

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) : 功率電感

客戶料號 (Cus P/N) : _____

料號 (Part NO) : FSCDH127-SERIES

日期 (Date) : 2018-11-08

版本 (Version) : A0

| 核准 APPROVED BY | 審核 CHECKED BY | 製作 DRAWN BY |
|-------------------|------------------|----------------|
| TopoCheng | VincentShang | AbbyShi |

Please sign back after confirmation:

Client signature: Qualified Unqualified

| 批准 APPROVAL | 審核 CHECKED | 檢驗 CONFORM |
|----------------|---------------|---------------|
| | | |

地址 (Address) : 深圳市寶安區新安街道裕安二路 131 號

C33 科創園 2 棟 209 室

電話 (TEL) : 0755-83222650

傳真 (FAX) : 0755-83222656

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



SCOPE :

This specification applies to the Pb Free high current type SMD inductors for
FSCDH127-SERIES

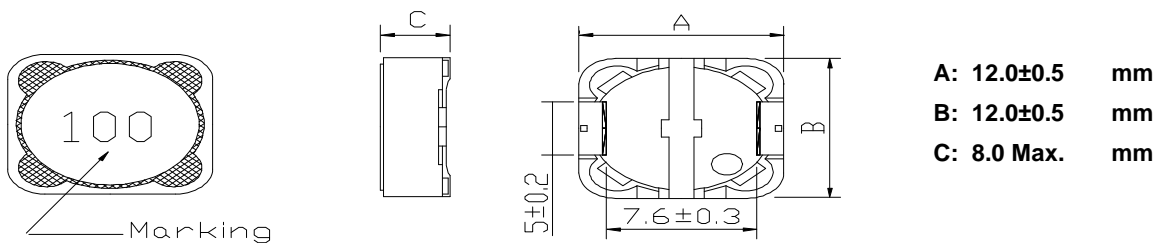
PRODUCT IDENTIFICATION

FSCDH 127 - 100 M

① ② ③ ④

- ① Product Code
- ② Dimensions Code
- ③ Inductance Code
- ④ Tolerance Code

(1) SHAPES AND DIMENSIONS



(2) ELECTRICAL SPECIFICATIONS

SEE TABLE 1

TEST INSTRUMENTS

L : HP 4284A PRECISION LCR METER (or equivalent)

RDC : CHROMA MODEL 16502 MILLIOHMETER (or equivalent)

(3) CHARACTERISTICS

- (3)-1 Ambient temperature +60°C Max.
- (3)-2 Operate temperature range -40°C ~ +125°C
(Including self temp. rise)
- (3)-3 Storage temperature range -40°C ~ +125°C

TABLE 1

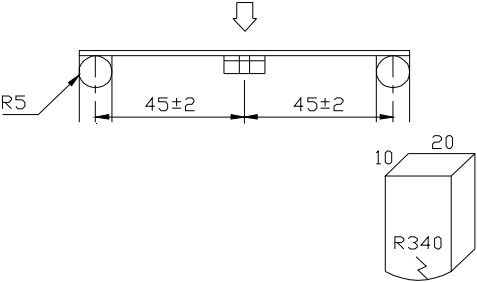
| Founds PT/NO. | Inductance L(μ H) | Percent Tolerance | Test Frequency | Resistance RDC(Ω)Max. | Rated DC Current IDC(A) | Marking |
|------------------|---------------------------|----------------------|-------------------|-----------------------------------|----------------------------|---------|
| FSCDH127-1R0□ | 1.0 | N | 100kHz/0.25V | 7.0m | 9.80 | 1R0 |
| FSCDH127-1R2□ | 1.2 | N | 100kHz/0.25V | 7.0m | 9.80 | 1R2 |
| FSCDH127-2R2□ | 2.2 | M,N | 100kHz/0.25V | 11.5m | 8.00 | 2R2 |
| FSCDH127-2R4□ | 2.4 | M,N | 100kHz/0.25V | 11.5m | 8.00 | 2R4 |
| FSCDH127-2R5□ | 2.5 | M,N | 100kHz/0.25V | 11.5m | 8.00 | 2R5 |
| FSCDH127-3R5□ | 3.5 | M,N | 100kHz/0.25V | 13.5m | 7.50 | 3R5 |
| FSCDH127-4R7□ | 4.7 | M,N | 100kHz/0.25V | 15.8m | 6.80 | 4R7 |
| FSCDH127-6R1□ | 6.1 | M,N | 100kHz/0.25V | 17.6m | 6.60 | 6R1 |
| FSCDH127-6R4□ | 6.4 | M,N | 100kHz/0.25V | 19.0m | 6.30 | 6R4 |
| FSCDH127-6R8□ | 6.8 | M,N | 100kHz/0.25V | 19.0m | 6.30 | 6R8 |
| FSCDH127-7R6□ | 7.6 | M,N | 100kHz/0.25V | 20.0m | 5.90 | 7R6 |
| FSCDH127-100□ | 10 | M,N | 100kHz/0.25V | 21.6m | 5.40 | 100 |
| FSCDH127-120□ | 12 | M,N | 100kHz/0.25V | 24.3m | 4.90 | 120 |
| FSCDH127-150□ | 15 | M,N | 100kHz/0.25V | 27.0m | 4.50 | 150 |
| FSCDH127-180□ | 18 | M,N | 100kHz/0.25V | 39.2m | 3.90 | 180 |
| FSCDH127-220□ | 22 | M,N | 100kHz/0.25V | 43.2m | 3.60 | 220 |
| FSCDH127-270□ | 27 | M,N | 100kHz/0.25V | 45.9m | 3.40 | 270 |
| FSCDH127-330□ | 33 | M,N | 100kHz/0.25V | 64.8m | 3.00 | 330 |
| FSCDH127-390□ | 39 | M,N | 100kHz/0.25V | 72.9m | 2.75 | 390 |
| FSCDH127-470□ | 47 | M,N | 100kHz/0.25V | 0.10 | 2.50 | 470 |
| FSCDH127-560□ | 56 | M,N | 100kHz/0.25V | 0.11 | 2.35 | 560 |
| FSCDH127-680□ | 68 | M,N | 100kHz/0.25V | 0.14 | 2.10 | 680 |
| FSCDH127-750□ | 75 | M,N | 100kHz/0.25V | 0.15 | 2.00 | 750 |
| FSCDH127-820□ | 82 | M,N | 100kHz/0.25V | 0.16 | 1.95 | 820 |
| FSCDH127-101□ | 100 | K,M | 100kHz/0.25V | 0.22 | 1.70 | 101 |
| FSCDH127-121□ | 120 | K,M | 100kHz/0.25V | 0.25 | 1.60 | 121 |
| FSCDH127-151□ | 150 | K,M | 100kHz/0.25V | 0.28 | 1.42 | 151 |
| FSCDH127-181□ | 180 | K,M | 100kHz/0.25V | 0.35 | 1.30 | 181 |
| FSCDH127-221□ | 220 | K,M | 100kHz/0.25V | 0.39 | 1.16 | 221 |
| FSCDH127-271□ | 270 | K,M | 100kHz/0.25V | 0.56 | 1.06 | 271 |
| FSCDH127-331□ | 330 | K,M | 100kHz/0.25V | 0.64 | 0.95 | 331 |
| FSCDH127-391□ | 390 | K,M | 100kHz/0.25V | 0.70 | 0.88 | 391 |
| FSCDH127-471□ | 470 | K,M | 100kHz/0.25V | 0.98 | 0.79 | 471 |
| FSCDH127-561□ | 560 | K,M | 100kHz/0.25V | 1.07 | 0.73 | 561 |
| FSCDH127-681□ | 680 | K,M | 100kHz/0.25V | 1.46 | 0.67 | 681 |
| FSCDH127-821□ | 820 | K,M | 100kHz/0.25V | 1.64 | 0.60 | 821 |
| FSCDH127-102□ | 1000 | K,M | 100kHz/0.25V | 1.82 | 0.55 | 102 |
| FSCDH127-152□ | 1500 | K,M | 10kHz/0.25V | 2.48 | 0.45 | 152 |

※ □ specify the inductance tolerance, K(\pm 10%), M(\pm 20%), N(\pm 30%)

※ IDC : Based on inductance change (Δ L/Lo : \leq drop 10%) and @ambient temperature 25°C

Based on temperature rise (Δ T : 40°C TYP.)

(4) RELIABILITY TEST METHOD MECHANICAL

| TEST ITEM | SPECIFICATION | TEST DETAILS |
|-------------------|--|--|
| Substrate bending | $\Delta L/L_0 \leq \pm 5\%$ There shall be no mechanical damage or electrical damage. | <p>The sample shall be soldered onto the printed circuit board in figure 1 and a load applied until the figure in the arrow direction is made approximately 3mm.(keep time 30 seconds) PCB dimension shall the page 7/9</p> <p style="text-align: center;">F(Pressurization)</p>  <p style="text-align: center;">PRESSURE ROD figure-1</p> |
| Vibration | $\Delta L/L_0 \leq \pm 5\%$ There shall be no mechanical damage. | <p>The sample shall be soldered onto the printed circuit board and when a vibration having an amplitude of 1.52mm and a frequency of from 10 to 55Hz/1 minute repeated should be applied to the 3 directions (X,Y,Z) for 2 hours each. (A total of 6 hours)</p> |
| Solderability | New solder More than 90% | <p>Flux (rosin, isopropyl alcohol{JIS-K-1522}) shall be coated over the whole of the sample before hard, the sample shall then be preheated for about 2 minutes in a temperature of 130~150°C and after it has been immersed to a depth 0.5mm below for 3±0.2 seconds fully in molten solder M705 with a temperature of 245±5°C.</p> <p>More than 90% of the electrode sections shall be covered with new solder smoothly when the sample is taken out of the solder bath.</p> |

MECHANICAL

| TEST ITEM | SPECIFICATION | |
|---|---------------------------------------|---|
| Resistance to Soldering heat (reflow soldering) | There shall be no damage or problems. | <p style="text-align: center;">Temperature profile of reflow soldering</p> <p>The specimen shall be passed through the reflow oven with the condition shown in the above profile for 1 time.</p> <p>The specimen shall be stored at standard atmospheric conditions for 1 hour, after which the measurement shall be made.</p> |

ELECTRICAL

| TEST ITEM | SPECIFICATION | TEST DETAILS |
|------------------------------|--|--|
| Insulation resistance | There shall be no other damage or problems. | DC 100V voltage shall be applied across this sample of top surface and the terminal. The insulation resistance shall be more than $1 \times 10^8 \Omega$. |
| Dielectric withstand voltage | There shall be no other damage or problems. | AC 100V voltage shall be applied for 1 minute across the top surface and the terminal of this sample |
| Temperature characteristics | $\Delta L/L20^\circ\text{C} \leq \pm 10\%$ $0 \sim 2000 \text{ ppm}/^\circ\text{C}$ | The test shall be performed after the sample has stabilized in an ambient temperature of -20 to $+85^\circ\text{C}$, and the value calculated based on the value applicable in a normal temperature and normal humidity shall be $\Delta L/L20^\circ\text{C} \leq \pm 10\%$. |

ENVIROMENT CHARACTERISTICS

| TEST ITEM | SPECIFICATION | | | | | | | | | | | | | | | | |
|--|--|--|--|-------------|----------|---|--|---------|---|----------------------|-----------|---|---|---------|---|----------------------|-----------|
| High temperature storage | $\Delta L/Lo \leq \pm 5\%$ There shall be no mechanical damage. | The sample shall be left for 96 ± 4 hours in an atmosphere with a temperature of $85 \pm 2^\circ\text{C}$ and a normal humidity. Upon completion of the measurement shall be made after the sample has been left in a normal temperature and normal humidity for 1 hour. | | | | | | | | | | | | | | | |
| Low temperature storage | $\Delta L/Lo \leq \pm 5\%$ There shall be no mechanical damage. | The sample shall be left for 96 ± 4 hours in an atmosphere with a temperature of $-25 \pm 3^\circ\text{C}$. Upon completion of the test, the measurement shall be made after the sample has been left in a normal temperature and normal humidity for 1 hour. | | | | | | | | | | | | | | | |
| Change of temperature | $\Delta L/Lo \leq \pm 5\%$ There shall be no other damage of problems | The sample shall be subject to 5 continuous cycles, such as shown in the table 2 below and then it shall be subjected to standard atmospheric conditions for 1 hour, after which measurement shall be made. <div style="text-align: center;"> table 2 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Temperature</th> <th style="text-align: center;">Duration</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">$-25 \pm 3^\circ\text{C}$ (Thermostat No.1)</td> <td style="text-align: center;">30 min.</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">Standard atmospheric</td> <td style="text-align: center;">No.1→No.2</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">$85 \pm 2^\circ\text{C}$ (Thermostat No.2)</td> <td style="text-align: center;">30 min.</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">Standard atmospheric</td> <td style="text-align: center;">No.2→No.1</td> </tr> </tbody> </table> </div> | | Temperature | Duration | 1 | $-25 \pm 3^\circ\text{C}$ (Thermostat No.1) | 30 min. | 2 | Standard atmospheric | No.1→No.2 | 3 | $85 \pm 2^\circ\text{C}$ (Thermostat No.2) | 30 min. | 4 | Standard atmospheric | No.2→No.1 |
| | Temperature | Duration | | | | | | | | | | | | | | | |
| 1 | $-25 \pm 3^\circ\text{C}$ (Thermostat No.1) | 30 min. | | | | | | | | | | | | | | | |
| 2 | Standard atmospheric | No.1→No.2 | | | | | | | | | | | | | | | |
| 3 | $85 \pm 2^\circ\text{C}$ (Thermostat No.2) | 30 min. | | | | | | | | | | | | | | | |
| 4 | Standard atmospheric | No.2→No.1 | | | | | | | | | | | | | | | |
| Moisture storage | $\Delta L/Lo \leq \pm 5\%$ There shall be no mechanical damage. | The sample shall be left for 96 ± 4 hours in a temperature of $40 \pm 2^\circ\text{C}$ and a humidity(RH) of 90~95%. Upon completion of the test, the measurement shall be made after the sample has been left in a normal temperature and normal humidity more than 1 hour. | | | | | | | | | | | | | | | |
| Test conditions : The sample shall be reflow soldered onto the printed circuit board in every test. | | | | | | | | | | | | | | | | | |

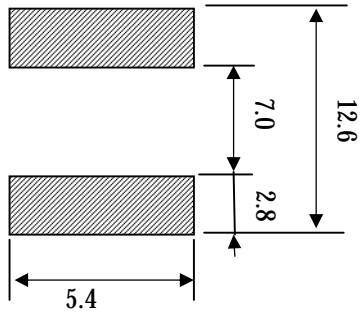
(5) LAND DIMENSION (Ref.)

PCB: GLASS EPOXY $t=1.6\text{mm}$

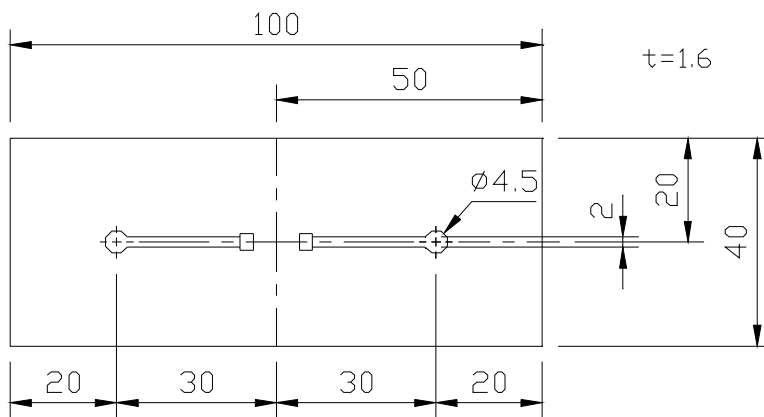
(5)-1 LAND PATTERN DIMENSIONS

(STANDARD PATTERN)

Unit:mm

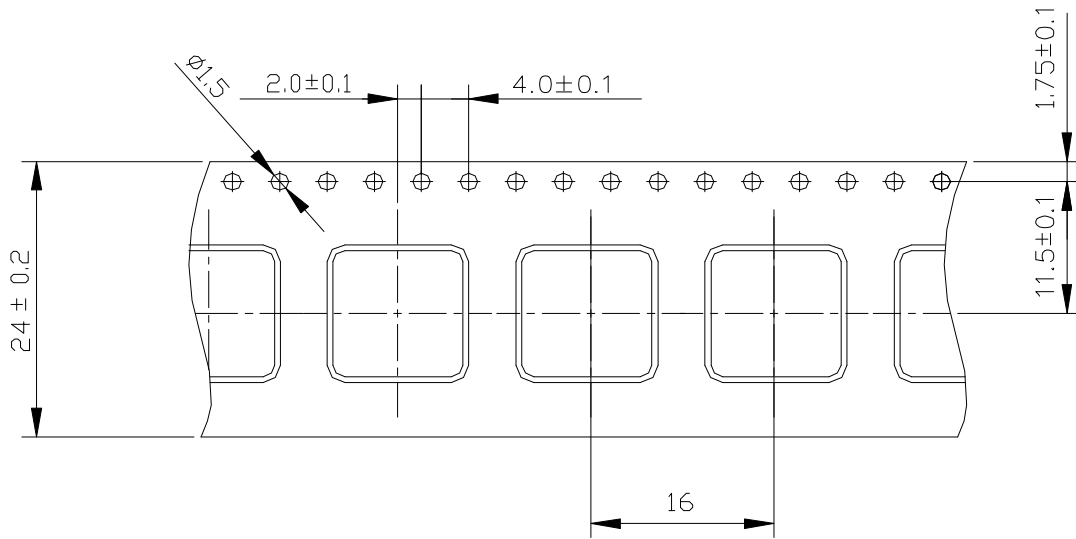


(5)-2 SUBSTRATE BENDING TEST BENDING TEST BOARD

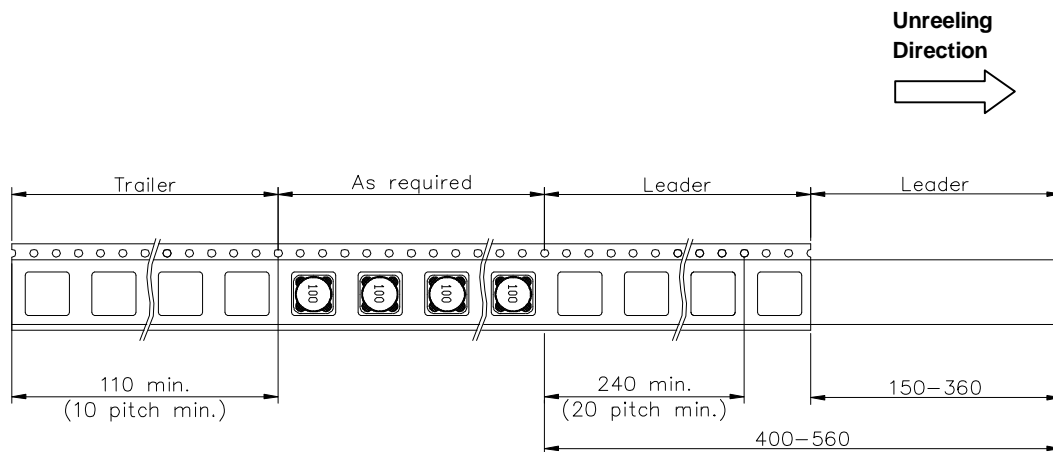


(6) PACKAGING

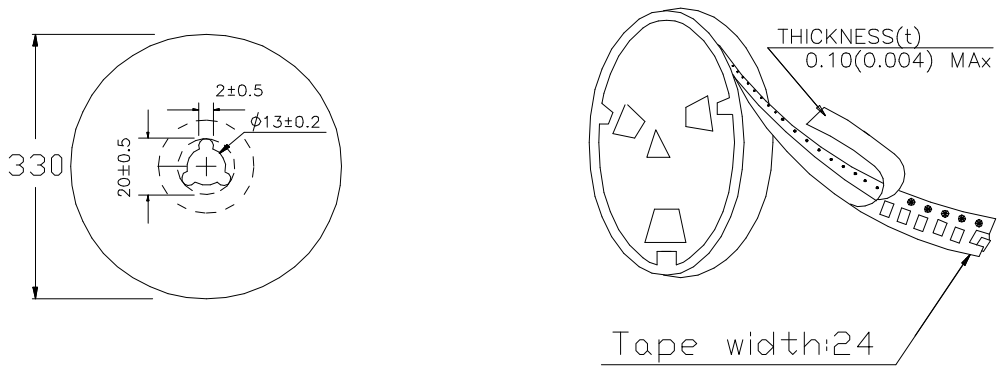
(6)-1 CARRIER TAPE DIMENSIONS (mm)



(6)-2 TAPING DIMENSIONS (mm)



(6)-3 REEL DIMENSIONS (mm)



(6)-4 QUANTITY

500pcs/Reel

The products are packaged so that no damage will be sustained.