

# FrelTec GmbH

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## **Multilayer Ferrite Chip Inductor SMD**

# FrelTec Multilayer Ferrite Chip Inductor

## SMD

### SPECIFICATION

### Part Number

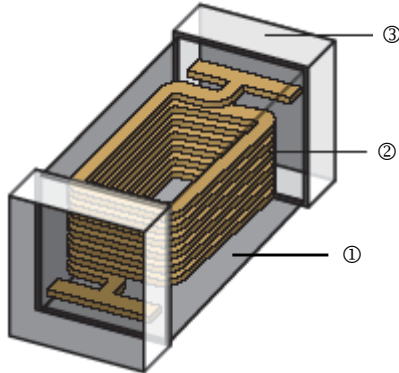
| 09H  | 05*      | 151*   | Q*             | T04   | N*                                | 1**            |
|--|----------|--|----------------|---|-----------------------------------|----------------|
| Type                                       | Size     | Impedance  | Tolerance      | Packing   | Current                           | Optional       |
| 09H : SMD Multilayer Ferrite Chip Inductor | 03: 0603 | The value is given in nH and "N" indicates the decimal point. When higher than 100nH then the last digit is the multiplier | K : $\pm 10\%$ | T04: tape and reel, for 4kpcs, paper tape (7"reel), 0603 and 0805 size ( $\leq 2,2\mu\text{H}$ and High Current)        | S : Standard                      | 1 for optional |
|  | 05: 0805 | which denotes the number of zero following   | M: $\pm 20\%$  | E03: tape and reel, for 3kpcs, embossed plastic tape (7"reel), 0805 ( $\geq 2,8\mu\text{H}$ ), 0806, 1008 and 1206 size | H : High Current                  |                |
|  | 07: 0806 | Example:   |                |   |                                   |                |
|  | A8: 1008 | 3N3 : 3,3 nH   |                |   |                                   |                |
|  | 06: 1206 | 22N : 22 nH  |                |   |                                   |                |
|  |          | U15 : 150 nH   |                |   |                                   |                |
|  |          |  |                |   | * not all combination is possible |                |

All products according to RoHS (2015/863/EU)

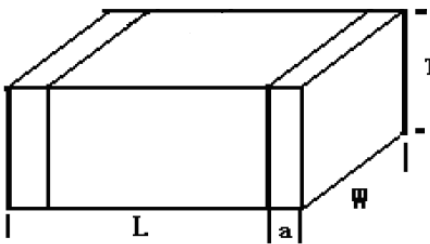
# FrelTec Multilayer Ferrite Chip Inductor

## SMD

### Dimensions:



|   |                              |
|---|------------------------------|
| ① | Ferrite                      |
| ② | Internal Electrode           |
| ③ | Electrode Plating (Ag/Ni/Sn) |



| Size | L         | W         | T         | a         |
|------|-----------|-----------|-----------|-----------|
| 0603 | 1,60±0,20 | 0,80±0,20 | 0,80±0,20 | 0,30±0,20 |
| 0805 | 2,00±0,20 | 1,25±0,20 | 0,90±0,20 | 0,50±0,30 |
| 0805 | 2,00±0,20 | 1,25±0,20 | 1,25±0,20 | 0,50±0,30 |
| 1206 | 3,20±0,20 | 1,60±0,20 | 1,10±0,20 | 0,50±0,30 |
| 0805 | 2,00±0,20 | 1,25±0,20 | 0,90±0,10 | 0,50±0,20 |
| 0806 | 2,00±0,15 | 1,60±0,15 | 0,90±0,10 | 0,50±0,20 |
| 1008 | 2,50±0,20 | 2,00±0,20 | 0,90±0,10 | 0,60±0,20 |

in mm

# FrelTec Multilayer Ferrite Chip Inductor

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### For Standard Electrical Specifications

| Part No.       | Inductance (nH) | Tolerance          | L/Q Test Condition | Q min. | SRF (MHz) min. | DCR ( $\Omega$ ) max. | IDC (mA) max. |
|----------------|-----------------|--------------------|--------------------|--------|----------------|-----------------------|---------------|
| 09H0347NMT04S  | 47              | $\pm 20\%$         | 50MHz, 200mV       | 10     | 260            | 0,30                  | 50            |
| 09H0356NMT04S  | 56              | $\pm 20\%$         | 50MHz, 200mV       | 10     | 255            | 0,30                  | 50            |
| 09H0368NMT04S  | 68              | $\pm 20\%$         | 50MHz, 200mV       | 10     | 250            | 0,30                  | 50            |
| 09H0382NMT04S  | 82              | $\pm 20\%$         | 50MHz, 200mV       | 10     | 245            | 0,30                  | 50            |
| 09H03U10_T04S  | 100             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 240            | 0,50                  | 50            |
| 09H03U12_T04S  | 120             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 205            | 0,50                  | 50            |
| 09H03U15_T04S  | 150             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 180            | 0,60                  | 50            |
| 09H03U18_T04S  | 180             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 165            | 0,60                  | 50            |
| 09H03U22_T04S  | 220             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 150            | 0,80                  | 50            |
| 09H03U27_T04S  | 270             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 136            | 0,80                  | 50            |
| 09H03U33_T04S  | 330             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 125            | 0,85                  | 35            |
| 09H03U39_T04S  | 390             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 110            | 1,00                  | 35            |
| 09H03U47_T04S  | 470             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 105            | 1,35                  | 35            |
| 09H03U56_T04S  | 560             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 95             | 1,55                  | 35            |
| 09H03U68_T04S  | 680             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 85             | 1,70                  | 35            |
| 09H03U82_T04S  | 820             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 15     | 75             | 2,10                  | 35            |
| 09H031U0_T04S  | 1000            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 65             | 0,60                  | 25            |
| 09H031U2_T04S  | 1200            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 60             | 0,80                  | 25            |
| 09H031U5_T04S  | 1500            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 55             | 0,80                  | 25            |
| 09H031U5KT04S1 | 1500            | $\pm 10\%$         | 10MHz, 200mV       | 35     | 65             | 0,80                  | 25            |
| 09H031U8_T04S  | 1800            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 50             | 0,95                  | 25            |
| 09H032U2_T04S  | 2200            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 45             | 1,55                  | 15            |
| 09H032U7_T04S  | 2700            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 40             | 1,35                  | 15            |
| 09H033U3_T04S  | 3300            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 38             | 1,55                  | 15            |
| 09H033U9_T04S  | 3900            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 35             | 1,70                  | 15            |
| 09H034U7_T04S  | 4700            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 35     | 33             | 2,10                  | 15            |
| 09H035U6_T04S  | 5600            | $\pm 10, \pm 20\%$ | 4MHz, 200mV        | 35     | 22             | 1,55                  | 5             |
| 09H036U8_T04S  | 6800            | $\pm 10, \pm 20\%$ | 4MHz, 200mV        | 35     | 20             | 1,70                  | 5             |
| 09H038U2_T04S  | 8200            | $\pm 10, \pm 20\%$ | 4MHz, 60 mV        | 30     | 18             | 2,10                  | 5             |
| 09H0310U_T04S  | 10000           | $\pm 10, \pm 20\%$ | 2MHz, 60mV         | 30     | 17             | 1,85                  | 3             |
| 09H0310U_T04S3 | 10000           | $\pm 10, \pm 20\%$ | 2MHz, 100mV        | 30     | 17             | 1,30                  | 100           |
| 09H0322U_T04S  | 22000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 15     | 11             | 2,10                  | 1             |
| 09H0547NMT04S  | 47              | $\pm 20\%$         | 50MHz, 200mV       | 20     | 320            | 0,20                  | 300           |
| 09H0556NMT04S  | 56              | $\pm 20\%$         | 50MHz, 200mV       | 20     | 320            | 0,20                  | 300           |
| 09H0568NMT04S  | 68              | $\pm 20\%$         | 50MHz, 200mV       | 20     | 280            | 0,20                  | 300           |
| 09H0582NMT04S  | 82              | $\pm 20\%$         | 50MHz, 200mV       | 20     | 255            | 0,20                  | 300           |
| 09H05U10_T04S  | 100             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 235            | 0,30                  | 250           |
| 09H05U12_T04S  | 120             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 220            | 0,30                  | 250           |
| 09H05U15_T04S  | 150             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 200            | 0,40                  | 250           |
| 09H05U18_T04S  | 180             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 185            | 0,40                  | 250           |
| 09H05U22_T04S  | 220             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 170            | 0,50                  | 250           |

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| Part No.       | Inductance (nH) | Tolerance          | L/Q Test Condition | Q min. | SRF (MHz) min. | DCR ( $\Omega$ ) max. | IDC (mA) max. |
|----------------|-----------------|--------------------|--------------------|--------|----------------|-----------------------|---------------|
| 09H05U27_T04S  | 270             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 150            | 0,50                  | 250           |
| 09H05U33_T04S  | 330             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 145            | 0,55                  | 250           |
| 09H05U39_T04S  | 390             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 135            | 0,65                  | 200           |
| 09H05U47_T04S  | 470             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 125            | 0,65                  | 200           |
| 09H05U56_T04S  | 560             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 115            | 0,75                  | 150           |
| 09H05U68_T04S  | 680             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 105            | 0,80                  | 150           |
| 09H05U82_T04S  | 820             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 100            | 1,00                  | 150           |
| 09H051U0_T04S  | 1000            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 75             | 0,40                  | 50            |
| 09H051U2_T04S  | 1200            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 65             | 0,50                  | 50            |
| 09H051U5_T04S  | 1500            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 60             | 0,50                  | 50            |
| 09H051U8_T04S  | 1800            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 55             | 0,60                  | 50            |
| 09H052U2_T04S  | 2200            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 50             | 0,65                  | 30            |
| 09H052U7_E03S  | 2700            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 45             | 0,75                  | 30            |
| 09H053U3_E03S  | 3300            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 41             | 0,80                  | 30            |
| 09H053U9_E03S  | 3900            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 38             | 0,90                  | 30            |
| 09H054U7_E03S  | 4700            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 35             | 1,00                  | 30            |
| 09H055U6_E03S  | 5600            | $\pm 10, \pm 20\%$ | 4MHz, 200mV        | 50     | 32             | 0,90                  | 15            |
| 09H056U8_E03S  | 6800            | $\pm 10, \pm 20\%$ | 4MHz, 200mV        | 50     | 29             | 1,00                  | 15            |
| 09H058U2_E03S  | 8200            | $\pm 10, \pm 20\%$ | 4MHz, 200mV        | 50     | 26             | 1,10                  | 15            |
| 09H0510U_E03S  | 10000           | $\pm 10, \pm 20\%$ | 2MHz, 60mV         | 50     | 24             | 1,15                  | 15            |
| 09H0510UME03S4 | 10000           | $\pm 20\%$         | 2MHz, 100mV        | 50     | 24             | 0,50                  | 300           |
| 09H0512U_E03S  | 12000           | $\pm 10, \pm 20\%$ | 2MHz, 60mV         | 50     | 22             | 1,25                  | 15            |
| 09H0515U_E03S  | 15000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 30     | 19             | 0,80                  | 5             |
| 09H0518U_E03S  | 18000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 30     | 18             | 0,90                  | 5             |
| 09H0522U_E03S  | 22000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 30     | 16             | 1,10                  | 5             |
| 09H0647NME03S  | 47              | $\pm 20\%$         | 50MHz, 200mV       | 20     | 320            | 0,15                  | 300           |
| 09H0656NME03S  | 56              | $\pm 20\%$         | 50MHz, 200mV       | 20     | 280            | 0,25                  | 300           |
| 09H0668NME03S  | 68              | $\pm 20\%$         | 50MHz, 200mV       | 20     | 280            | 0,25                  | 300           |
| 09H0682NME03S  | 82              | $\pm 20\%$         | 50MHz, 200mV       | 20     | 250            | 0,25                  | 300           |
| 09H06U10_E03S  | 100             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 20     | 235            | 0,25                  | 250           |
| 09H06U12_E03S  | 120             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 20     | 220            | 0,30                  | 250           |
| 09H06U15_E03S  | 150             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 20     | 200            | 0,30                  | 250           |
| 09H06U18_E03S  | 180             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 20     | 185            | 0,40                  | 250           |
| 09H06U22_E03S  | 220             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 20     | 170            | 0,40                  | 250           |
| 09H06U27_E03S  | 270             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 20     | 150            | 0,50                  | 250           |
| 09H06U33_E03S  | 330             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 20     | 145            | 0,60                  | 250           |
| 09H06U39_E03S  | 390             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 135            | 0,50                  | 200           |
| 09H06U47_E03S  | 470             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 125            | 0,60                  | 200           |

# FrelTec Multilayer Ferrite Chip Inductor

## SMD

| Part No.      | Inductance (nH) | Tolerance          | L/Q Test Condition | Q min. | SRF (MHz) min. | DCR ( $\Omega$ ) max. | IDC (mA) max. |
|---------------|-----------------|--------------------|--------------------|--------|----------------|-----------------------|---------------|
| 09H06U56_E03S | 560             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 115            | 0,70                  | 150           |
| 09H06U68_E03S | 680             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 105            | 0,80                  | 150           |
| 09H06U82_E03S | 820             | $\pm 10, \pm 20\%$ | 25MHz, 200mV       | 25     | 100            | 0,90                  | 150           |
| 09H061U0_E03S | 1000            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 75             | 0,40                  | 100           |
| 09H061U2_E03S | 1200            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 65             | 0,50                  | 100           |
| 09H061U5_E03S | 1500            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 60             | 0,50                  | 80            |
| 09H061U8_E03S | 1800            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 55             | 0,50                  | 70            |
| 09H062U2_E03S | 2200            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 50             | 0,60                  | 60            |
| 09H062U7_E03S | 2700            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 45             | 0,60                  | 60            |
| 09H063U3_E03S | 3300            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 41             | 0,70                  | 60            |
| 09H063U9_E03S | 3900            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 38             | 0,80                  | 50            |
| 09H064U7_E03S | 4700            | $\pm 10, \pm 20\%$ | 10MHz, 200mV       | 45     | 35             | 0,90                  | 50            |
| 09H065U6_E03S | 5600            | $\pm 10, \pm 20\%$ | 4MHz, 200mV        | 45     | 32             | 0,70                  | 25            |
| 09H066U8_E03S | 6800            | $\pm 10, \pm 20\%$ | 4MHz, 200mV        | 45     | 29             | 0,80                  | 25            |
| 09H068U2_E03S | 8200            | $\pm 10, \pm 20\%$ | 4MHz, 200mV        | 45     | 26             | 0,90                  | 25            |
| 09H0610U_E03S | 10000           | $\pm 10, \pm 20\%$ | 2MHz, 60mV         | 45     | 24             | 1,00                  | 25            |
| 09H0612U_E03S | 12000           | $\pm 10, \pm 20\%$ | 2MHz, 60mV         | 45     | 22             | 1,05                  | 15            |
| 09H0615U_E03S | 15000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 35     | 19             | 0,70                  | 5             |
| 09H0618U_E03S | 18000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 35     | 18             | 0,75                  | 5             |
| 09H0622U_E03S | 22000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 35     | 16             | 0,90                  | 5             |
| 09H0627U_E03S | 27000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 35     | 14             | 0,90                  | 5             |
| 09H0633U_E03S | 33000           | $\pm 10, \pm 20\%$ | 1MHz, 60mV         | 35     | 13             | 1,05                  | 5             |
| 09H0647UME03S | 47000           | $\pm 20\%$         | 2MHz, 100mV        | 40     | 10             | 3,40                  | 10            |

# FrelTec Multilayer Ferrite Chip Inductor

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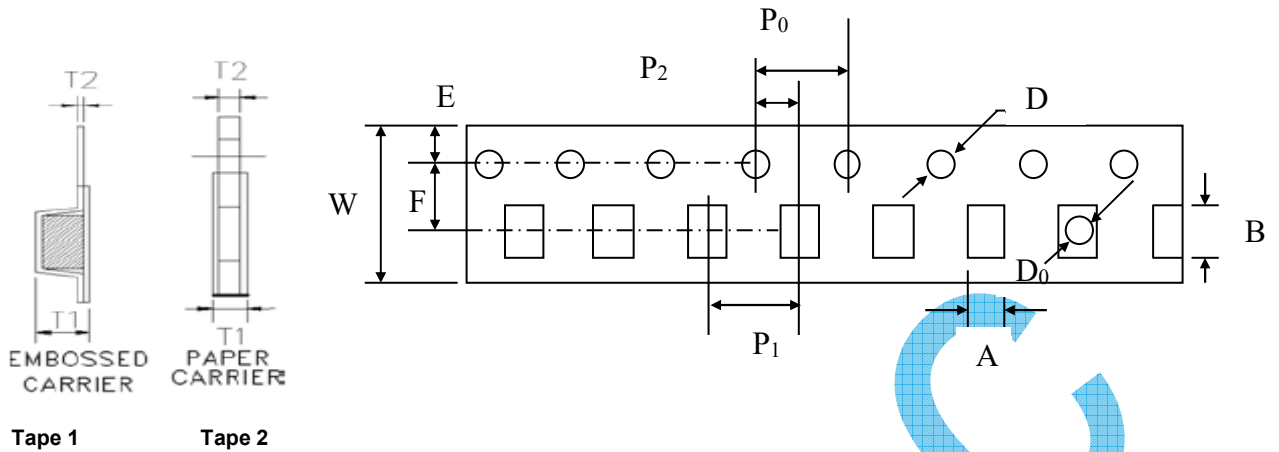
### High Current Electrical Specifications

| Part No.      | Inductance (uH) | Tolerance | Test Condition | SRF (MHz) min. | DCR (Ω) max. | IDC (mA) max. |
|---------------|-----------------|-----------|----------------|----------------|--------------|---------------|
| 09H05U47ME03H | 0,47            | ±20%      | 1MHz, 250mV    | 100            | 0,125        | 1100          |
| 09H05U68ME03H | 0,68            | ±20%      | 1MHz, 250mV    | 100            | 0,150        | 1000          |
| 09H05U82ME03H | 0,82            | ±20%      | 1MHz, 250mV    | 90             | 0,175        | 900           |
| 09H051U0ME03H | 1,0             | ±20%      | 1MHz, 250mV    | 90             | 0,200        | 800           |
| 09H051U2ME03H | 1,2             | ±20%      | 1MHz, 250mV    | 80             | 0,200        | 800           |
| 09H051U5ME03H | 1,5             | ±20%      | 1MHz, 250mV    | 70             | 0,275        | 700           |
| 09H051U8ME03H | 1,8             | ±20%      | 1MHz, 250mV    | 60             | 0,275        | 700           |
| 09H052U2ME03H | 2,2             | ±20%      | 1MHz, 250mV    | 50             | 0,313        | 600           |
| 09H053U3ME03H | 3,3             | ±20%      | 1MHz, 250mV    | 40             | 0,275        | 500           |
| 09H054U7ME03H | 4,7             | ±20%      | 1MHz, 250mV    | 30             | 0,375        | 500           |
| 09H07U47ME03H | 0,47            | ±20%      | 1MHz, 250mV    | 100            | 0,182        | 1500          |
| 09H07U68ME03H | 0,68            | ±20%      | 1MHz, 250mV    | 90             | 0,195        | 1500          |
| 09H07U82ME03H | 0,82            | ±20%      | 1MHz, 250mV    | 80             | 0,208        | 1500          |
| 09H071U0ME03H | 1,0             | ±20%      | 1MHz, 250mV    | 60             | 0,208        | 1400          |
| 09H071U2ME03H | 1,2             | ±20%      | 1MHz, 250mV    | 60             | 0,208        | 1400          |
| 09H071U5ME03H | 1,5             | ±20%      | 1MHz, 250mV    | 50             | 0,260        | 1200          |
| 09H071U8ME03H | 1,8             | ±20%      | 1MHz, 250mV    | 50             | 0,260        | 1200          |
| 09H072U2ME03H | 2,2             | ±20%      | 1MHz, 250mV    | 40             | 0,286        | 1200          |
| 09H073U3ME03H | 3,3             | ±20%      | 1MHz, 250mV    | 30             | 0,312        | 1100          |
| 09H074U7ME03H | 4,7             | ±20%      | 1MHz, 250mV    | 20             | 0,390        | 1100          |
| 09HA8U47ME03H | 0,47            | ±20%      | 1MHz, 250mV    | 100            | 0,088        | 1800          |
| 09HA8U68ME03H | 0,68            | ±20%      | 1MHz, 250mV    | 90             | 0,113        | 1700          |
| 09HA8U82ME03H | 0,82            | ±20%      | 1MHz, 250mV    | 80             | 0,125        | 1700          |
| 09HA81U0ME03H | 1,0             | ±20%      | 1MHz, 250mV    | 60             | 0,138        | 1600          |
| 09HA81U2ME03H | 1,2             | ±20%      | 1MHz, 250mV    | 60             | 0,138        | 1600          |
| 09HA81U5ME03H | 1,5             | ±20%      | 1MHz, 250mV    | 50             | 0,163        | 1500          |
| 09HA81U8ME03H | 1,8             | ±20%      | 1MHz, 250mV    | 50             | 0,163        | 1500          |
| 09HA82U2ME03H | 2,2             | ±20%      | 1MHz, 250mV    | 40             | 0,213        | 1300          |
| 09HA83U3ME03H | 3,3             | ±20%      | 1MHz, 250mV    | 30             | 0,200        | 1200          |
| 09HA84U7ME03H | 4,7             | ±20%      | 1MHz, 250mV    | 25             | 0,250        | 1100          |

Operating temperature range: -40~+125°C

# FrelTec Multilayer Ferrite Chip Inductor

## SMD Tape Dimensions



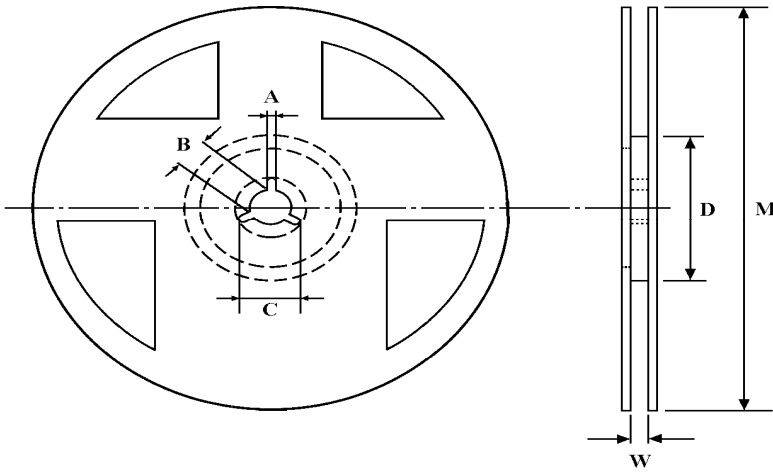
| Type              | A        | B        | W       | F        | E        | P1      | P2       | P0      | T1        | T2        |
|-------------------|----------|----------|---------|----------|----------|---------|----------|---------|-----------|-----------|
| 0603              | 1,05±0,1 | 1,85±0,1 | 8,0±0,2 | 3,5±0,05 | 1,75±0,1 | 4,0±0,1 | 2,0±0,05 | 4,0±0,1 | 0,95±0,05 | -         |
| 0805 (≤2,2uH)     | 1,50±0,1 | 2,42±0,1 | 8,0±0,2 | 3,5±0,05 | 1,75±0,1 | 4,0±0,1 | 2,0±0,05 | 4,0±0,1 | 0,95±0,05 | -         |
| 0805 (≥2,7uH)     | 1,50±0,1 | 2,35±0,1 | 8,0±0,2 | 3,5±0,05 | 1,75±0,1 | 4,0±0,1 | 2,0±0,05 | 4,0±0,1 | 1,45±0,05 | 0,22±0,05 |
| 1206              | 1,88±0,1 | 3,50±0,1 | 8,0±0,2 | 3,5±0,05 | 1,75±0,1 | 4,0±0,1 | 2,0±0,05 | 4,0±0,1 | 1,27±0,05 | 0,22±0,05 |
| 0805 High Current | 1,45±0,1 | 2,25±0,1 | 8,0±0,2 | 3,5±0,05 | 1,75±0,1 | 4,0±0,1 | 2,0±0,05 | 4,0±0,1 | 0,95±0,05 | -         |
| 0806              | 1,88±0,1 | 2,40±0,1 | 8,0±0,2 | 3,5±0,05 | 1,75±0,1 | 4,0±0,1 | 2,0±0,05 | 4,0±0,1 | 1,23±0,05 | 0,23±0,05 |
| 1008              | 2,20±0,1 | 2,85±0,1 | 8,0±0,2 | 3,5±0,05 | 1,75±0,1 | 4,0±0,1 | 2,0±0,05 | 4,0±0,1 | 1,40±0,05 | 0,23±0,05 |

in mm



**SMD**  
**Reel Dimensions**

**FrelTec**  
**Multilayer Ferrite Chip Inductor**



| M     | B        | D        | W         | T         |
|-------|----------|----------|-----------|-----------|
| 178±1 | 13,0±0,2 | 60,0±0,5 | 9,00±0,05 | 12,0±0,15 |

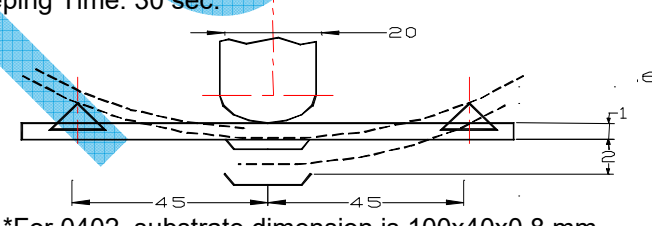
**Stock period**

The performance of these products, including the solderability, is guaranteed for 12 month, provided that they remain packed as they were when delivered and stored at a temperature of 25°C ± 3°C and a relative humidity less than 70%RH

# FrelTec Multilayer Ferrite Chip Inductor

## SMD

### Environmental Characteristics

| Item                         | Specification   | Test Methods   |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
|------------------------------|---|--|------|------------------|-------------|---|-------|----|---|------|---|---|------|----|---|------|---|
| Inductance                   | Refer to standard electrical characteristic spec.   | HP4291B  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| Q                            |   | HP4291B  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| SRF                          |   | HP4291B  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| DC Resistance RDC            |   | Agilent 34401A   |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| IDC                          |   | The DC current value having temperature increased 40°C after thru DC current 2 hours at ambient temperature  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| Resistance to Soldering Heat | Appearance: No damage<br>More than 75% of the terminal.<br>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 (Pb-Free)<br>Immersion Time: 10±1 sec.  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| Solderability                | The electrodes shall be at least 90% 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 (Pb-Free)<br>Immersion Time: 4±1 sec.   |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| Flexure Strength             | The forces applied on the right conditions must not damage the terminal electrode and the ferrite.  | <p>Test device shall be soldered on the substrate<br/>Substrate Dimension: 100x40x1,6 mm<br/>Deflection: 2,0 mm<br/>Keeping Time: 30 sec.</p>  <p>*For 0402, substrate dimension is 100x40x0,8 mm</p>   |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| Vibration                    |   | Test device shall be soldered on the substrate<br>Oscillation Frequency: 10 to 55 to 10Hz for 1 min.<br>Amplitude: 1.5 mm<br>Time: 2 hrs for each axis (X, Y & Z), total 6 hrs   |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| Damp Heat with Load          |   | Temperature: 40±2°C<br>Relative Humidity: 90 ~ 95%<br>Time: 1000 hrs<br>Measured after exposure in the room condition for 24 hrs   |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| Temperature Cycle            | Appearance: No damage<br>L change: within±20% of initial value                                      | <p>One cycle:</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25±2</td> <td>3</td> </tr> <tr> <td>3</td> <td>85±3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25±2</td> <td>3</td> </tr> </tbody> </table> <p>Total: 100 cycles<br/>Measured after exposure in the room condition for 24 hrs</p> | Step | Temperature (°C) | Time (min.) | 1 | -40±3 | 30 | 2 | 25±2 | 3 | 3 | 85±3 | 30 | 4 | 25±2 | 3 |
| Step                         | Temperature (°C)  | Time (min.)  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| 1                            | -40±3   | 30   |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| 2                            | 25±2  | 3  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| 3                            | 85±3  | 30   |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| 4                            | 25±2  | 3  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |
| High Temperature Resistance  |   | Temperature: 85±3°C<br>Relative Humidity: 20%<br>Applied Current: Rated Current<br>Time: 1000 hrs<br>Measured after exposure in the room condition for 24 hrs  |      |                  |             |   |       |    |   |      |   |   |      |    |   |      |   |

# FrelTec Multilayer Ferrite Chip Inductor

## SMD

|                            |  |  |
|----------------------------|--|--|
| Low Temperature Resistance |  | Temperature: $-40\pm 3^{\circ}\text{C}$<br>Relative Humidity: 0%<br>Time: 1000 hrs<br>Measured after exposure in the room condition for 24 hrs |
|----------------------------|--|--|

FrelTec

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