MESSRS:
全纬科技有限公司

SPEC NO.	H500-0473

DATE: 2009/4/17

LEAD FREE

《NEW/~~AMENDED~~》

APPROVAL SPECIFICATION

DESCRIPTION: FIXED INDUCTOR

MODEL (PART NO.) CEC900116 CECNP-100t-8120 25NP

CUSTOMER'S PART NO.

AMENDED
CUSTOMER'S PART NO.

【FOR APPROVAL】

DATE: 22-04-2009

CHUANWEI TECHNOLOGY LIMITED 全纬科技有限公司

* THIS SPECIFICATION IS CONSTITUTED WITH PAGES INCLUDING ATTACHMENTS.

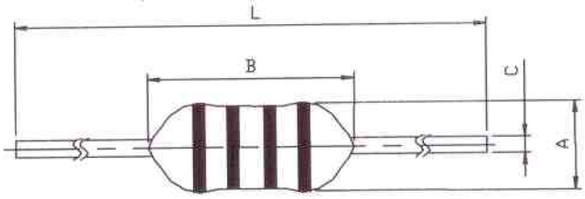
COILS ELECTRONIC CO., LTD.

Approved by	Checked by	In charge
		2009.4.17

CUSTOMER: 全纬科技有限公司			AMENDMENT RECORD			
SYMBOL	DATE	PAGE	CONTENTS	DWN. BY	CHK. BY	APP. BY

SPECIFICATION

1. DIMENSION (UNIT: mm)

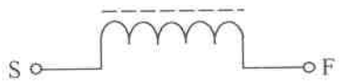


A	Ø3.2 Max.
B	7.0 Max.
C	Ø0.50±0.05 (0.1~18 μH) Ø0.48±0.05 (22~1000 μH)
L	61.0±1.0

COLOR RING 1 2 3 4

* THE LENGTH OF THE TERMINAL PINS DOES NOT INCLUDE SOLDER TIP.

2. CIRCUIT

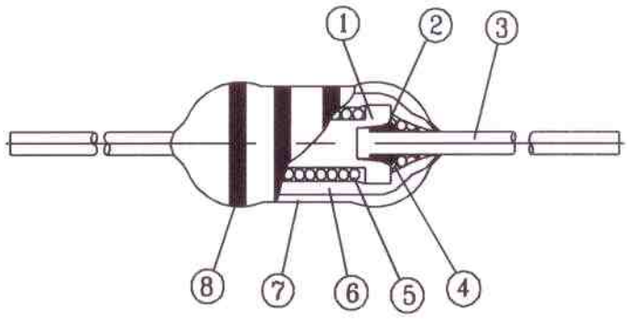


3. MARKING

COLOR	FIRST FIGURE 1	SECOND FIGURE 2	MULTIPLIER 3	TOLERANCE 4
BLACK	0	0	1	± 20%
BROWN	1	1	10	-
RED	2	2	100	-
ORANGE	3	3	1000	-
YELLOW	4	4	-	-
GREEN	5	5	-	-
BLUE	6	6	-	-
VIOLET	7	7	-	-
GRAY	8	8	-	-
WHITE	9	9	-	-
GOLD	-	-	0.1	± 5%
SILVER	-	-	0.01	± 10%

SPECIFICATION

4. CONSTRUCTION:



No.	PARTS	MATERIAL	MANUFACTURER	COUNTRY OF ORIGIN	UL No.	UL FLAME CLASS	TEMP CLASS
①	CORE	FERRITE CORE EM11,EM9D,EL9H OR EQUIVALENT	TONICHI FERRITE PRODUCTS CO., LTD.	CHINA	NA	NA	NA
②	ADHESIVE	EPOXY RESIN(6642-1) OR EQUIVALENT	GUANG ZHOU WELLS CHEMICAL CO., LTD.	CHINA	NA	NA	NA
③	LEAD WIRE	SOLDER PLATED COPPER WIRE OR EQUIVALENT	WELL FORE SPECIAL WIRE CORPORATION	CHINA	NA	NA	NA
④	SOLDER	Sn-Cu-Ni (SN100C4)	NIHON SUPERIOR., LTD.	JAPAN	NA	NA	NA
		OR Sn99.3-Cu0.7 OR EQUIVALENT	ALPHA METALS LTD.	CHINA HONG KONG	NA	NA	NA
			YUNAN TIN CO., LTD.	CHINA	NA	NA	NA
⑤	WIRE	POLYURETHANE ENAMELLED COPPER WIRE OR EQUIVALENT	JUNG SHING WIRE CO., LTD.	CHINA	E174837	NA	130℃
			PACIFIC-THAI ELECTRIC WIRE & CABLE CO., LTD.	CHINA THAILAND	E142108	NA	130℃
			TA YA ELECTRIC WIRE FACTORY	CHINA	E197768	NA	130℃
⑥	UNDER-COATING RESIN	BUTADIENE RESIN (UV-321) OR EQUIVALENT	HOMETOWN INDUSTRIAL CO., LTD.	CHINA (TAIWAN)	NA	NA	NA
		OR BUTADIENE RESIN UV-C110 OR EQUIVALENT	JUHEXING CHEMICAL GUANGZHOU CO., LTD.	CHINA	NA	NA	NA
⑦	OVER-COATING RESIN	EPOXY RESIN (13012G) OR EQUIVALENT	HOMETOWN INDUSTRIAL CO., LTD.	CHINA (TAIWAN)	NA	NA	NA
⑧	COLOR CODE	MELAMINE RESIN OR EQUIVALENT	HOMETOWN INDUSTRIAL CO., LTD.	CHINA (TAIWAN)	NA	NA	NA

* SPECIFICATION *

5. GENERAL CHARACTERISTICS

* STANDARD TESTING CONDITIONS:
UNLESS OTHERWISE SPECIFIED, THE STANDARD RANGE OF ATMOSPHERIC CONDITIONS FOR MEASUREMENTS AND TESTS ARE AS FOLLOWS: AMBIENT TEMPERATURE: 15℃~35℃. RELATIVE HUMIDITY : 25% ~85%. AIR PRESSURE : 86kPa ~106kPa.
IF THERE IS ANY DOUBT ABOUT THE RESULTS, MEASUREMENT SHALL BE MADE WITHIN THE FOLLOWING LIMITS: AMBIENT TEMPERATURE: 20℃±1℃. RELATIVE HUMIDITY : 63% ~67%. AIR PRESSURE : 86kPa ~106kPa.

No.	ITEMS		TEST CONDITIONS	SPECIFICATION
1	OPERATION TEMPERATURE STORAGE TEMPERATURE			-25 ~ +85℃ (INCLUDING COIL TEMPERATURE RISE) -40 ~ +85℃
2	LEAD TERMINAL STRENGTH	PULLING	A STATIC PULLING FORCE OF 25N IN A DIRECTION PARALLEL TO THE LEAD TERMINALS FOR 5±1 SECONDS.	NO TERMINAL BREAKAGE OR LOOSENING
		BENDING	LOAD WITH 3.0N AND 90° BENDING AND STRAIGHTENING TWICE IN TWO DIRECTIONS (UPWARD & DOWNWARD)	
3	DIELECTRIC WITHSTAND VOLTAGE TEST		D.C.500V APPLIED BETWEEN WINDING-BODY FOR 1 MINUTE.	NO DIELECTRIC DAMAGE
4	INSULATION RESISTANCE TEST		D.C.500V APPLIED BETWEEN WINDING-BODY FOR 1 MINUTE.	OVER 100 MΩ
5	OVER CURRENT TEST		INPUT 2 TIMES OF RATED INTO THE SAMPLE FOR 5 MINUTES.	NO FIRE OR ANY ABNORMALITY
6	RESISTANCE TO SOLDERING HEAT TEST		FIX THE SAMPLES ON A 1.6MM THICKNESS PCB, THEN DIP THE SAMPLE LEADS INTO A SOLDERING BATH OF 260±5℃ UP TO THE PCB FOR 5±1 SECONDS.	NO MECHANICAL BREAKAGE. DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±3.0% Qu: WITHIN ±20%
7	SOLDER ABILITY TEST		IMMERSE THE TERMINAL IN FLUX FOR 5 SECONDS. THEN DIP THE TERMINAL INTO A SOLDERING BATH OF 245±5℃ FOR 2±0.5 SECONDS.	OVER 90% OF THE SURFACE BEING IMMERSED SHALL BE COVERED WITH NEW SOLDER UNIFORMLY.
8	VIBRATION TEST		AMPLITUDE: 1.5MM-P.P FREQUENCY:10~55~10HZ (1 MINUTE PER CYCLE) DURATION: 2 HOURS IN EACH OF X,Y,Z AXIS. (TOTAL 6 HOURS)	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±1.0% Qu: WITHIN ±20%
9	SHOCK TEST		PEAK ACCELERATION: 981M/S^2 DURATION OF PULSE: 10MS SHOCK TIMES: 3 TIMES IN EACH OF X, Y, Z AXIS. (TOTAL 9 TIMES)	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±1.0% Qu: WITHIN ±20%
10	HUMIDITY TEST		TEMPERATURE: 40℃±2℃ HUMIDITY: 90%~95%RH DURATION: 500±12 HOURS.	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10% Qu: WITHIN ±20%
11	DRY HEAT TEST		TEMPERATURE: 85℃±2℃ DURATION: 500±12 HOURS.	
12	COLD TEST		TEMPERATURE: -25℃±3℃ DURATION: 500±12 HOURS.	
13	DRY HEAT WITH LOAD		TEMPERATURE: 85℃±2℃ LOAD CONDITION: RATED CURRENT DURATION: 500±12 HOURS.	
14	DAMP HEAT WITH LOAD		TEMPERATURE: 40℃±2℃ HUMIDITY: 90%~95%RH LOAD CONDITION: RATED CURRENT DURATION: 500±12 HOURS.	
15	THERMAL SHOCK		5 CONTINUOUS CYCLES SHOWN AS BELOW	

TEMPERATURE	DURATION
-25℃±3℃	30 MINUTES
85℃±2℃	30 MINUTES

REMARK	SPEC. No. 4/6 **H500-0473**

SPECIFICATION

6. ELECTRICAL CHARACTERISTICS

No.	CUST. P/N	CEC. P/N	L (μH)	L TOLERANCE	Qu Min.	D.C.R. (Ω) Max.	RATED CURRENT Max. (A)		S.R.F. (MHz) Min.	MEASURING FREQUENCY (MHz)	MATERIAL
							Idc1	Idc2			
01			0.10	M、K	60	0.070	2.72	1.18	220	25.2	EM11
02			0.12			0.080	2.69	1.02	200		
03			0.15		50	0.085	2.64	0.91	185		
04			0.18			0.090	2.62	0.78	180		
05			0.22			0.103	2.60	0.75	170		
06			0.27			0.110	2.58	0.70	165		
07			0.33			0.120	2.55	0.68	160		
08			0.39			0.13	2.52	0.65	155		
09			0.47			0.14	2.33	0.64	150		
10			0.56			0.15	2.24	0.63	150		
11			0.68			0.17	2.21	0.62	150		
12			0.82			0.19	2.00	0.61	150		
13			1.0	M、K、J		0.22	1.82	0.59	150		
14			1.2			0.23	1.81	0.57	145	7.96	EM9D
15			1.5			0.25	1.75	0.565	140		
16			1.8			0.27	1.39	0.555	138		
17			2.2			0.30	1.15	0.515	110		
18			2.7			0.33	1.12	0.505	100		
19			3.3			0.50	1.06	0.365	100		
20			3.9			0.59	1.01	0.350	90		
21			4.7		60	1.12	0.91	0.260	84		
22			5.6			1.16	0.84	0.235	65		
23			6.8			1.29	0.74	0.230	60		
24			8.2			1.39	0.73	0.215	58		
25		**CEC900116**	**10**	**K**		**1.56**	**0.67**	**0.210**	**28.7**		
26			12	M、K、J	50	1.64	0.60	0.200	18.9	2.52	
27			15			1.85	0.56	0.190	16.8		
28			18			1.94	0.52	0.185	12.8		
29			22			2.24	0.48	0.160	10.4		
30			27			2.39	0.41	0.155	10.2		
31			33			2.71	0.38	0.150	8.4		
32			39			3.00	0.36	0.145	7.4		

REMARK	SPEC. No. 5/6
	H500-0473

SPECIFICATION

ELECTRICAL CHARACTERISTICS

No.	CUST. P/N	CEC. P/N	L (μH)	L TOLERANCE	Qu Min.	D.C.R. (Ω) Max.	RATED CURRENT Max. (A)		S.R.F. (MHz) Min.	MEASURING FREQUENCY (MHz)	MATERIAL
							Idc1	Idc2			
33			47	M、K、J	50	3.30	0.33	0.135	6.9	2.52	EM9D
34			56			3.85	0.32	0.135	6.6		
35			68			4.07	0.27	0.125	6.1		
36			82		45	4.62	0.24	0.125	5.4		
37			100			4.98	0.24	0.110	5.0		
38			120			5.45	0.23	0.110	4.3	0.796	EL9H
39			150			5.83	0.22	0.10	4.3		
40			180			8.46	0.20	0.095	3.4		
41			220			9.23	0.18	0.090	3.3		
42			270			11.7	0.15	0.085	2.9		
43			330			13.2	0.14	0.075	2.7		
44			390			19.9	0.13	0.060	2.3		
45			470			21.4	0.12	0.055	2.2		
46			560			22.8	0.11	0.055	2.1		
47			680			25.2	0.10	0.050	1.9		
48			820			28.4	0.09	0.045	1.7		
49			1000			31.3	0.08	0.045	1.5		

* M: ±20%, K: ±10%, J: ±5%

* TESTING INSTRUMENT
INDUCTANCE & Q: HP-4285A OR EQUIVALENT.
D.C.R.: HP-34420A OR EQUIVALENT.
RATED CURRENT: HP-4284A, HP-42841A, HP-E3632A, HP-34420A OR EQUIVALENT.
S.R.F. : HP-4291B, HP-4285A OR EQUIVALENT.

* Idc1: THE CURRENT WHEN THE INDUCTANCE DECREASES TO 90% OF INITIAL VALUE. (Ta=25℃)

* Idc2: THE CURRENT WHEN THE TEMPERATURE OF COIL IS INCREASED BY 20℃. (Ta=25℃)

* THE RATED CURRENT INDICATES THE SMALLER ONE BETWEEN Idc1 AND Idc2.

6. PACKING

* PACKAGE TO BE ACCORDING TO SPECIFICATION (TICK THE RELEVANT "√").

☑ KB-PAT003 ☐ KB-PAT601 ☐ KB-PAT801 ☐ KB-OTH019
☐ KB-PAT004 ☐ KB-PAT602 ☐ KB-PAT802 ☐ KB-OTH020
☐ SPECIAL FOR CUSTOMER:._____

7. REMARK

* THE WARNING FOR LEAD WIRE FORMING TO BE ACCORDING TO STD-003.

8. RoHS COMPLIANCE REMARKS

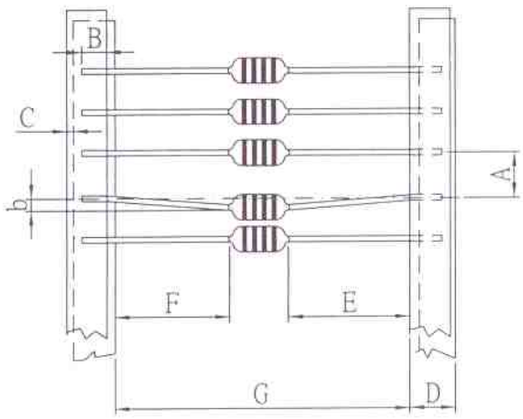
* LEAD WILL BE PRESENT IN THE FERRITE CORE OF THE FRIT MATRIX IN THE COMPONENT. THIS USE, IS EXEMPT FROM RoHS LEGISLATION PER THE ANNEX (ITEM 7), WHICH REFERS TO "LEAD IN ELECTRONIC CERAMIC PART".

REMARK	SPEC. No. 6/6
	H500-0473

* PACKAGE SPECIFICATION *

* APPLICABLE TYPE: CEC,TCEC

1. Taping Dimensions: (Unit : mm)



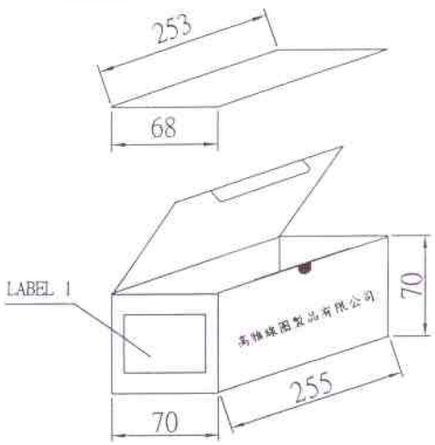
A : 5.0±0.5
B : 3.0MIN.
C : 0.8MAX.
D : 6±0.5
IE-F1: 1.0MAX.
G : $52^{+2.0}_{-0}$
b : 1.2max.

LABEL 1

Customer	
Lot No.	
Messrs.	
Part No.	
Qty.	

2. Ammunition Packing

2,000 Pcs/Box



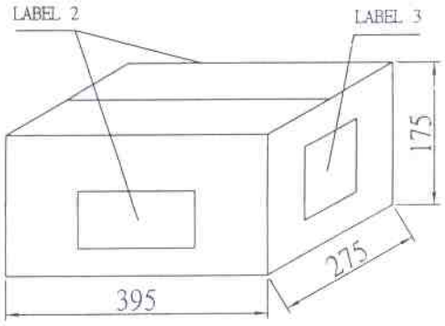
LABEL 2

* UNLESS OTHERWISE STATED(IN COIL SPEC.) THE LABEL 2 SHALL BE ACCORDING TO CEC STANDARD SHOWN BELOW.

COILS
C/No. :
TOTAL CN :
MADE IN CHINA

3. Carton

10 Boxes/Carton Total 20,000 Pcs



LABEL 3

LOT NO.	
COILS P/N:	
P/O#:	
Cust. P/N:	
QTY:	
DATE:	

MADE: 17th.Jan.,2003			REVISION	PACKAGE SPEC.No. 1/1
APPROVAL	CHECK	DESIGN		KB-PAT003
R&D 曹宜忠	2004.1.31 廖小铎	R&D 2004.1.30 萬芳中		

COILS ELECTRONIC CO., LTD.

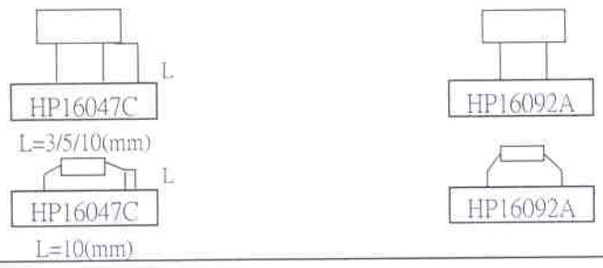
ELECTRICAL CHARACTERISTIC INSPECTION REPORT

電氣性能測試報告(五)

2009年4月15日

CUSTOMER (客戶名稱) : 全緯科技有限公司					CUST. P/N : CEC. P/N : CECNP-100K-900116(H500-0473)	
ITEM : (項目)	L (uH)	Q	SRF (MHz)	Rdc (Ω)	RATED CURRENT (mA)	
					I dc (ΔL/L:-10%)	I (ΔT= 20 ℃)
SPEC : (規格)	10 ± 10% (9 ~ 11)	60 Min.	28.7 Min.	1.56 Max.	670 Max.	210 Max.
1	9.67	80	42.6	1.14	970	302
2	9.78	87	42.6	1.15	970	
3	9.50	102	47.4	1.16	960	
4	9.78	97	51.4	1.21	950	
5	9.64	101	47.4	1.18	950	
Max .	9.78	102	51.4	1.21	970	
Min .	9.50	80	42.6	1.14	950	
R	0.28	22	8.8	0.07	20	
$\overline{X}$	9.674	93.4	46.28	1.168	960.0	
TESTING FREQUENCY (測試頻率)	7.96 MHz/1V					

TESTING DIAGRAM (測試示意圖) :



TESTING INSTRUMENT (測試儀器) :

1. Q METER	☐ MQ-1601	7. IMPEDANCE ANALYZER	☐ HP-4191A
2. L.C.R. METER	☐ LCR-745		☑ HP-4291B
	☑ HP-4284A		☐ HP-4395A
	☑ HP-4285A		☐ HP-4294A
	☐ HP-4262A	8. BIAS CURRENT SOURCE	☑ HP-42841A
3. L.C.Z. METER	☐ HP-4277A	9. MICRO-OHM METER	☐ KEITHLEY 580
4. MULTIMETER	☑ HP-34420A		☑ HP-34420A
5. DC POWER SUPPLY METER	☑ HP-E3632A	10. NETWORK ANALYZER	☐ HP-8753C
6. THEROMETER	☐ TES1310	11. DIELECTRIC ANALYZER	☐ DU-332

TESTING CONDITION (測試條件) :

TEMPERATURE (溫度) : 27.5 ℃

HUMIDITY (濕度) : 57 %

APPROVED	CHECKED	TESTED
劉少敏	朱銀芝	R&D 2009-03-16 李明良