Specification for Approval

Customer ：

Product Name ： Wire Wound Common Mode Choke Coil

HONGYEX P/N： CMF4532C series

Customer P/N：

DATE ： 2018.04.25

【 R&D Center】

Approved By	Checked By	Issued By
Qiu Ke	Zhan Jun	Liu Yi

【Customer Approval】

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1. SCOPE

This specification applies to the CMF-4532 series Wire Wound Common Mode Choke Coil.

2. STANDARD ATMOSPHERIC CONDITIONS

Unless otherwise specified the standard range of atmospheric conditions for making measurements and tests is as follows:

Ambient temperature : 20±15℃

Relative humidity : 30~70%

If there may be any doubt on the results, measurements shall be made within the following limits :

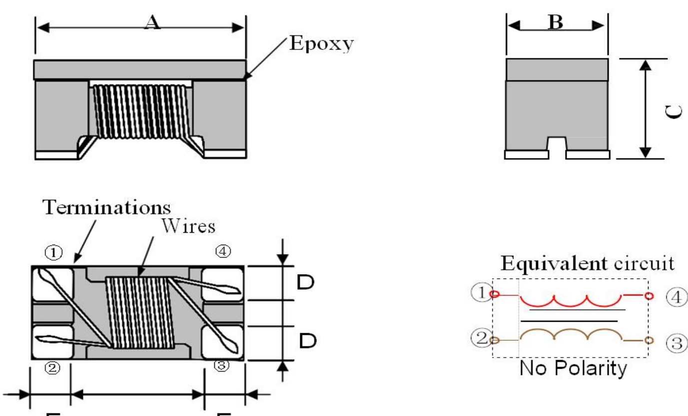
Ambient temperature : 25±5℃

Relative humidity : 30~70%

3. RATINGS

PART NO	L(μH) Common mode inductance at 100KHz (+50%/-30%)	DC Resistance (Ω)MAX	Rated Current (mA)MAX	Rated Voltage (V)MAX	Insulation resistance (MΩ)MIN
CMF4532C-110	11	0.60	250	50	10
CMF4532C-220	22	1.00	200	50	10
CMF4532C-510	51	1.00	200	50	10
CMF4532C-101	100	2.00	150	50	10
CMF4532C-201	200	4.50	100	50	10

4. SHAPE AND DIMENSION(Unit: mm)



SIZE	A mm	B mm	C mm	D mm	E mm
4532	4.5±0.2	3.2±0.2	2.7±0.2	(0.80Typ.)	(0.60Typ.)

5. ELECTRICAL CHARACTERISTICS

CMF 4532C-110

Impedance(Ω) 10 100 1000 10000 100000

Frequency(MHz) 1 10 100 1000

CMF 4532C-220

Impedance(Ω) 1 10 100 1000 10000

Frequency(MHz) 1 10 100 1000

CMF 4532C-510

Impedance(Ω) 10 100 1000 10000 100000

Frequency(MHz) 1 10 100 1000

CMF 4532C-101

Impedance(Ω) 10 100 1000 10000 100000

Frequency(MHz) 1 10 100 1000

CMF 4532C-201

Impedance(Ω) 10 100 1000 10000 100000

Frequency(MHz) 1 10 100 1000

6.RELIABILITY AND TEST CONDITIONS

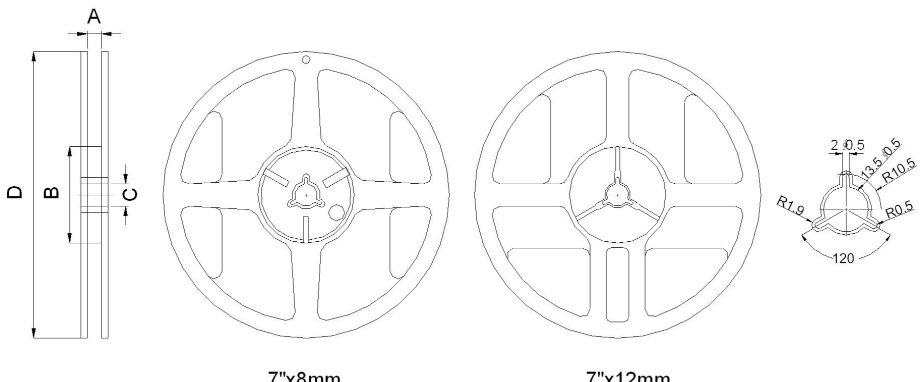
<table>
<tr><th>Items</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>1.Operating Temperature Range</td><td colspan="2">－40℃~＋125℃</td></tr>
<tr><td>2.Storage Temperature and Humidity Range</td><td colspan="2">－10℃~＋40℃,70%RH max.</td></tr>
<tr><td>3.Terminal Strength</td><td>No removal or split of the termination or other defects shall occur.
<table><tr><th>SIZE</th><th>force(kgf)</th><th>Time(sec)</th></tr><tr><td>1210</td><td>0.2</td><td rowspan="5">30</td></tr><tr><td>1608</td><td>0.5</td></tr><tr><td>2012</td><td>0.5</td></tr><tr><td>3216</td><td>1.0</td></tr><tr><td>4532</td><td>1.0</td></tr></table></td><td>1)Solder the chip to the testing jig (glass epoxy board shown as the following figure) using eutectic solder. Then apply a force in the direction of the arrow.
Pressure
Substrate
Product
Test board fixture</td></tr>
<tr><td>4.Substrate Bending Test</td><td>No visible mechanical damage.</td><td>1)Solder the chip to the test jig (glass epoxy board) using a eutectic solder. Then apply a force in the direction shown as the following figure.
2)Flexure: 2mm
3)Pressurizing Speed: 0.5mm/sec
4)Keep time: ≥5 sec
20
50
R230
Flexure: 2mm
45
45
Unit: mm</td></tr>
</table>

Items	Performance	Test Condition
5.Vibration Test	No visible mechanical damage. Solder mask Cu pad Glass Epoxy Board	1)Solder the chip to the testing jig (glass epoxy board shown as the following figure) using eutectic solder. 2)The chip shall be subjected to a simple harmonic motion having total amplitude of 1.5 mm, the frequency being varied uniformly between the approximate limits of 10 and 55 Hz. 3)The freq uency range from 10 to 55 Hz and return to 10 Hz shall be traversed in approximately 1 minute. This motion shall be applied for a period of 2 hours in each 3 mutually perpendicular directions (total of 6 hours).
6.Dropping	No visible mechanical damage.	Drop the chip 3 times on a concrete floor from a height of 100 cm.
7.Thermal Shock	1)No mechanical damage. 2) Impedance change: Within ±20%. 3)Insulation Resistance: 10MΩ Min.	1)Temperature and time: -40℃ ℃ for 30±3 min →85 for 30±3min 2)Transforming interval: Max. 20 sec 3)Tested cycle: 250 cycles 4) The chip shall be stabilized at normal condition for 1~2 hours before measuring. 30 min. 30 min. 85℃ Ambient Temperature 30 min. -40℃ 20sec. (max.)

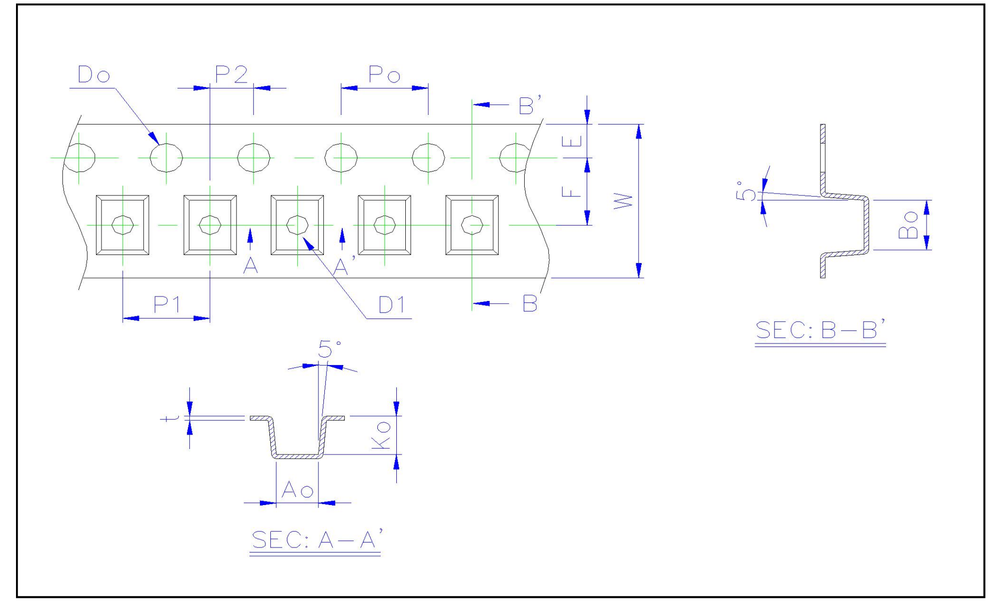
Items	Performance	Test Condition
8.High Temperature Resistance	1)No visible mechanical damage. 2)Impedance change: Within ±20%. 3)Insulation Resistance: 10MΩ Min.	1) Temperature: 85±2℃ 2)Duration: 500+12 hours 3)Applied current: Rated current 4)The chip shall be stabilized at normal condition for 1~2 hours before measuring. 85℃ Room temperature 500 hours 2 hours
9.Low Temperature Resistance	1)No mechanical damage. 2)Impedance change: Within ±20%. 3)Insulation Resistance: 10MΩ Min.	1)Temperature: -40±2℃ 2) Duration: 500+12hours 3) The chip shall be stabilized at normal condition for 1~2 hours before measuring.
10.Humidity Resistance	1)No mechanical damage. 2)Impedance change: Within ±20%. 3)Insulation Resistance: 10MΩ Min.	1)Humidity: 90 to 95%RH 2)Temperature: 60 ± 2℃ 3)Duration: 500 ± 12 hours 4)The chip shall be stabilized at normal condition for 1~2 hours before measuring. 60℃ Room temperature 500 hours 2 hours

Items	Performance	Test Condition
11.Solderability	Wetting shall be exceeded 90% coverage, except welding points.	1)Solder temperature: 240±2℃ 2)Duration: : 4±1 sec 3) Solder: Sn/3.0Ag/0.5Cu 4) Flux: 25% Resin and 75% ethanol in weight Stainless tweezers Please hold product except these part
12.Resistance to Soldering Heat	1)No visible mechanical damage. 2)Impedance change: within ±20%. 3)Insulation Resistance: 10MΩ Min.	1)Solder temperature: 260±3℃ 2) Duration: 5sec 3) Solder: Sn/3.0Ag/0.5Cu 4) Flux: 25% Resin and 75% ethanol in weight 5) The chip shall be stabilized at normal condition for 1~2hours before measuring.
13. Loading Under Damp Heat	1)No visible mechanical damage. 2)Impedance change: within ±20%. 3)Insulation Resistance: 10MΩ Min.	1)Temperature: 60±2℃ 2)Humidity: 90% to 95% RH 3)Duration: 500+12 hours 4)Applied current: Rated current. 5)The chip shall be stabilized at normal condition for 1~2 hours before measuring.
14.Loading at High Temperature (Life Test)	1)No visible mechanical damage. 2)Impedance change: within ±20%. 3)Insulation Resistance: 10MΩ Min.	1)Temperature: 85±2℃ 2)Duration: 500+12 hours 3)Applied current: Rated current 4)The chip shall be stabilized at normal condition for 1~2hours before measuring.

7.EMBOSSED CARRIER TAPE PACKAGING



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.0±0.5	60±2	13.5±0.5	178±2
7"x12mm	13.5±0.5	60±2	13.5±0.5	178±2

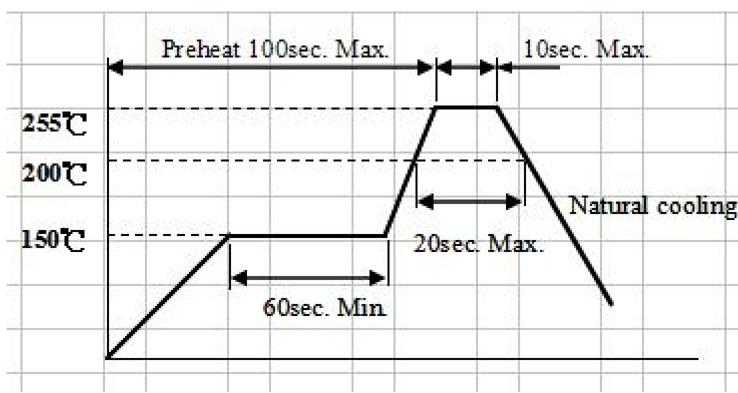


Size	Ao(mm)	Bo(mm)	Ko(mm)	W(mm)	E(mm)	F(mm)	Po(mm)	P1(mm)	Do(mm)
1210	1.40±0.10	1.15±0.10	0.93±0.10	8.00±0.20	1.75±0.10	3.50±0.05	4.0±0.05	4.0±0.10	1.5+0.1,-0
1608	1.00±0.10	1.65±0.10	1.18±0.10	8.00±0.20	1.75±0.10	3.50±0.05	4.0±0.05	4.0±0.10	1.5+0.1,-0
2012	1.50±0.10	2.35±0.10	1.45±0.10	8.00±0.20	1.75±0.10	3.50±0.05	4.0±0.05	4.0±0.10	1.5+0.1,-0
3216	1.88±0.10	3.50±0.10	2.10±0.10	8.00±0.20	1.75±0.10	3.50±0.05	4.0±0.05	4.0±0.10	1.5+0.1,-0
4532	3.45±0.10	4.90±0.10	3.05±0.10	12.00±0.20	1.75±0.10	5.50±0.05	4.0±0.05	8.0±0.10	1.5+0.1,-0

Packaging quantity(pcs)

Chip Size	1210	1608	2012	3216	4532
8mm/ Reel	3000	2000	2000	2000	500

8.Recommendbale reflow soldering



9. Storage

1) The solderability of the external electrodes may deteriorate if packages are stored in high humidity. Packages must be stored at below 40℃ and 70% RH.

2) The solderability of the external electrodes may deteriorate if packages are exposed to dust of harmful gas (e.g. HCl, sulfurous gas of H2S).

3) Packaging materials may deform if packages are exposed directly to sunlight.

4) Minimum packages, such as polyvinyl heat-seal packages shall not be opened until they are used. If opened, use the reels as soon as possible.

5) Solderability shall be guaranteed for a period of time from the date of delivery on condition that they are stored at the specified environment. For those parts, which passed more than 6months shall be checked solderability before using.