

Coilcraft series MS1608 alternatives



Part Number: 0603BC-16NJ

Wirewound Inductor, 16 nH, 0.17 ohm,
3.3 GHz, 700 mA, 0603



SPECIFICATION APPROVAL

SUPPLIER : BEC Distribution

PRODUCT : 0603BC-16NJ

Pb-free

CODE NO. : 0603BC-16NJ

CUS. CODE :

SPEC.NO. : C-1916-173(00)

DATE : 8-Apr-11

CUSTOMER APPROVAL

BEC DISTRIBUTION Ltd.

www.bec.co.uk

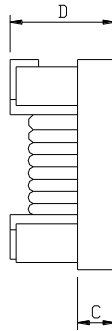
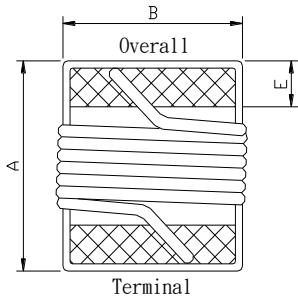
email: sales@bec.co.uk

Phone: +44(0)1844 275824

PREPARED BY	APPROVED BY	AUTHORIZED BY
JEAN	TONY	MASCOT

PRODUCT	0603BC-16NJ	COIL SPECIFICATION	DATE	2011/4/8
SPEC.NO.	C-1916-173(00)		CODE NO.	C01916173

CONFIGURATION & DIMENSIONS :



- A : 1.8 Max. m/m
- B : 1.2 Max. m/m
- C : 0.33 Ref. m/m
- D : 1.02 Max. m/m
- E : 0.45 Ref. m/m

ELECTRICAL CHARACTERISTIC :

INDUCTANCE AT 250MHz : 16nH±5%
 Q : 34 Min.
 DC RESISTANCE(Ω) : 0.17 Max.
 IDC(mA) : 700 Max.

TEST DATA

ELECTRICAL CHARACTERISTICS				DIMENSION			
MEAS. ITEM	L(nH)	Q	DCR(Ω)	A	B	C	D
TEST FREQ.	250MHz	Min.	Max.	m/m	m/m	m/m	m/m
YOUR							
SPEC.	16nH±5%	34	0.17	1.8 Max.	1.2 Max.	0.33 Ref.	1.02 Max.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
X	#DIV/0!	#DIV/0!	#DIV/0!				
R	0.00	0.00	0.00				

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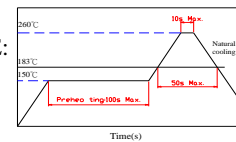
TEST ITEMS	SPECIFICATIONS	TEST CONDITIONS / TEST METHODS
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ELECTRICAL PERFORMANCE TEST

L	REFER TO STANDARD ELECTRICAL CHARACTERISTIC LIST.	HP-4286A WITH HP-16193 TEST FIXTURE.
Q		HP-4286A WITH HP-16193 TEST FIXTURE.
S.R.F.		HP-8753D
DCR		HP-4286A
RATED CURRENT		APPLIED THE CURRENT TO COILS THE INDUCTANCE CHANGE SHOULD BE LESS THAN 10% TO INITIAL VALUE AND TEMPERATURE RISE SHOULD NOT BE MORE THAN 20°C ..
TEMPERATURE RISE TEST	20°C MAX (Δt)	1. APPLIED THE ALLOWED DC CURRENT FOR 10 MINUTES. 2. TEMPERATURE MEASURE BY DIGITAL SURFACE THERMOMETER.
OVER LOAD TEST	NO EVIDENCE OF ELECTRICAL DAMAGE	APPLIED 2 TIMES OF RATED ALLOWED DC CURRENT TO INDUCTORS FOR A PERIOD OF 5 MINUTES.
WITHSTANDING VOLTAGE TEST	NO EVIDENCE OF ELECTRICAL DAMAGE	AC VOLTAGE OF 500VAC APPLIED BETWEEN COMPONENT TERMINAL AND CENTER CASE FOR 1 MINUTES.
INSULATION RESISTANCE TEST	1000 MEGA-OHMS MIN	100 VDC APPLIED BETWEEN INDUCTOR TERMINALS AND CENTER CASE.

MECHANICAL PERFORMANCE TEST

SOLDER HEAT RESISTANCE	1. COMPONENT SHOULD HAVE NO EVIDENCE OF ELECTRICAL AND MECHANICAL DAMAGE 2. INDUCTANCE SHOULD NOT CHANGE MORE THAN $\pm 5\%$	SOLDER : TIN-SILVER-COPPER (95.5%/4.0%/0.5%) PREHEAT:150°C 100s Max. SOLDER TEMPERATURE: 260 \pm 5°C DIP TIME:10s Max.
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		COMPONENT SHOULD BE DROPPED 10 TIMES FROM A HEIGHT OF 1m ONTO 3cm WOODEN BOARD.



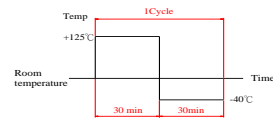
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<u>MECHANICAL PERFORMANCE TEST</u>				
SOLDERABILITY TEST	MORE THAN 90% OF TERMINAL ELECTRODE SHOULD BE COVERED WITH SOLDER.	PREHEAT:150°C 120s SOLDER TEMPERATURE: 260±5°C DIP TIME:10s Max.		
COMPONENT ADHESION (PUSH TEST)	4 lbs (ABOUT 1.8Kg)	THE DEVICE SHOULD BE REFLOW SOLDERED (260±5°C FOR 10 SECONDS) TO A TINNED COPPER SUBSTRATE. A DYNAMOMETER FORCE GAUGE SHOULD BE APPLIED TO THE SIDE OF THE COMPONENT. THE DEVICE MUST WITH- STAND A MINIMUM FORCE OF 1.8Kg WITHOUT AILURE OF THE TERMINATION .		
COMPONENT ADHESION (PULL TEST)	4 lbs (ABOUT 1.8Kg)	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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CLIMATIC TEST

TEMPERATURE CHARACTERISTIC	1. COMPONENT SHOULD HAVE NO EVIDENCE OF ELECTRICAL AND MICHANICAL DAMAGE 2. INDUCTANCE SHOULD NOT HANGE MORE THAN $\pm 10\%$	CERAMIC CORE: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
HUMIDITY TEST		$50^{\circ}\text{C} \pm 2^{\circ}\text{C}$ / 96 ± 2 HOURS R.H.: 90-95%
LOW TEMPERATURE STORAGE		1. TEMPERATURE: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 2. TIME: 48 ± 2 HOURS
THERMAL SHOCK TEST		1. $-40 \pm 5^{\circ}\text{C}$ FOR 30 MINUTES. $+125 \pm 5^{\circ}\text{C}$ FOR 30 MINUTES. 2. TOTAL: 10 CYCLES
HIGH TEMPERATURE STORAGE		1. APPLIED CURRENT: MAX RATED CURRENT 2. TEMPERATURE: $+125^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 3. TIME: 48 ± 2 HOURS



NOTE : COMPONENT ARE TO BE TESTED AFTER 2 HOUR AT ROOM TEMPERATURE.

LIFE TEST

HIGH TEMPERATURE LOAD LIFE TEST	COMPONENT SHOULD BE NO EVIDENCE OF SHORT OR OPEN CIRCUIT	1. TEMPERATURE: $85 \pm 2^{\circ}\text{C}$ 2. TIME: 1000 ± 12 HOURS 3. LOAD: ALLOWED DC CURREN
HUMIDITY LOAD LIFE TEST		1. TEMPERATURE: $40 \pm 2^{\circ}\text{C}$ 2. R.H.: 90-95% 3. TIME: 1000 ± 12 HOURS 4. LOAD: ALLOWED DC CURREN

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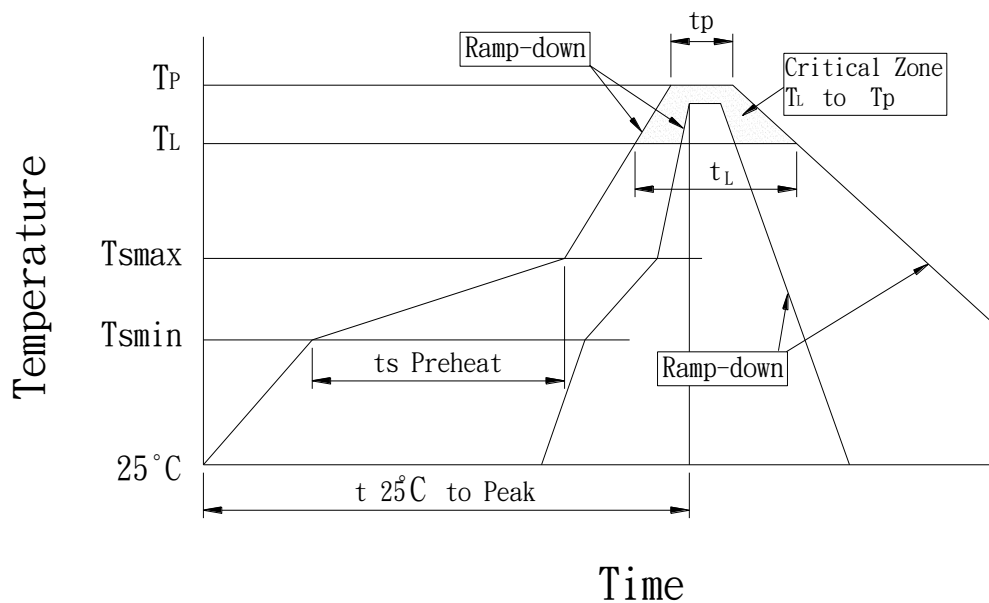
RECOMMENDED SOLDERING CONDITIONS :

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°C/second max.		3°C/second max.	
Preheat				
-Temperature Min (T _{Smin})	100°C		150°C	
-Temperature Min (T _{Smax})	150°C		200°C	
-Time (min to max) (ts)	60-120 seconds		60-180 seconds	
T _{Smax} to T _L				
-Ramp-up Rate			3°C/second max.	
Time maintained above:				
-Temperature (T _L)	183°C		217°C	
-Time (t _L)	60-150 seconds		60-150 seconds	
Peak Temperature (T _P)	225 +0/-5°C	240 +0/-5°C	245 +0/-5°C	260°C
Time within 5°C of actual Peak Temperature (t _p)	10-30 seconds	10-30 seconds	10-30 seconds	10 seconds
Ramp-down Rate	6°C/second max.		6°C/second max.	
Time 25°C to Peak Temperature	6 minutes max.		8 minutes max.	

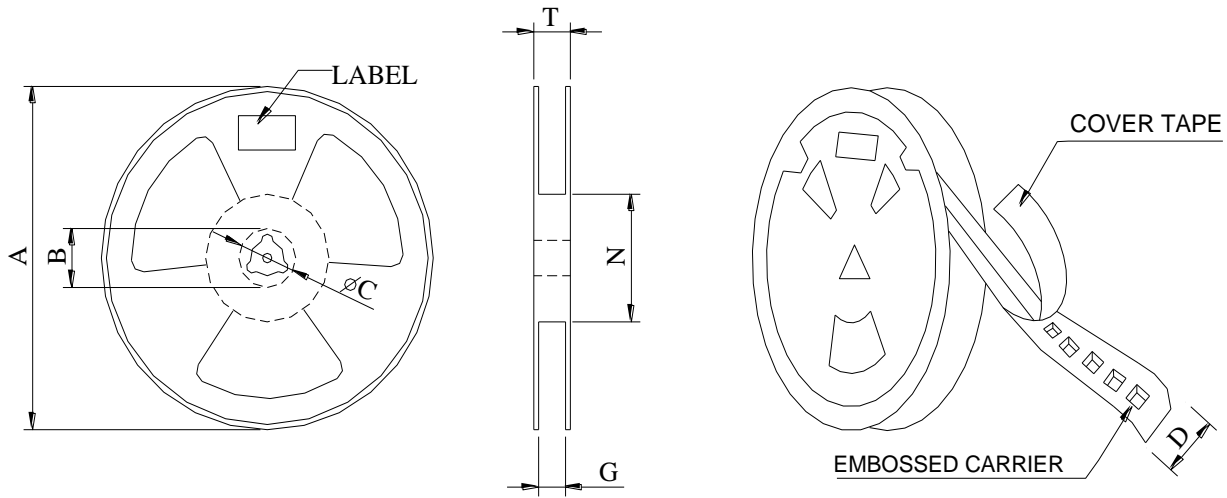
Note : All temperatures refer to top side of the package. Measured on the package body surface.

REFLOW SOLDERINGS

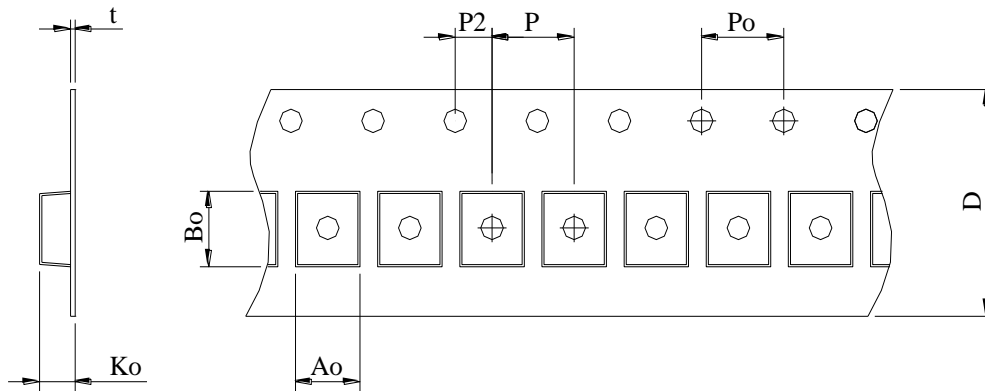


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PACKAGE :



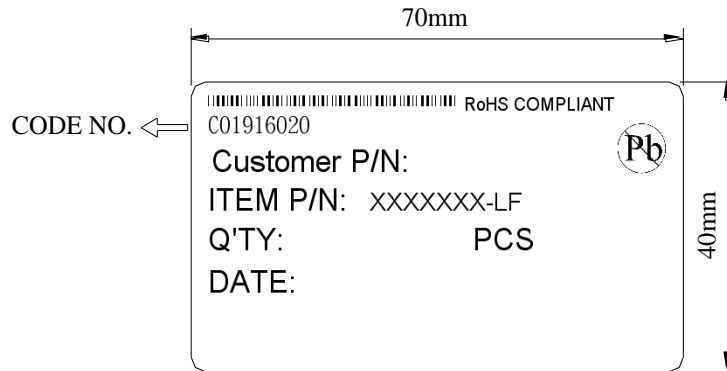
*CARRIER TAPE WIDTH : D



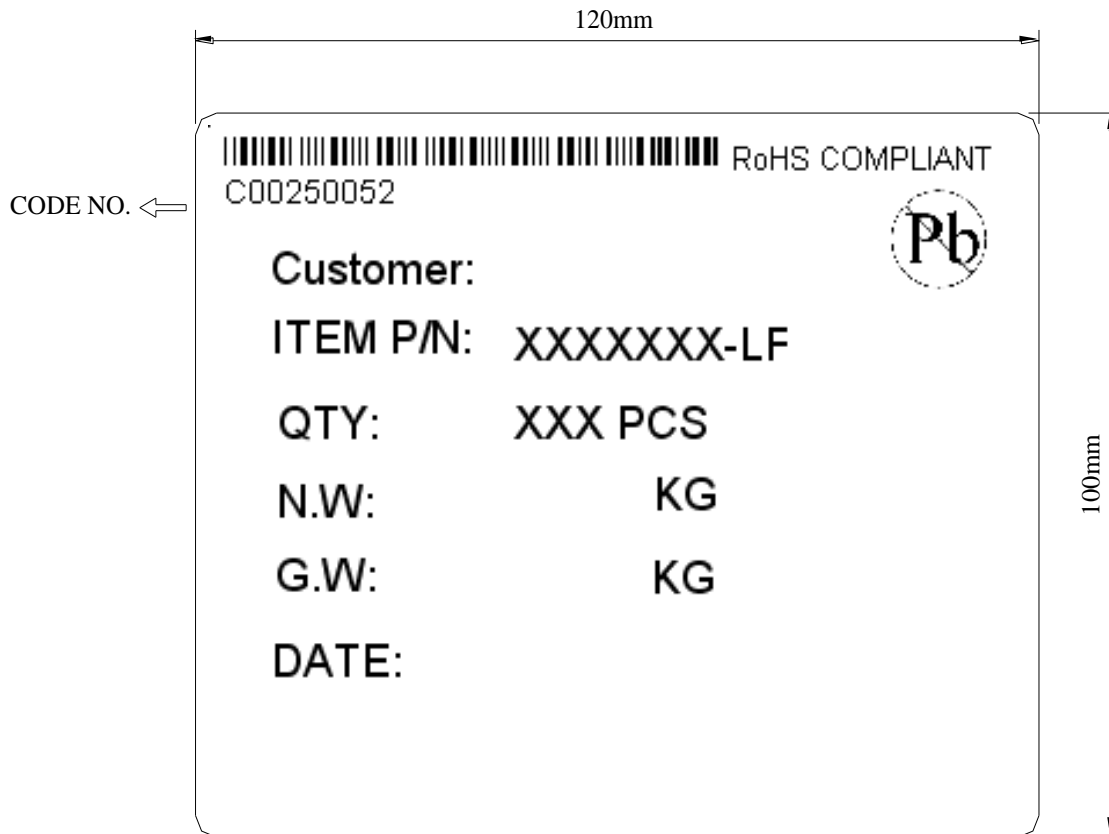
STYLE	DIMENSIONS (m/m)														
	Q'TY (PCS)	A	B	C	D	G	N	T	Ao	Bo	Ko	t	P	Po	P2
7"	4000	178	—	13	8.3	—	62	—	1.2	1.8	1.2	0.2	4	4	2

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TABLE :



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.