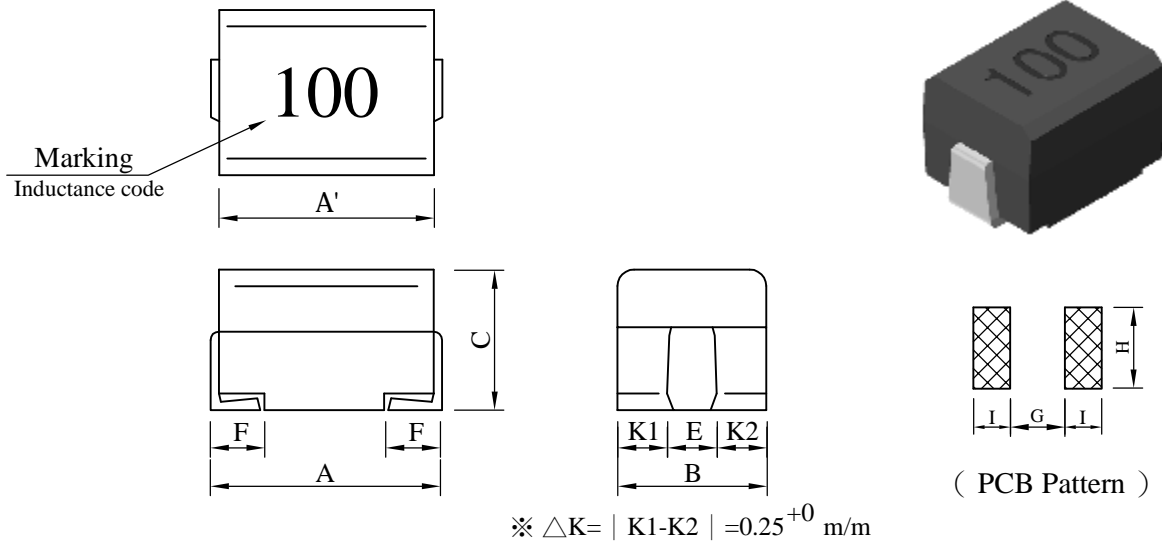


SPECIFICATION FOR APPROVAL

REF. :

| | | | | | | |
|------------|---------------------|---------------|------------|------------------|---|--|
| PROD. NAME | Wound Chip Inductor | ABC'S DWG NO. | | CM3225□□□□L□-□□□ | | |
| | | REV. | 20121109-L | PAGE | 1 | |

I . Configuration and dimensions :



Unit : m/m

| A | A' | B | C | E | F | G | H | I |
|-----------|-----------|-----------|-----------|-----------|---|------|------|------|
| 3.20 ±0.4 | 2.90 ±0.2 | 2.50 ±0.2 | 2.20 ±0.2 | 1.00 ±0.2 | 0.60 $\begin{smallmatrix} +0.3 \\ -0 \end{smallmatrix}$ | 1.80 | 1.40 | 1.00 |

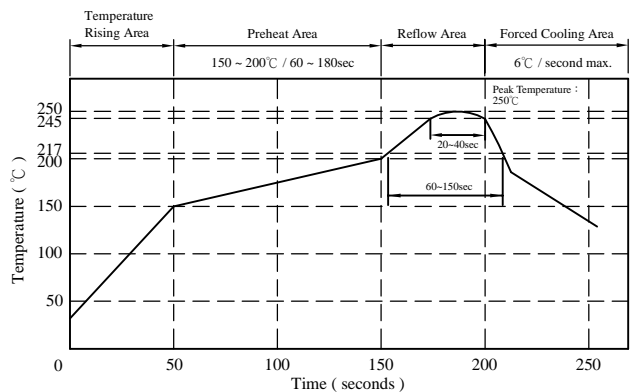
II . Description :

- a . Ferrite drum core construction.
- b . Enamelled copper wire : H class
- c . Product weight : 0.05 g (ref.)
- d . Moisture sensitivity Level 3
- e . Products comply with RoHS' requirements

III . General Specification :

- a . Temp. rise : 20°C max.
- b . Ambient temp. : 100°C max.
- c . Storage temp. : -40°C ----+125°C
- d . Operating temp. : -40°C ----+125°C
(Temp. rise included)
- e . Terminal pull strength : 1.5 kg min.
- f . Rated current : Current cause
inductance drop within 10%
- g . Resistance to solder heat : 250°C .10 secs.
- h . Resistance to solvent : Per MIL-STD-202F

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



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SPECIFICATION FOR APPROVAL

REF. :

| | | | | | |
|------------|---------------------|---------------|------------------|------|---|
| PROD. NAME | Wound Chip Inductor | ABC'S DWG NO. | CM3225□□□□L□-□□□ | | |
| | | REV. | 20121109-L | PAGE | 2 |

IV . Electrical characteristics :

| DWG No. | Inductance (μH) | Q min. | Test Freq (MHz) | SRF (MHz) min. | RDC (Ω) max. | IDC (mA) max |
|------------------|-----------------|--------|-----------------|----------------|--------------|--------------|
| CM3225R12ML□-□□□ | 0.120±20% | 30 | 25.2 | 500 | 0.22 | 450 |
| CM3225R15ML□-□□□ | 0.150±20% | 30 | 25.2 | 450 | 0.25 | 450 |
| CM3225R18ML□-□□□ | 0.180±20% | 30 | 25.2 | 400 | 0.28 | 450 |
| CM3225R22ML□-□□□ | 0.220±20% | 30 | 25.2 | 350 | 0.32 | 450 |
| CM3225R27ML□-□□□ | 0.270±20% | 30 | 25.2 | 320 | 0.36 | 450 |
| CM3225R33ML□-□□□ | 0.330±20% | 30 | 25.2 | 300 | 0.40 | 450 |
| CM3225R39ML□-□□□ | 0.390±20% | 30 | 25.2 | 250 | 0.45 | 450 |
| CM3225R47ML□-□□□ | 0.470±20% | 30 | 25.2 | 220 | 0.50 | 450 |
| CM3225R56ML□-□□□ | 0.560±20% | 30 | 25.2 | 180 | 0.55 | 450 |
| CM3225R68ML□-□□□ | 0.680±20% | 30 | 25.2 | 160 | 0.60 | 450 |
| CM3225R82ML□-□□□ | 0.820±20% | 30 | 25.2 | 140 | 0.65 | 450 |
| CM32251R0KL□-□□□ | 1.000±10% | 30 | 7.96 | 120 | 0.70 | 400 |
| CM32251R2KL□-□□□ | 1.200±10% | 30 | 7.96 | 100 | 0.75 | 390 |
| CM32251R5KL□-□□□ | 1.500±10% | 30 | 7.96 | 85 | 0.85 | 370 |
| CM32251R8KL□-□□□ | 1.800±10% | 30 | 7.96 | 80 | 0.90 | 350 |
| CM32252R2KL□-□□□ | 2.200±10% | 30 | 7.96 | 75 | 1.00 | 320 |
| CM32252R7KL□-□□□ | 2.700±10% | 30 | 7.96 | 70 | 1.10 | 290 |
| CM32253R3KL□-□□□ | 3.300±10% | 30 | 7.96 | 60 | 1.20 | 260 |
| CM32253R9KL□-□□□ | 3.900±10% | 30 | 7.96 | 55 | 1.30 | 250 |
| CM32254R7KL□-□□□ | 4.700±10% | 30 | 7.96 | 50 | 1.50 | 220 |
| CM32255R6KL□-□□□ | 5.600±10% | 30 | 7.96 | 45 | 1.60 | 200 |
| CM32256R8KL□-□□□ | 6.800±10% | 30 | 7.96 | 40 | 1.80 | 180 |
| CM32258R2KL□-□□□ | 8.200±10% | 30 | 7.96 | 35 | 2.00 | 170 |
| CM3225100KL□-□□□ | 10.000±10% | 30 | 2.52 | 30 | 2.10 | 150 |
| CM3225120KL□-□□□ | 12.000±10% | 30 | 2.52 | 20 | 2.50 | 140 |
| CM3225150KL□-□□□ | 15.000±10% | 30 | 2.52 | 20 | 2.80 | 130 |
| CM3225180KL□-□□□ | 18.000±10% | 30 | 2.52 | 20 | 3.30 | 120 |
| CM3225220KL□-□□□ | 22.000±10% | 30 | 2.52 | 20 | 3.70 | 110 |
| CM3225270KL□-□□□ | 27.000±10% | 30 | 2.52 | 20 | 5.00 | 80 |
| CM3225330KL□-□□□ | 33.000±10% | 30 | 2.52 | 17 | 5.60 | 70 |
| CM3225390KL□-□□□ | 39.000±10% | 30 | 2.52 | 16 | 6.40 | 65 |
| CM3225470KL□-□□□ | 47.000±10% | 30 | 2.52 | 15 | 7.00 | 60 |
| CM3225560KL□-□□□ | 56.000±10% | 30 | 2.52 | 13 | 8.00 | 55 |
| CM3225680KL□-□□□ | 68.000±10% | 30 | 2.52 | 12 | 9.00 | 50 |
| CM3225820KL□-□□□ | 82.000±10% | 30 | 2.52 | 11 | 10.00 | 45 |
| CM3225101KL□-□□□ | 100.000±10% | 20 | 0.796 | 10 | 11.00 | 40 |
| CM3225121KL□-□□□ | 120.000±10% | 20 | 0.796 | 10 | 11.00 | 70 |
| CM3225151KL□-□□□ | 150.000±10% | 20 | 0.796 | 8 | 15.00 | 65 |

- 1). □: Packaging information : □ Code
- 2). "-□□□" : Reference code
- 3). Electrical specifications at 25°C

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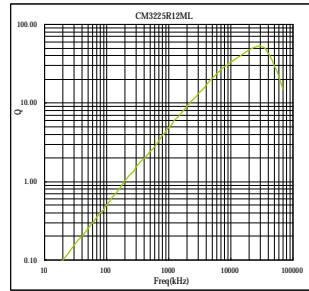
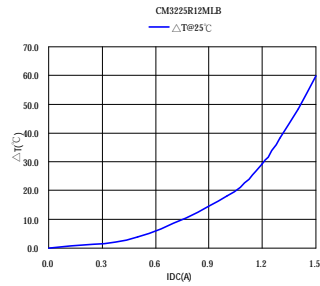
SPECIFICATION FOR APPROVAL

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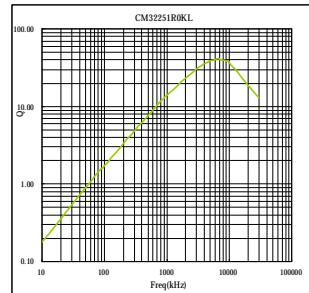
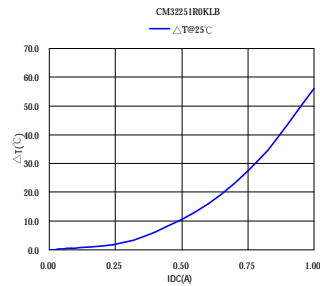
| | | | | | |
|---------------|---------------------|---------------|------------------|------|---|
| PROD. NAME | Wound Chip Inductor | ABC'S DWG NO. | CM3225□□□□L□-□□□ | | |
| | | REV. | 20121109-L | PAGE | 3 |

V . Curve :

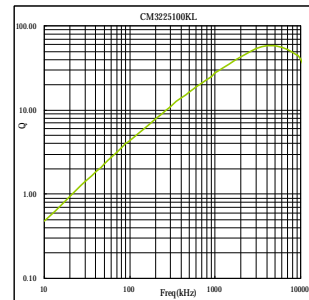
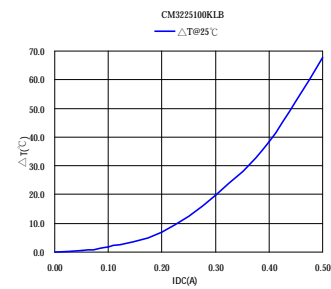
CM3225R12ML□-□□□



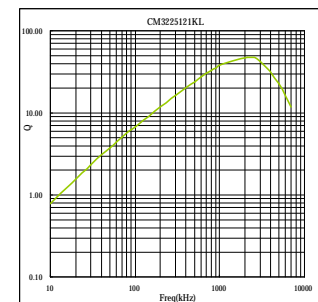
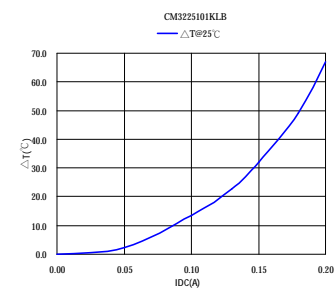
CM32251R0KL□-□□□



CM3225100KL□-□□□



CM3225121KL□-□□□



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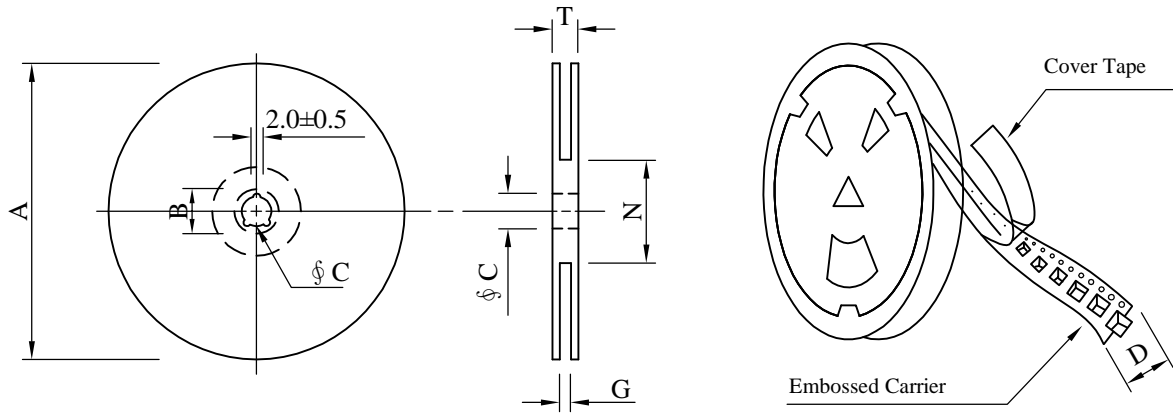
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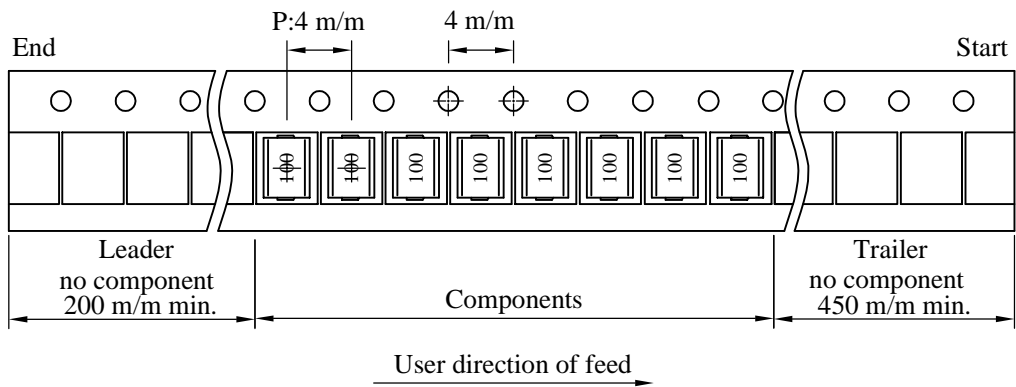
| | | | | | |
|------------|---------------------|---------------|------------------|------|-----|
| PROD. NAME | Wound Chip Inductor | ABC'S DWG NO. | CM3225□□□□L□-□□□ | | |
| | | REV. | 20121109-L | PAGE | 4-1 |

VI-1 . Packaging information :

(1) Configuration



※Carrier Tape Width : D



(2) Dimensions

Unit:m/m

| Style | A | B | C | D | G | N | T |
|------------|-----|--------|----|---|------------------|------------------|------|
| 07 - 08 | 178 | 21±0.8 | 13 | 8 | 10 ⁺⁰ | 50 ⁻⁰ | 12.5 |
| 07(S) - 08 | 183 | 21±0.8 | 13 | 8 | 10 ⁺⁰ | 50 ⁻⁰ | 12.5 |

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

| Code | Inner : Reel | | | Outer : Carton | | |
|------|--------------|-----------|------------|----------------|-----------|--------------|
| | Q'TY (pcs) | G.W. (gw) | Style | Q'TY (pcs) | G.W. (Kg) | Size (cm) |
| B | 1,000 | 110 | 07 - 08 | 50,000 | 7.50 | 41 x 39 x 22 |
| C | 2,000 | 220 | 07(S) - 08 | 100,000 | 15.00 | 41 x 39 x 22 |
| E | 1,000 | 110 | 07 - 08 | 50,000 | 7.50 | 41 x 39 x 22 |

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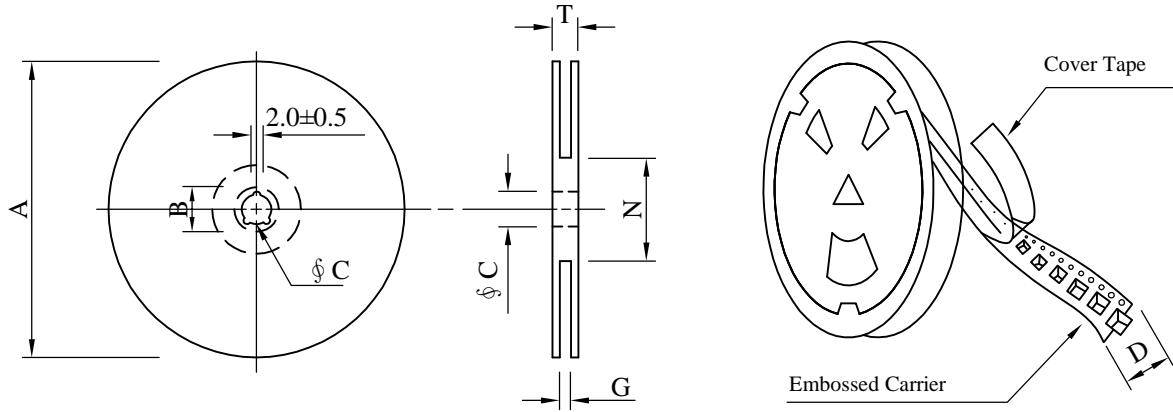
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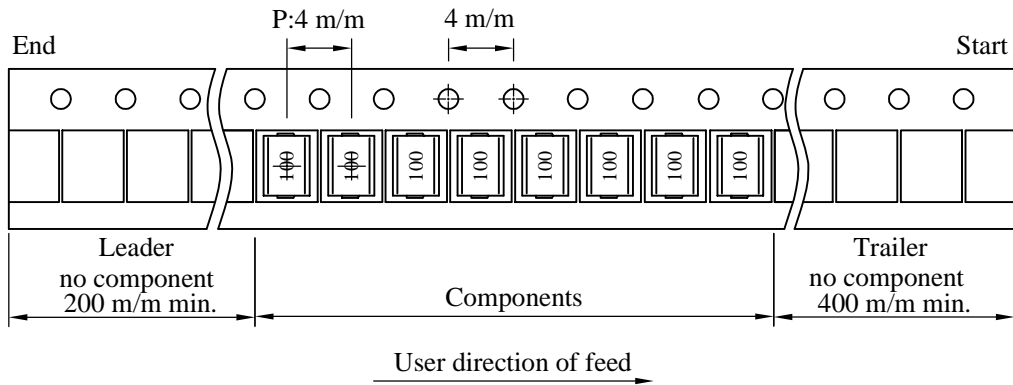
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|------------|---------------------|---------------|------------------|------|-----|
| PROD. NAME | Wound Chip Inductor | ABC'S DWG NO. | CM3225□□□□L□-□□□ | | |
| | | REV. | 20121109-L | PAGE | 4-2 |

VI-2 . Packaging information :

(1) Configuration



※Carrier Tape Width : D



(2) Dimensions

Unit:m/m

| Style | A | B | C | D | G | N | T |
|---------|-----|--------|--------|---|------------------|------------------|------|
| 13 - 08 | 330 | 21±0.8 | 13±0.5 | 8 | 10 ⁺⁰ | 50 ⁻⁰ | 12.5 |

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

| Code | Inner : Reel | | | Outer : Carton | | |
|------|--------------|-----------|---------|----------------|-----------|--------------|
| | Q'TY (pcs) | G.W. (gw) | Style | Q'TY (pcs) | G.W. (Kg) | Size (cm) |
| D | 7,000 | 770 | 13 - 08 | 84,000 | 9.80 | 41 x 39 x 22 |

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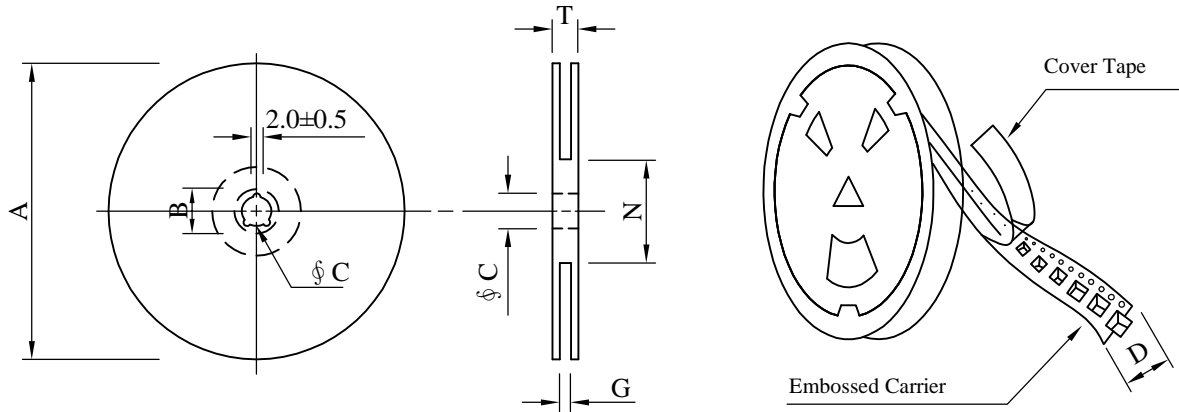
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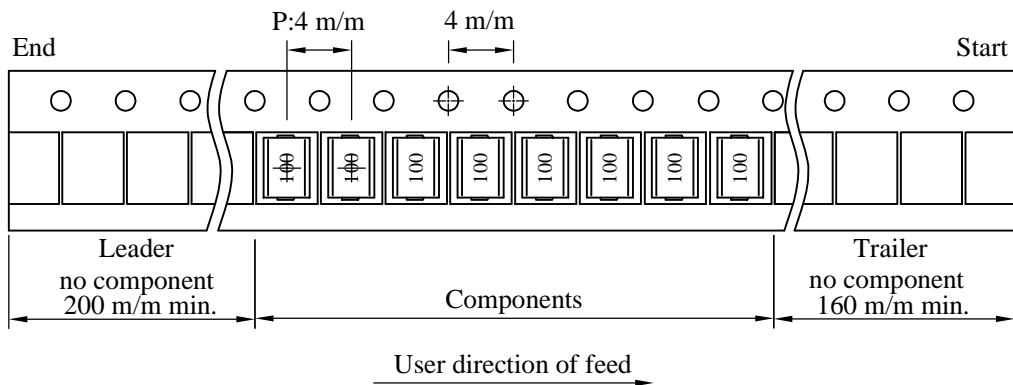
| | | | | | |
|------------|---------------------|---------------|------------------|------|-----|
| PROD. NAME | Wound Chip Inductor | ABC'S DWG NO. | CM3225□□□□L□-□□□ | | |
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VI-3 . Packaging information :

(1) Configuration



※Carrier Tape Width : D



(2) Dimensions

Unit:m/m

| Style | A | B | C | D | G | N | T |
|------------|-----|--------|----|---|------------------|------------------|------|
| 07(S) - 08 | 183 | 21±0.8 | 13 | 8 | 10 ⁺⁰ | 50 ⁻⁰ | 12.5 |

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

| Code | Inner : Reel | | | Outer : Carton | | |
|------|--------------|-----------|------------|----------------|-----------|--------------|
| | Q'TY (pcs) | G.W. (gw) | Style | Q'TY (pcs) | G.W. (Kg) | Size (cm) |
| F | 2,000 | 220 | 07(S) - 08 | 100,000 | 15.00 | 41 x 39 x 22 |

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SPECIFICATION FOR APPROVAL

REF. :

| | | | | | |
|----------------------------------|---|---|------------------|------|-----|
| PROD. NAME | Wound Chip Inductor | ABC'S DWG NO. | CM3225□□□□L□-□□□ | | |
| | | REV. | 20121109-L | PAGE | 5-1 |
| VII-1 . 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°C | | | |
| Temperature rise test | 20°C 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°C Time : 10±1.0 sec. | | | |

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SPECIFICATION FOR APPROVAL

REF. :

| | | | | | |
|--|---|--|------------------|------|-----|
| PROD. NAME | Wound Chip Inductor | ABC'S DWG NO. | CM3225□□□□L□-□□□ | | |
| | | REV. | 20121109-L | PAGE | 5-2 |
| VII-2 . Reliability test : | | | | | |
| 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°C 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°C -- +125°C | | | |
| Humidity test | | 1 . Temp : 40±2°C 2 . R.H. : 90 -- 95% 3 . Time : 96±2 hours | | | |
| Cold test | | 1 . Temp : -25±2°C 2 . Time : 96±2 hours | | | |
| Thermal shock test | | <pre> graph LR subgraph Cycle1 R1[Room temp] -- 15 mins --> T1[-40±2°C] T1 -- 30 mins --> R1 end subgraph Cycle2 R2[Room temp] -- 15 mins --> T2[+125±2°C] T2 -- 30 mins --> R2 end Cycle1 --- Cycle2 </pre> | | | |
| Dry heat test | | 1 . Temp : 85±2°C 2 . Time : 96±2 hours | | | |
| High temperature load life test | There shall be no evidence of short or open circuiting | 1 . Temp : 85±2°C 2 . Time : 1000±12 hours 3 . Load : Allowed DC current | | | |
| Humidity load life | | 1 . Temp : 40±2°C 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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