.279	
Isat(A) :	0.66	0.330	(30% L drop)
Isolation Voltage (V) :	600V Max / 3S	Between windings	

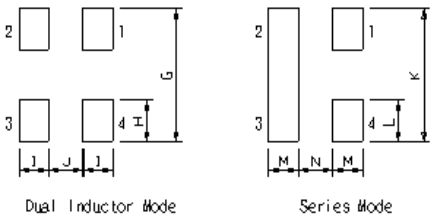
Operating Temperature Range : -40℃ ~ +125℃

Isolation Voltage should be verified in the end application.

SCHEMATIC DRAWING :



PCB PATTERN :



G : 7.9 m/m
H : 1.7 m/m
I : 1.0 m/m
J : 0.4 m/m
K: 7.9 m/m
L: 1.7 m/m
M: 1.0 m/m
N: 0.4 m/m

MATERIAL LIST :

N1=N2= φ TS Ref.

NO	ITEM	MATERIAL	SUPPLIER OF THE MATERIAL
1	CORE	M11D DR5.3*3.6 B2.8 F2.5 M11D RI7.3*3.5*5.7	TECSTAR or equ
2	BASE	BASE-DR-5.3A	FW or equ
3	WIRE	φ 2SFFW(180℃)	JSW / UL No. E174837 or equ
4	EPOXY	H210(GREY)	YE XU or equ

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TEST DATA

ELECTRICAL CHARACTERISTICS								
MEAS. ITEM	L(μH)	DCR(Ω)	Isat(A)	L(μH)	DCR(Ω)	Isat(A)		
TEST FREQ.	100KHz 0.25V	Max.		100KHz 0.25V	Max.			
YOUR								
SPEC.	227.0±20%	1.134	0.66	908±25%	3.288	0.33		
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
X	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
R	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		

DIMENSION								
MEAS. ITEM	A	B	C	D	E	F		
TEST FREQ.	m/m	m/m	m/m	m/m	m/m	m/m		
YOUR								
SPEC.	7.6 Max.	7.6 Max.	2.7 Ref.	4.45 Max.	2.9 Ref.	1.0 Ref.		
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
X	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
R	0.00	0.00	0.00	0.00	0.00	0.00		

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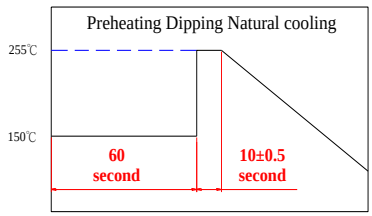
SPEC.NO.	C-0774-206(00)		CODE NO.	C00774206

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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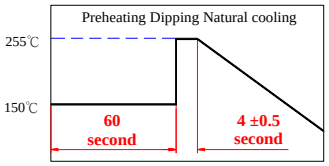
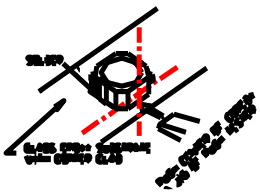
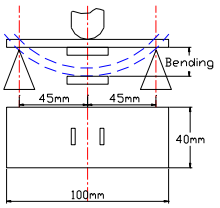
TEST ITEMS	SPECIFICATIONS	TEST CONDITIONS / TEST METHODS
MECHANICAL PERFORMANCE TEST		
SOLDERABILITY TEST	MORE THAN 90% OF TERMINAL ELECTRODE SHOULD BE COVERED WITH SOLDER.	AFTER FLUXING, INDUCTOR SHALL BE DIPPEDIN A MELTED SOLDER BATH AT 255±5℃ FOR 5 SECONDS 
COMPONENT ADHESION (PUSH TEST)	1.5Kg Min	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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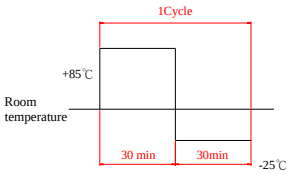
TEST ITEMS	SPECIFICATIONS	TEST CONDITIONS / TEST METHODS
CLIMATIC TEST		
TEMPERATURE CHARACTERISTIC	1.APPEARANCE:NO DAMAGE 2.INDUCTANCE:WITHIN±10% OF INITIAL VALUE.	- 40℃ ~ +125℃
HUMIDITY TEST		60℃±2℃ / 96±2 HOURS
LOW TEMPERATURE STORAGE		1.TEMPERATURE:- 25℃±2℃ 2.TIME: 96±2 HOURS
THERMAL SHOCK TEST		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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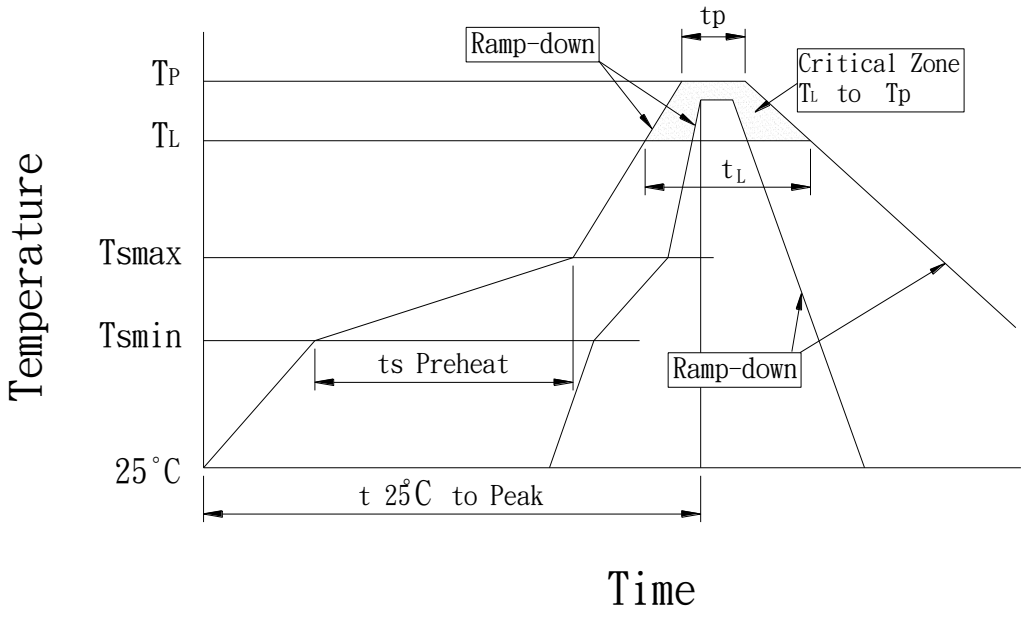
RECOMMENDED SOLDERING CONDITIONS：

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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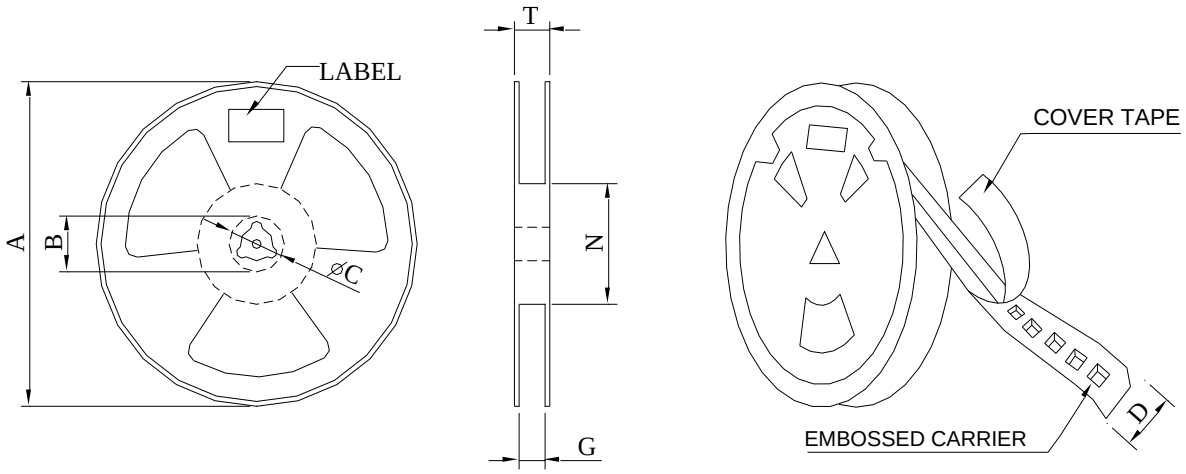
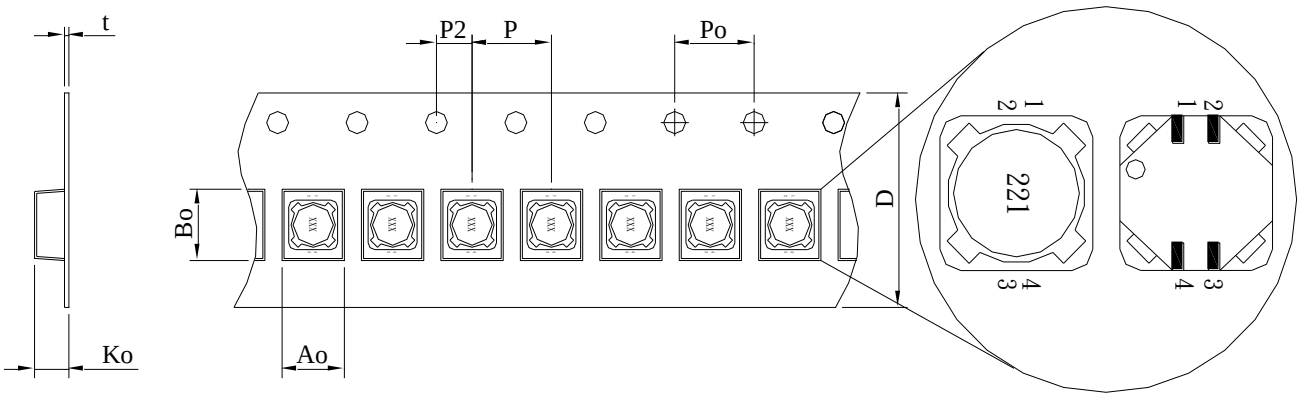
PACKAGE：



*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
13	1000	330	—	13.5 ±0.5	16.0 ±0.3	16	75.0 ±2.0	—	8.4 ±0.2	8.4 ±0.2	5.6 ±0.1	0.4 ±0.05	12.0 ±0.1	4.0 ±0.1	2.0 ±0.05

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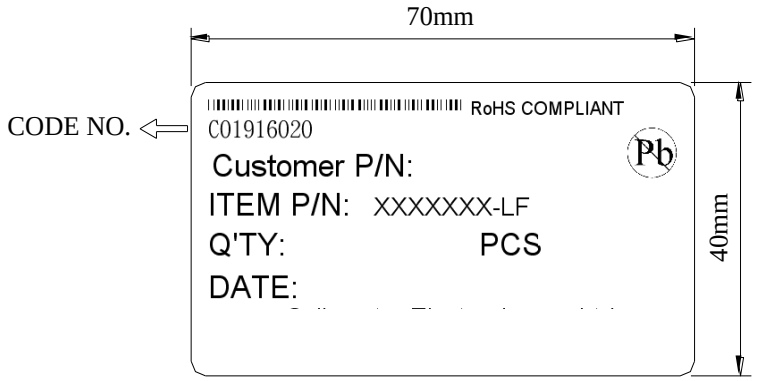
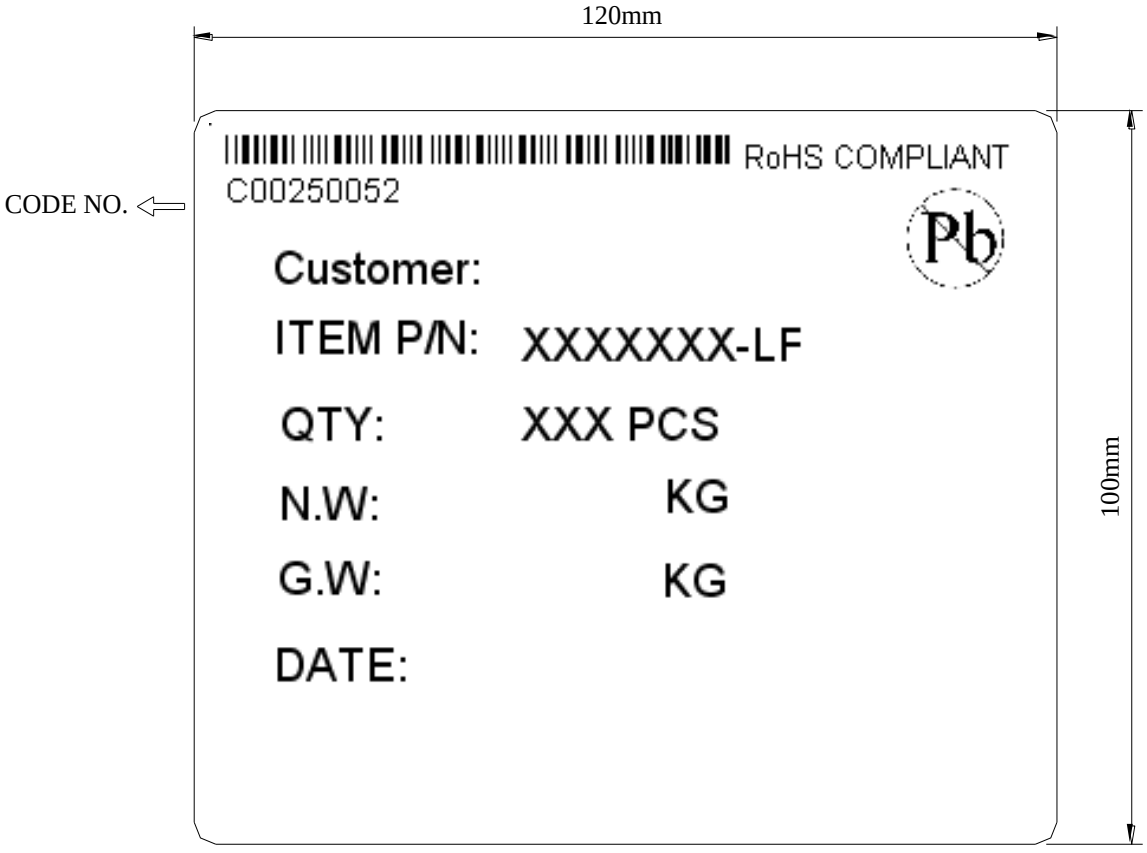
LABLE：



INNER BOX LABEL



OUT BOX LABEL

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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, BEC Distribution 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 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.