

深圳市方磁電子有限公司  
SHENZHEN FOUNDS ELECTRONICS CO., LTD

【物料承認書】

APPROVAL SHEET

客戶 (Customer) : \_\_\_\_\_

產品名稱 (Description) : Molding Power Inductor

客戶料號 (Cus P/N) : \_\_\_\_\_

料號 (Part NO) : PSM0530-Series

日期 (Date) : 2020/12/13

版本 (Version) : **A1.0**

|                   |                  |                |
|-------------------|------------------|----------------|
| 核准<br>APPROVED BY | 審核<br>CHECKED BY | 製作<br>DRAWN BY |
| TopoCheng         | InhenHuang       | AbbyShi        |

Please sign back after confirmation:

Client signature: ☐ Qualified ☐ Unqualified

|                |               |               |
|----------------|---------------|---------------|
| 批准<br>APPROVAL | 審核<br>CHECKED | 檢驗<br>CONFORM |
|                |               |               |

地址 (Adress) : 深圳市寶安區新安街道裕安二路

13 號 C33 科創園 2 棟 209 室

電話 (TEL) : 0755-83222650

傳真 (FAX) : 0755-83222656

<http://www.ele-founds.com>



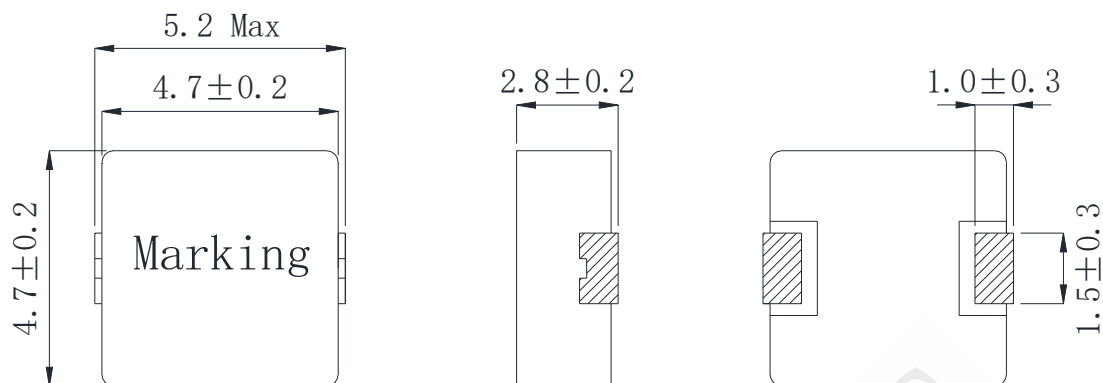
## Concent

|    |                                          |   |
|----|------------------------------------------|---|
| 一、 | Change record.....                       | 3 |
| 二、 | Appearance and dimensions (Unit:mm)..... | 3 |
| 三、 | Recommended land pattern (Unit:mm) ..... | 3 |
| 四、 | Schematic.....                           | 4 |
| 五、 | Electrical characteristics.....          | 4 |
| 六、 | Recommended soldering conditions .....   | 4 |
| 七、 | Reliability.....                         | 5 |
| 八、 | Packaging Specifications.....            | 6 |

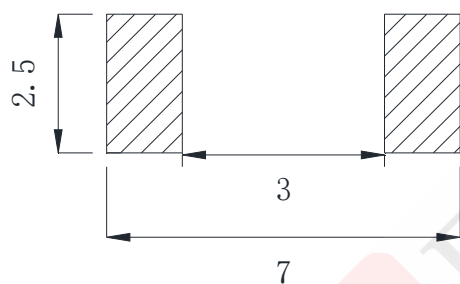
## 一、Change record

[illegible]

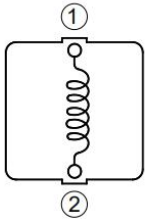
## 二、 Appearance and dimensions (Unit:mm)



## 三、 Recommended land pattern (Unit:mm)



## 四、Schematic

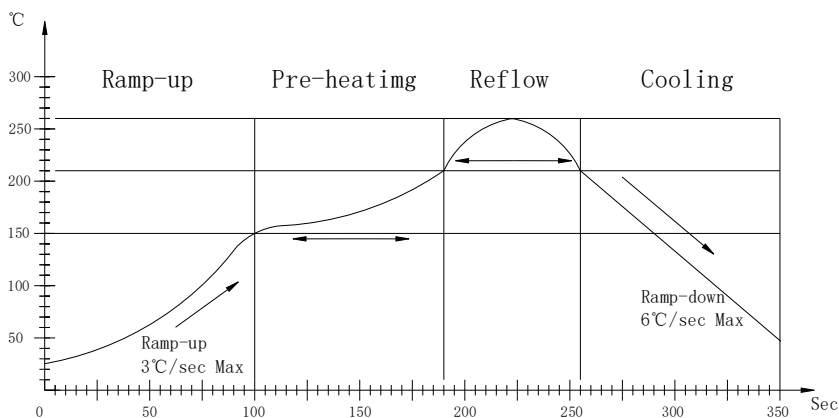


## 五、Electrical characteristics

| Series       | Inductance<br>L(uH) | DCR (mΩ)<br>Max | I <sub>sat</sub> (A)<br>Max | I <sub>rms</sub> (A)<br>Max |
|--------------|---------------------|-----------------|-----------------------------|-----------------------------|
| PSM0530BR10M | 0.10±20%            | 2.3             | 33.0                        | 25.0                        |
| PSM0530BR22M | 0.22±20%            | 3.9             | 17.0                        | 15.0                        |
| PSM0530BR35M | 0.35±20%            | 6.3             | 13.0                        | 12.0                        |
| PSM0530BR47M | 0.47±20%            | 8.0             | 12.0                        | 10.9                        |
| PSM0530BR68M | 0.10±20%            | 9.2             | 10.0                        | 9.9                         |
| PSM0530B1R0M | 1.0±20%             | 12.0            | 8.5                         | 8.5                         |
| PSM0530B2R2M | 2.2±20%             | 29.0            | 6.5                         | 5.5                         |
| PSM0530B3R3M | 3.3±20%             | 38.0            | 5.0                         | 4.7                         |
| PSM0530B4R7M | 4.7±20%             | 60.0            | 3.5                         | 3.5                         |
| PSM0530B6R8M | 6.8±20%             | 115.0           | 3.2                         | 2.8                         |

- 1.All test data is referenced to 25°C ambient
- 2.Inductance measure condition at 100KHz, 0.25V.
- 3.I<sub>sat</sub>: the actual value of DC current when the inductance decrease 30% of its initial value.
- 4.I<sub>rms</sub>:Temperature rise current the actual value of DC current when the temperature rise is ΔT40 (T<sub>a</sub>=25 ).
5. Operating temperature range -55°C to 125°C

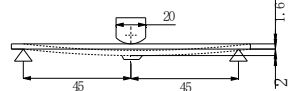
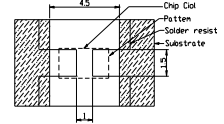
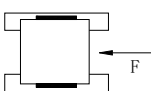
## 六、Recommended soldering conditions



## Lead-Free Standard temperature range analysis

| Item        | Ramp-up   | Pre-heating | Reflow    | Peak Temp |
|-------------|-----------|-------------|-----------|-----------|
| Temp.scope  | R.T~150°C | 150°C~200°C | 217°C     | 260±5°C   |
| Time spec   | -         | 60~80sec    | 60~150sec | 20~40sec  |
| Time result | -         | 75~100sec   | 90~120sec | 20~35sec  |

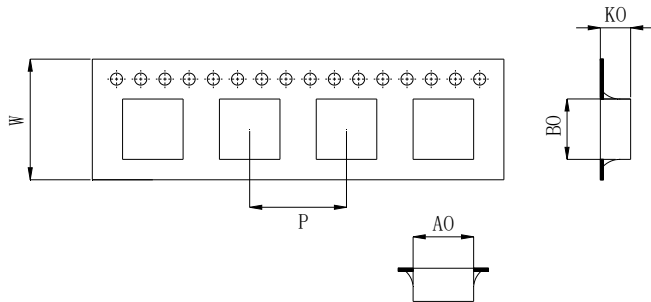
## 七、Reliability

| No. | Item                         | Specification                                                                                               | Test Method                                                                                                                                                                                                            |
|-----|------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Flexure Strength             | The forces applied on the right conditions must not damage the terminal electrode and the metal body        | Test device shall be soldered on the substrate<br>Substrate Dimension: 100x40x1.6mm<br>Deflection: 2.0mm<br>Keeping Time: 30sec<br> |
| 2   | Vibration                    | Appearance: No damage (for microscope of CASTOR MZ-45 20X)<br>Inductance change shall be within ±20%        | Test device shall be soldered on the substrate<br>Oscillation Frequency: 10 to 55 to 10Hz for 1min<br>Amplitude: 1.5mm<br>Time: 2hrs for each axis (X, Y & Z), total 6hrs                                              |
| 3   | Resistance to Soldering Heat | Appearance: No damage<br>More than 75% of the terminal. electrode should be covered with solder.            | Pre-heating: 150°C, 1min<br>Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free)<br>Solder Temperature: 260±5°C<br>Immersion Time: 10±1sec                                                                                      |
| 4   | Solder ability               | The electrodes shall be at least 95% covered with new solder coating                                        | Pre-heating: 150°C, 1min<br>Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free)<br>Solder Temperature: 245±5°C<br>Immersion Time: 5+0/-0.5sec                                                                                  |
| 5   | Shear Test                   | Chip coil shall not be damaged after tested as test method                                                  | Substrate: Glass-epoxy substrate<br>Solder: Sn/Ag3.0/Cu0.5<br>Applied Direction:<br>Force : 10N<br>Hold Duration: 5s±1s<br>       |
| 6   | Terminal Strength Test       | No split termination<br> | Test device shall be soldered on the substrate, then apply a force in the direction of the arrow.<br>Force : 5N<br>Keeping Time: 10±1sec                                                                               |
| 7   | Temperature Cycle            | Appearance: No damage<br>Inductance: within ±20% of initial value                                           | Repeat 100 cycles as follow: (-55 ± 2 °C; 30 ± 3 min)<br>→ (Room temp., 5 min)<br>→ (+125 ± 2 °C, 30 ± 3 min)<br>→ (Room temp., 5 min)<br>Measured after exposure in the room condition for 24hrs                      |
| 8   | Biased Humidity              | Appearance: No damage<br>Inductance: within ±20% of initial value                                           | Temperature: 85±3°C<br>Relative Humidity: 85% / Time: 500hrs<br>Measured after exposure in the room condition for 24hrs                                                                                                |

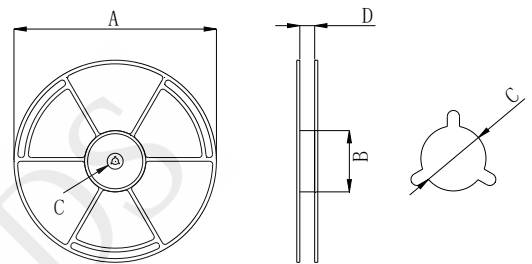
|    |                             |                                                                         |                                                                                                                                           |
|----|-----------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 9  | High Temperature Resistance | Appearance: No damage<br>Inductance: within $\pm 20\%$ of initial value | Temperature: $125 \pm 3^\circ\text{C}$<br>Relative Humidity: 0% / Time: 500hrs<br>Measured after exposure in the room condition for 24hrs |
| 10 | Low Temperature Resistance  | Appearance: No damage<br>Inductance: within $\pm 20\%$ of initial value | Temperature: $-55 \pm 3^\circ\text{C}$<br>Relative Humidity: 0% / Time: 500hrs<br>Measured after exposure in the room condition for 24hrs |

## 八、Packaging Specifications

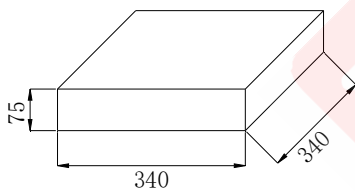
Tape Dimensions



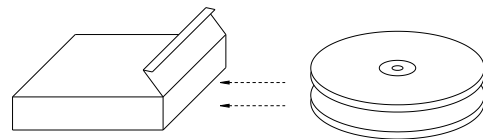
Reel Dimensions



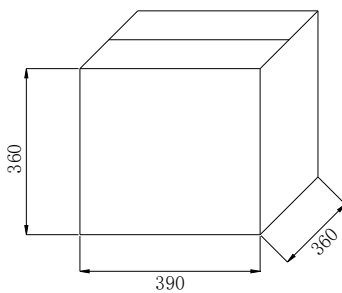
| Tape Dimensions(mm) |     |     |    |    | Reel Dimensions(mm) |     |    |      | Quantity<br>PCS/REEL |
|---------------------|-----|-----|----|----|---------------------|-----|----|------|----------------------|
| A0                  | B0  | K0  | P  | W  | A                   | B   | C  | D    |                      |
| 5.9                 | 6.2 | 3.2 | 12 | 16 | 330                 | 100 | 13 | 16.5 | 2000                 |



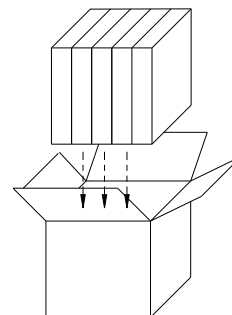
Inner box



2 Reel/Inner box ,Total 4000pcs/Inner box



Outer box



5 Inner box/Outer box ,Total 20000pcs/Outer box