



## SERIES: FCBA1-00603 | DESCRIPTION: MINIATURE SMD CHIP INDUCTORS

### FEATURES

- Ceramic construction with high SRF & Q values
- Non-magnetic coil form assures thermal stability & predictability
- Ferrite core construction provides lower DCR & higher current values
- Suitable for high frequency electronic applications

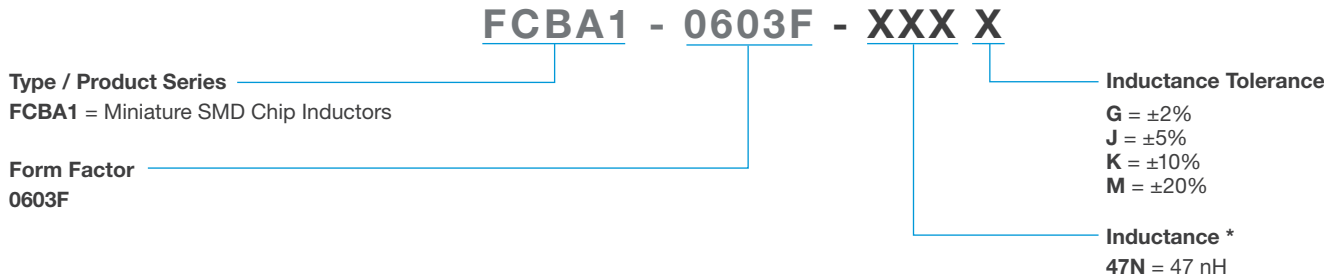


| MODEL            | Inductance<br>L<br>[nH] | Tolerance<br>[± %] | Q<br>min | Test Frequency<br>L & Q<br>[MHz] | SRF<br>min<br>[MHz] | DC Resistance<br>max<br>[Ω] | Rated Current<br>max<br>[mA] |
|------------------|-------------------------|--------------------|----------|----------------------------------|---------------------|-----------------------------|------------------------------|
| FCBA1-0603F-1N6K | 1.6                     | 10                 | 18       | 250                              | 12500               | 0.040                       | 700                          |
| FCBA1-0603F-1N8K | 1.8                     | 10                 | 16       | 250                              | 12500               | 0.045                       | 700                          |
| FCBA1-0603F-2N0K | 2.0                     | 10                 | 12       | 250                              | 10000               | 0.090                       | 700                          |
| FCBA1-0603F-2N2K | 2.2                     | 10                 | 12       | 250                              | 10000               | 0.090                       | 700                          |
| FCBA1-0603F-3N3K | 3.3                     | 10                 | 20       | 250                              | 5900                | 0.075                       | 700                          |
| FCBA1-0603F-3N6J | 3.6                     | 2, 5, 10           | 22       | 250                              | 5900                | 0.075                       | 700                          |
| FCBA1-0603F-3N9J | 3.9                     | 2, 5, 10           | 22       | 250                              | 5900                | 0.080                       | 700                          |
| FCBA1-0603F-4N7J | 4.7                     | 2, 5, 10           | 20       | 250                              | 5800                | 0.116                       | 700                          |
| FCBA1-0603F-5N1J | 5.1                     | 2, 5, 10           | 20       | 250                              | 5700                | 0.120                       | 700                          |
| FCBA1-0603F-6N2J | 6.2                     | 2, 5, 10           | 27       | 250                              | 5700                | 0.110                       | 700                          |
| FCBA1-0603F-6N8J | 6.8                     | 2, 5, 10           | 27       | 250                              | 5700                | 0.110                       | 700                          |
| FCBA1-0603F-7N5J | 7.5                     | 2, 5, 10           | 28       | 250                              | 4800                | 0.110                       | 700                          |
| FCBA1-0603F-8N2J | 8.2                     | 2, 5, 10           | 28       | 250                              | 4700                | 0.120                       | 700                          |
| FCBA1-0603F-9N1J | 9.1                     | 2, 5, 10           | 26       | 250                              | 4500                | 0.150                       | 700                          |
| FCBA1-0603F-9N5J | 9.5                     | 2, 5, 10           | 26       | 250                              | 4500                | 0.150                       | 700                          |
| FCBA1-0603F-10NJ | 10                      | 2, 5, 10           | 31       | 250                              | 4500                | 0.130                       | 700                          |
| FCBA1-0603F-12NJ | 12                      | 2, 5, 10           | 35       | 250                              | 4000                | 0.130                       | 700                          |
| FCBA1-0603F-15NJ | 15                      | 2, 5, 10           | 30       | 250                              | 4000                | 0.150                       | 700                          |
| FCBA1-0603F-18NJ | 18                      | 2, 5, 10           | 34       | 250                              | 3300                | 0.160                       | 700                          |
| FCBA1-0603F-22NJ | 22                      | 2, 5, 10           | 38       | 250                              | 3000                | 0.190                       | 700                          |
| FCBA1-0603F-27NJ | 27                      | 2, 5, 10           | 36       | 250                              | 2800                | 0.220                       | 600                          |
| FCBA1-0603F-30NJ | 30                      | 2, 5, 10           | 37       | 250                              | 2250                | 0.220                       | 600                          |
| FCBA1-0603F-33NJ | 33                      | 2, 5, 10           | 36       | 250                              | 2300                | 0.220                       | 600                          |
| FCBA1-0603F-36NJ | 36                      | 2, 5, 10           | 36       | 250                              | 2080                | 0.250                       | 600                          |
| FCBA1-0603F-39NJ | 39                      | 2, 5, 10           | 40       | 250                              | 2200                | 0.250                       | 600                          |
| FCBA1-0603F-47NJ | 47                      | 2, 5, 10           | 36       | 200                              | 2000                | 0.280                       | 600                          |
| FCBA1-0603F-56NJ | 56                      | 2, 5, 10           | 36       | 200                              | 1900                | 0.280                       | 600                          |
| FCBA1-0603F-68NJ | 68                      | 2, 5, 10           | 36       | 200                              | 1700                | 0.340                       | 600                          |
| FCBA1-0603F-82NJ | 82                      | 2, 5, 10           | 34       | 150                              | 1700                | 0.550                       | 400                          |
| FCBA1-0603F-91NJ | 91                      | 2, 5, 10           | 30       | 150                              | 1400                | 0.630                       | 400                          |
| FCBA1-0603F-R10J | 100                     | 5, 10              | 30       | 150                              | 1400                | 0.630                       | 400                          |

|                  |     |          |    |     |      |      |     |
|------------------|-----|----------|----|-----|------|------|-----|
| FCBA1-0603F-R12J | 120 | 2, 5, 10 | 32 | 150 | 1300 | 0.73 | 300 |
| FCBA1-0603F-R15J | 150 | 2, 5, 10 | 28 | 150 | 990  | 0.80 | 280 |
| FCBA1-0603F-R16J | 160 | 2, 5, 10 | 25 | 100 | 990  | 1.25 | 250 |
| FCBA1-0603F-R18J | 180 | 2, 5, 10 | 25 | 100 | 990  | 1.45 | 240 |
| FCBA1-0603F-R20J | 200 | 2, 5, 10 | 25 | 100 | 900  | 1.55 | 200 |
| FCBA1-0603F-R22J | 220 | 2, 5, 10 | 25 | 100 | 900  | 2.10 | 200 |
| FCBA1-0603F-R27J | 270 | 2, 5, 10 | 24 | 100 | 900  | 2.30 | 170 |
| FCBA1-0603F-R30J | 300 | 2, 5, 10 | 24 | 100 | 1000 | 3.00 | 100 |
| FCBA1-0603F-R33J | 330 | 2, 5, 10 | 25 | 100 | 900  | 3.89 | 100 |
| FCBA1-0603F-R39J | 390 | 2, 5, 10 | 25 | 100 | 800  | 4.35 | 100 |
| FCBA1-0603F-R47J | 470 | 2, 5, 10 | 25 | 100 | 700  | 7.00 | 75  |

- Notes:
- 1. Electrical specifications measured at 25°C
  - 2. Rated Current - The current when the coil temperature increases up to max.  $\Delta T = 15^{\circ}\text{C}$  ( $T_A = 20^{\circ}\text{C}$ )
  - 3. Operating Temperature: -40°C to 125°C

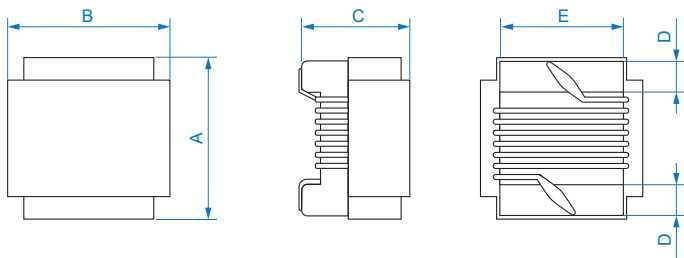
PART NUMBER KEY



\* Note: Inductance expressed by three figures. The unit is micro henry (nH). The first and second figures are significant digits, the third figure expresses the number of zeros which follow the two figures. If there is a decimal point, it is expressed by the capital letter "N" (3N9 = 3.9 nH). In that case, all figures are significant digits.

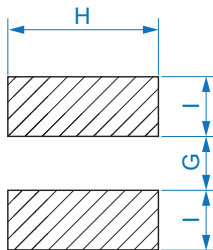
## MECHANICAL DRAWING

Units: mm



## PAD LAYOUT

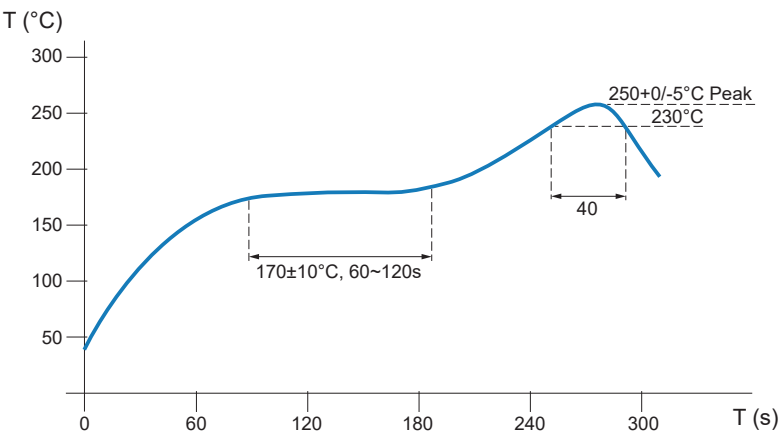
Units: mm



### MECHANICAL DIMENSIONS (mm)

| Product Series | A<br>max | B<br>max | C<br>max | D    | E    | G    | H    | I    |
|----------------|----------|----------|----------|------|------|------|------|------|
| FCBA1-0603     | 1.80     | 1.12     | 1.02     | 0.38 | 0.76 | 0.64 | 1.02 | 0.64 |

## RECOMMENDED REFLOW SOLDERING CONDITIONS

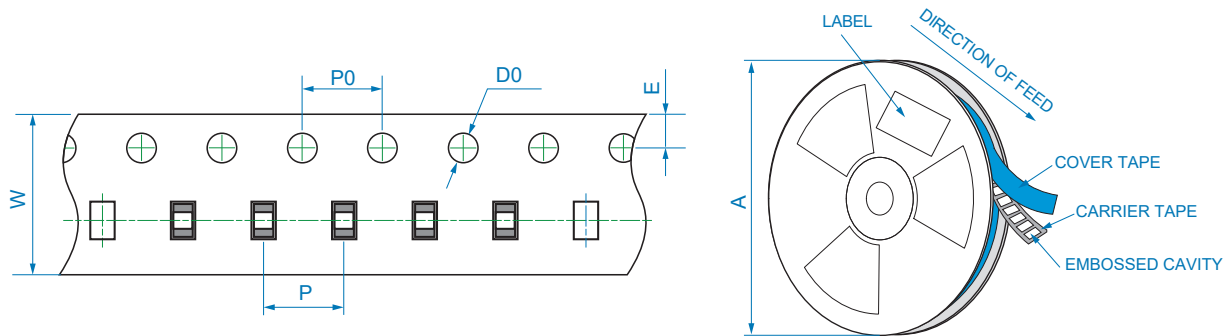


The recommended reflow conditions are set according to the soldering equipment used. Since various manufactures may have different reflow soldering equipment, products, process conditions, set methods, etc., when setting the reflow contions, please adjust and confirm according to users' environment/equipment.

- Notes:
- a) Solder reflow temperature: +250°C max. for maximum 10 seconds
  - b) It is not recommended to solder inductors by soldering iron
  - c) Please contact us for details

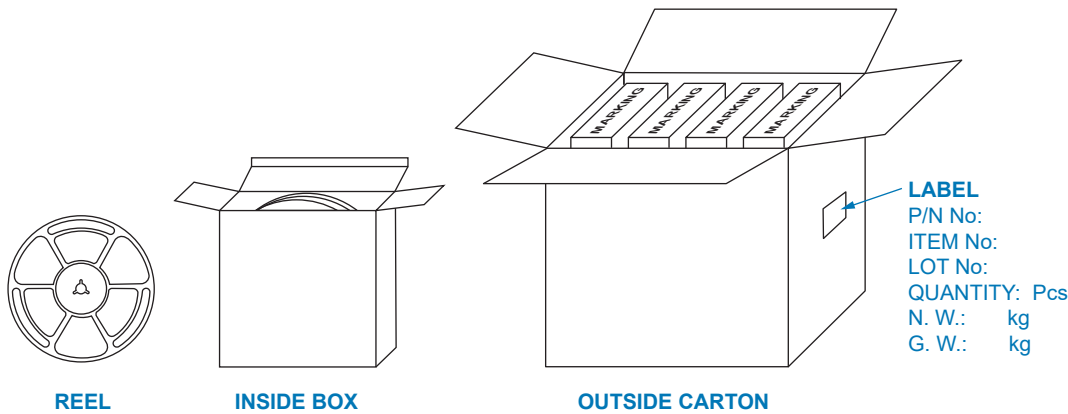
QUANTITY PER REEL & PACKING INFORMATION

Units: mm



TAPE DIMENSIONS (mm)

| Product Series | W   | P   | P0  | D0  | E    | A   |
|----------------|-----|-----|-----|-----|------|-----|
| FCBA1-0603     | 8.0 | 2.0 | 4.0 | 1.5 | 1.75 | 178 |



QUANTITY PER PACKAGE

| Product Series | Pcs per Reel | Pcs per Inside Box | Pcs per Outside Carton |
|----------------|--------------|--------------------|------------------------|
| FCBA1-0603     | 4000         | 20000              | 240000                 |

Storage Conditions

- a) Temperature conditions: <35°C.
- b) Humidity conditions between 35% - 65%.
- c) Moisture Sensitivity Level (MSL): Level 1.
- d) Storage of material to be in a sulfur and chlorine free environment.

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