

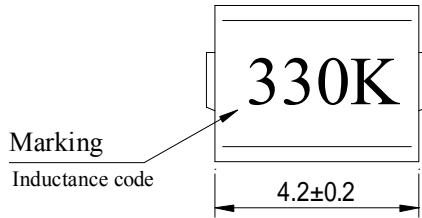
# SPECIFICATION FOR APPROVAL

REF : 20070813-E

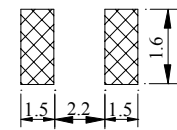
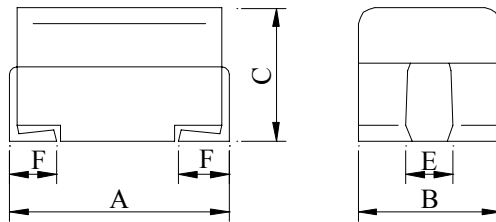
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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM4532□□□□L□-□□□
		ABC'S ITEM NO.	

**. CONFIGURATION & DIMENSIONS :**



- A : 4.5±0.3 m/m
- B : 3.2±0.2 m/m
- C : 3.2±0.2 m/m
- E : 1.2 m/m
- F : 1.0<sup>+0.3</sup><sub>0</sub> m/m



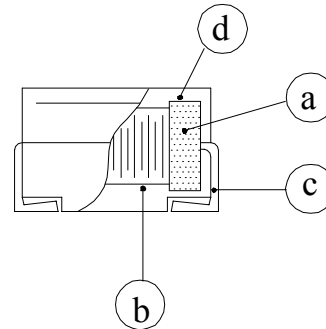
( PCB Pattern )

**. SCHEMATIC DIAGRAM :**



**. MATERIALS :**

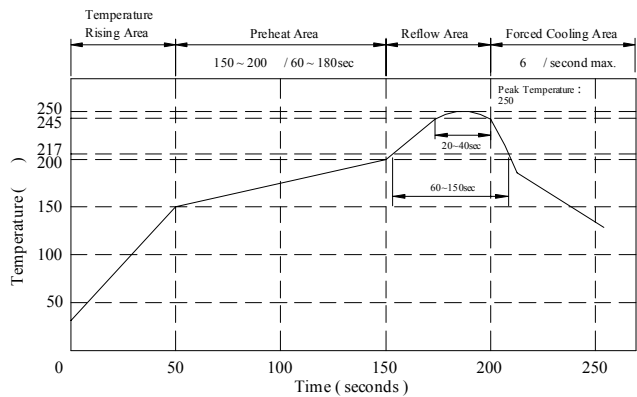
- a . Core : Ferrite DR core
- b . Wire : Enamelled copper wire (class H)
- c . Terminal : Cu/Sn
- d . Encapsulate : Epoxy novolac molding compound
- e . Remark : Products comply with RoHS' requirements



**. GENERAL SPECIFICATION :**

- a . Temp. rise : 20 max.
- b . Ambient temp. : 100 max.
- c . Storage temp. : -40 ----+125
- d . Operating temp. : -40 ----+125
- e . Terminal pull strength : 1.5 kg min.
- f . Rated current : Current cause  
inductance drop within 10%
- g . Resistance to solder heat : 260 .10 secs.
- h . Resistance to solvent : Per MIL-STD-202F

Reflow profile  
 Peak Temp : 250 max.  
 Max time above 245 : 20~40sec max.  
 Max time above 217 : 60~150sec max.  
 200 ~250 Average Ramp-up Rate : 3 /second max.



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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM4532□□□□L□-□□□
		ABC'S ITEM NO.	

**. ELECTRICAL CHARACTERISTICS :**

DWG No.	Inductance ( μH )	Q min.	Test Freq. ( MHz )	SRF ( MHz ) min.	RDC ( Ω ) max.	IDC ( mA ) max.
CM4532R10ML□-□□□	0.10 ±20%	35	25.2	300	0.18	800
CM4532R12ML□-□□□	0.12 ±20%	35	25.2	280	0.20	770
CM4532R15ML□-□□□	0.15 ±20%	35	25.2	250	0.22	730
CM4532R18ML□-□□□	0.18 ±20%	35	25.2	220	0.24	700
CM4532R22ML□-□□□	0.22 ±20%	40	25.2	200	0.25	665
CM4532R27ML□-□□□	0.27 ±20%	40	25.2	180	0.26	635
CM4532R33ML□-□□□	0.33 ±20%	40	25.2	165	0.28	605
CM4532R39ML□-□□□	0.39 ±20%	40	25.2	150	0.30	575
CM4532R47ML□-□□□	0.47 ±20%	40	25.2	145	0.32	545
CM4532R56ML□-□□□	0.56 ±20%	40	25.2	140	0.36	520
CM4532R68ML□-□□□	0.68 ±20%	40	25.2	135	0.40	500
CM4532R82ML□-□□□	0.82 ±20%	40	25.2	130	0.45	475
CM45321R0KL□-□□□	1.00 ±10%	50	7.96	100	0.50	450
CM45321R2KL□-□□□	1.20 ±10%	50	7.96	80	0.55	430
CM45321R5KL□-□□□	1.50 ±10%	50	7.96	70	0.60	410
CM45321R8KL□-□□□	1.80 ±10%	50	7.96	60	0.65	390
CM45322R2KL□-□□□	2.20 ±10%	50	7.96	55	0.70	380
CM45322R7KL□-□□□	2.70 ±10%	50	7.96	50	0.75	370
CM45323R3KL□-□□□	3.30 ±10%	50	7.96	45	0.80	355
CM45323R9KL□-□□□	3.90 ±10%	50	7.96	40	0.90	330
CM45324R7KL□-□□□	4.70 ±10%	50	7.96	35	1.00	315
CM45325R6KL□-□□□	5.60 ±10%	50	7.96	33	1.10	300
CM45326R8KL□-□□□	6.80 ±10%	50	7.96	27	1.20	285
CM45328R2KL□-□□□	8.20 ±10%	50	7.96	25	1.40	270
CM4532100KL□-□□□	10.00 ±10%	50	2.52	20	1.60	250
CM4532120KL□-□□□	12.00 ±10%	50	2.52	18	2.00	225
CM4532150KL□-□□□	15.00 ±10%	50	2.52	17	2.50	200
CM4532180KL□-□□□	18.00 ±10%	50	2.52	15	2.80	190
CM4532220KL□-□□□	22.00 ±10%	50	2.52	13	3.20	180
CM4532270KL□-□□□	27.00 ±10%	50	2.52	12	3.60	170
CM4532330KL□-□□□	33.00 ±10%	50	2.52	11	4.00	160
CM4532390KL□-□□□	39.00 ±10%	50	2.52	10	4.50	150
CM4532470KL□-□□□	47.00 ±10%	50	2.52	10	5.00	140
CM4532560KL□-□□□	56.00 ±10%	50	2.52	9.0	5.50	135
CM4532680KL□-□□□	68.00 ±10%	50	2.52	9.0	6.00	130
CM4532820KL□-□□□	82.00 ±10%	50	2.52	8.0	7.00	120
CM4532101KL□-□□□	100.00 ±10%	40	0.796	8.0	8.00	110
CM4532121KL□-□□□	120.00 ±10%	40	0.796	6.0	8.00	110
CM4532151KL□-□□□	150.00 ±10%	40	0.796	5.0	9.00	105
CM4532181KL□-□□□	180.00 ±10%	40	0.796	5.0	9.50	102
CM4532221KL□-□□□	220.00 ±10%	40	0.796	4.0	10.00	100
CM4532271KL□-□□□	270.00 ±10%	40	0.796	4.0	12.00	92
CM4532331KL□-□□□	330.00 ±10%	40	0.796	3.5	14.00	85
CM4532391KL□-□□□	390.00 ±10%	40	0.796	3.0	18.00	80
CM4532471KL□-□□□	470.00 ±10%	40	0.796	3.0	26.00	62
CM4532561KL□-□□□	560.00 ±10%	30	0.796	3.0	30.00	50
CM4532681KL□-□□□	680.00 ±10%	30	0.796	3.0	30.00	50
CM4532821KL□-□□□	820.00 ±10%	30	0.796	2.5	35.00	30
CM4532102KL□-□□□	1000.00 ±10%	20	0.252	2.5	40.00	30

1). □ : Packaging information ... [A] : Bulk [B] : Taping Reel

2). "-□□□": Reference code

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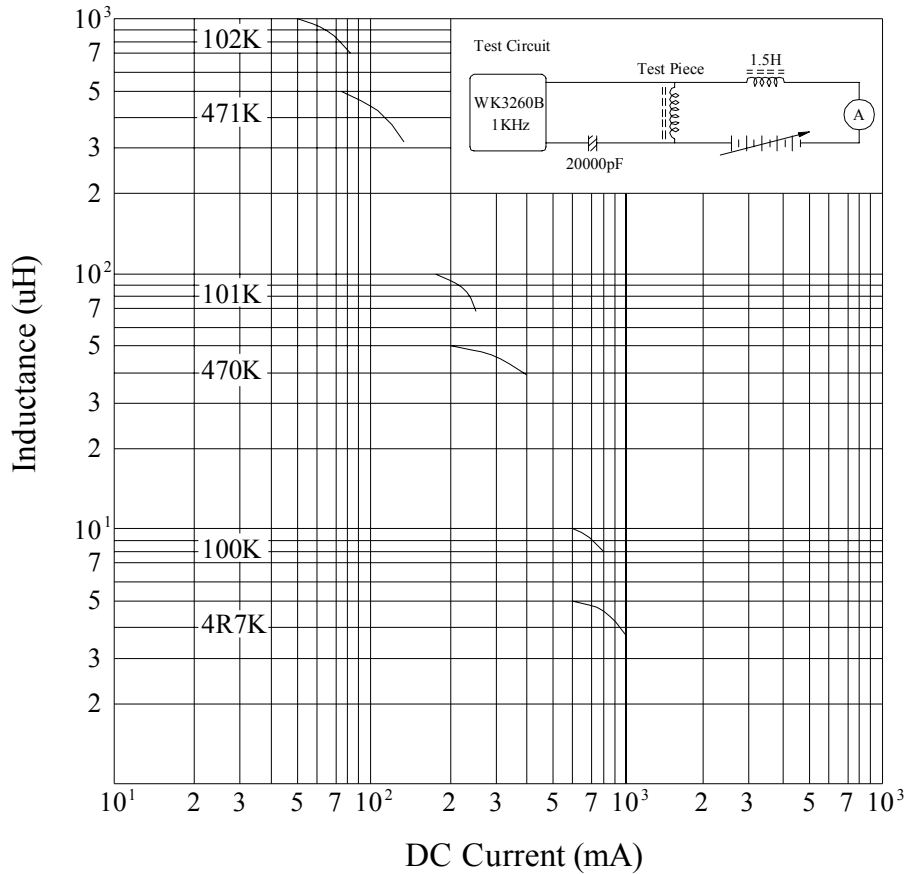
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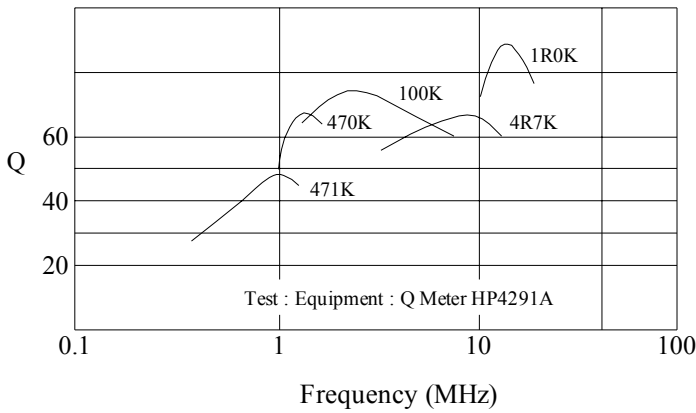
PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO. ABC'S ITEM NO.	CM4532□□□□L□-□□□
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. CURVE :

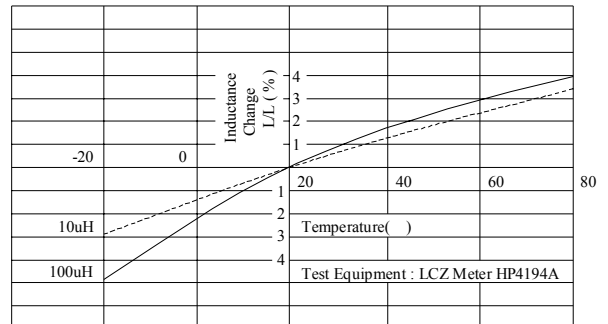
@ Inductance VS. DC Superposition Characteristics



@ Q VS. Frequency Response



@ Inductance Change VS. Temperature Response



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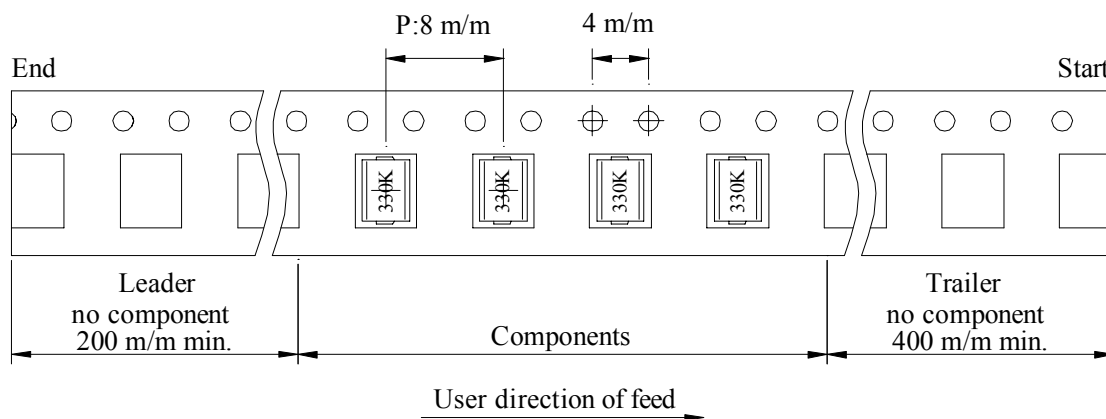
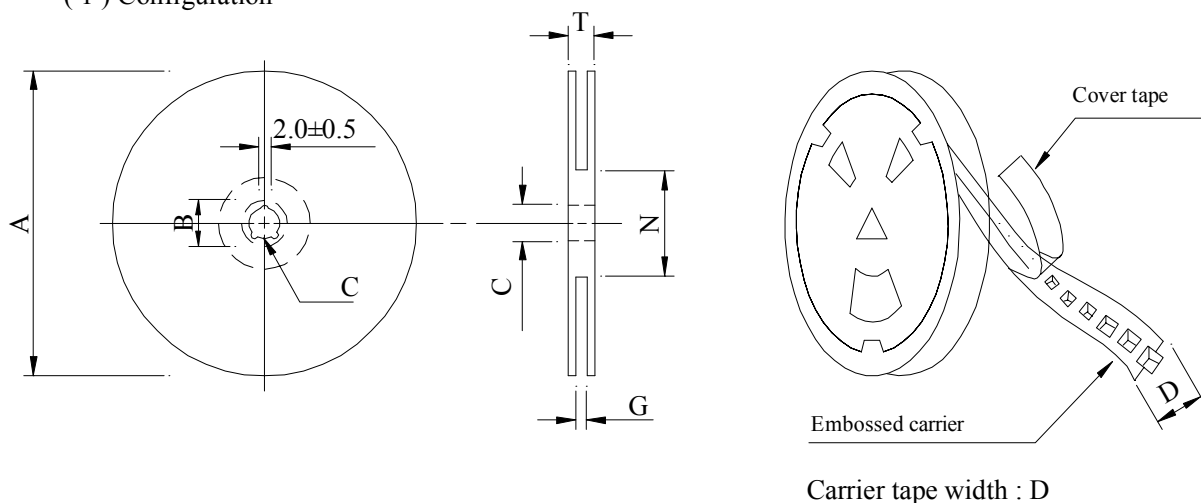
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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM4532□□□□L□-□□□
		ABC'S ITEM NO.	

**PACKAGING INFORMATION :**

( 1 ) Configuration



There is no differentiation or directions of polarity ( marking ) in the packaging method.

( 2 ) Dimensions

Unit:m/m

Style	A	B	C	D	G	N	T
07 - 12	178	21±0.8	13	12	14 <sup>+0</sup>	50 <sup>-0</sup>	16.5
13 - 12	330	21±0.8	13±0.5	12	14 <sup>+0</sup>	50 <sup>-0</sup>	18.4

( 3 ) Q'TY & G.W. Pe package

Series	Inner : Reel			Outer : Carton		
	Q'TY (pcs)	G.W. (gw)	Style	Q'TY (pcs)	G.W. (Kg)	Size (cm)
CM4532	500	130	07 - 12	20,000	7.20	41 x 39 x 22
CM4532	2000	540	13 - 12	18,000	6.50	41 x 39 x 22

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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM4532□□□□L□-□□□
		ABC'S ITEM NO.	

. RELIABILITY TEST :

Test item	Specification	Test condition / Test method
● Electrical performance test		
Inductance L	Refer to standard electrical characteristic list	□HP4194A with HP-16034E test fixture
Q		
Self resonance frequency SRF		□HP4291A with HP-16093A test fixture
DC Resistance RDC		CH-502AC
Rated current IDC		Applied the current to coils , The Inductance change shall be less than 10% to initial value & temperature rise shall not be more than 20
Temperature rise test	20 max.	1 . Applied the allowed DC current for 10 minutes 2 . Temperature measure by digital surface thermometer
Over load test	After test , Inductors shall be no evidence of electrical and mechanical damage	Applied 2 times of rated allowed DC current to inductor for a period of 5 minutes
Withstanding voltage test	After tset , Inductors shall be no evidence of electrical and mechanical damage	AC voltage of 1000VAC applied between inductors terminal and coating for 5 seconds
Insulation resistance test	1000 MΩ min .	100 VDC applied between inductor terminal and coating
● Mechanical performance test		
Vibration test ( Low frequency )	1 . Inductors shall be no evidence of electrical and mechanical damage	1 . Amplitude : 1.5 m/m 2 . Frequency : 10 -- 55 -- 10 Hz / 1min. 3 . Direction : X , Y , Z 4 . Duration : 2 hrs / X , Y , Z
Shock test	2 . Inductance shall not change more than±5%	Inductors shall be dropped 10 times from a height of 1m onto 3cm wooden board
Resistance to soldering heat	3 . Q Shall not change more than ±20%	Temp : 260±5 Time : 10±1.0 sec.

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PROD. NAME	WOUND CHIP INDUCTOR	ABC'S DWG NO.	CM4532□□□□L□-□□□
		ABC'S ITEM NO.	
Terminal strength-pull test	Terminal shall not be loosened or ruptured	A 0.5kg load shall be applied to both Terminals in the axis direction for 1 minute .	
Solderability test	The terminal shall be at least 90% covered with solder	After fluxing , Inductor shall be dipped in a melted solder bath at 240±5 for 5 seconds .	
Resistance to solvent test	There shall be no case deformation change in appearance or obliteration of marking	MIL-STD-202F , Method 215D	
● Climatic test			
Temperature characteristic	1 . Inductors shall be no evidence of electrical and mechanical damage  2 . Inductance shall not change more than ±10%  3 . Q shall not change more than ±20%	-40 -- +125	
Humidity test		1 . Temp : 40±2 2 . R.H. : 90 -- 95% 3 . Time : 96±2 hours	
Cold test		1 . Temp : -25±2 2 . Time : 96±2 hours	
Thermal shock test		<p style="text-align: center;">Total : 5 cycles</p>	
Dry heat test		1 . Temp : 85±2 2 . Time : 96±2 hours	
High temperature load life test	There shall be no evidence of short or open circuiting	1 . Temp : 85±2 2 . Time : 1000±12 hours 3 . Load : Allowed DC current	
Humidity load life		1 . Temp : 40±2 2 . R.H. : 90 -- 95% 3 . Time : 1000±12 hours 4 . Load : Allowed DC current	
● Note : Unless otherwise specified , Allow the specimen to stand at room temperature for 1 hour or more but not more than 2 hours , Measure the electrical and mechanical performances			

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PROD. NAME	<b>WOUND CHIP INDUCTOR</b>	ABC'S DWG NO.	CM4532□□□□L□-□□□
		ABC'S ITEM NO.	

**UL CARD :**

**OBMW2** August 27, 1999

**Magnet Wire-Component**

**ELEKTRISOLA (MALAYSIA) SDN BHD** E143312  
**IALAN DAMN SATU IANDA BAIK 28750 BENTONG, PAHANG**  
**DARUL MAKMUR MALAYSIA**

Mtl Dsg	Mark Dsg	Coating Type		ANSI Typ	Temp Class
		BC	OC		
Estersol 160	E180	Polyesterimide (solderable)	---	MW-77	180
Amldester 200	A200	Polyesterimide	---	MW-74	200
Polysol-N 155	PN155	Polyurechane	Nylon	MW-80, MW-28	155, 100
Polysol 155	P155	Polyurechane	---	MW-79, MW-79	155, 130
Polysol 155g	Pg155	Polyurechane	---	MW-79	130
Polysol 155p	Pp155,Gp155	Polyurechane	---	MW-79	155
Polysol 160	P160	Polyurechane	---	MW-79	155
Polysol 180	P180	Polyurechane	---	MW-79	155
Polysol 170	P170 or G170	Polyurechane	---	MW-79	156
Polysol-N 180	PN180	Polyurechane	Nylon	---	180

Marking : Company name/material designation or marked designation and factory identification on package ok reel

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See General Information preceding These Recognitions  
 For use only in equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

**OMFZ2** March 4, 1994

**Component-Plastics**

**CHANG CHUN PLASTICS CO LTD** E59481 (S)  
( F1-cont. from F card )

BM-21	ALL	0.79	94HB	50	50	50	—	—	—	—	—
BM-22	ALL	0.79	94HB	50	50	50	—	—	—	—	—
BM-23	ALL	0.79	94V-0	50	50	50	—	—	—	—	—
EME-1100	BK	0.84	94V-0	130	130	130	—	—	—	—	—
	BK	6.4	94V-0	130	130	130	—	—	—	—	—
EME-1200	BK	0.84	94V-0	130	130	130	—	—	—	—	—
	BK	6.4	94V-0	130	130	130	—	—	—	—	—
EME-5961C	BK	0.3	94V-0	130	130	130	—	—	—	—	—
	BK	3.1	94V-0	130	130	130	—	—	—	—	—

Reports: January 19, 1988: January 19, 1988: January 19, 1988: June 2, 1988;  
 June 2, 1998; June 2, 1988.

**Replaces E59481C dated February 7, 1989.** (Cont. on C1 card)  
 262854001 N7047 Underwriters Laboratories Inc.® D11/0018965

