

# Chip Beads (2504024717H0)



Part Number: 2504024717H0

MULTI- LAYER CHIP BEAD

**Part Number System: Example 2512063017Y1**

| 25                    | 1206                     | 301                           | 7  | Y   | 1  |
|-----------------------|--------------------------|-------------------------------|--|---|--|
| <b>Chip Bead Code</b> | <b>Package Size Code</b> | <b>Impedance Code</b><br>300Ω | <b>Packaging Code</b><br>6= Bulk Packed<br>7= Taped and Reeled 7" Reel<br>8= Taped and Reeled 13" Reel | <b>Material Code</b><br>Y = Standard Signal Speed<br>Z = High Signal Speed<br>H = GHz Speed | <b>Current Code</b><br>0 < 1.0A<br>1 ≥ 1.0A < 2.0A<br>3 ≥ 3.0A < 4.0A<br>ETC |

Fair- Rite offers a broad selection of cost effective multi- layer chip beads to suppress conducted EMI signals. Chip beads can be used in an array of devices such as cellular phones, computers, laptops, pagers, etc. The small package sizes accommodate automated placements and allow for a dense packaging of circuit boards.

Chip Beads are available in standard, high and GHz signal speeds.

[Recommended Soldering Profile](#)

Packaging Options:

- All multi- layer chip beads are supplied taped and reeled, if required bulk packed chip beads can be provided.

The suggested land patterns are in accordance to the latest revision of IPC-7351.

| EIA Size<br>(Metric Size)    | component dimensions * |                    |                    |                    | Wt (g) | Land Patterns ** |               |               |               | Tape Width<br>(mm) | Pitch<br>(mm) | Parts/<br>7" Reel | Parts/<br>13" Reel |
|------------------------------|------------------------|--------------------|--------------------|--------------------|--------|------------------|---------------|---------------|---------------|--------------------|---------------|-------------------|--------------------|
|                              | A                      | B                  | C                  | D                  |        | V                | W(ref)        | X             | Y             |                    |               |                   |                    |
| <b>0402</b><br><b>(1005)</b> | 0.5±0.05<br>0.020      | 0.5±0.05<br>0.020  | 1.0±0.05<br>0.040  | 0.25±0.15<br>0.010 | 0.002  | 0.40<br>0.016    | 1.30<br>0.051 | 0.70<br>0.028 | 0.90<br>0.035 | 8                  | 4             | 10000             | -                  |
| <b>0603</b><br><b>(1608)</b> | 0.8±0.15<br>0.031      | 0.8±0.15<br>0.031  | 1.6±0.15<br>0.063  | 0.4±0.2<br>0.016   | 0.006  | 0.60<br>0.024    | 1.70<br>0.067 | 1.00<br>0.039 | 1.10<br>0.043 | 8                  | 4             | 4000              | 10000              |
| <b>0805</b><br><b>(2012)</b> | 0.9±0.2<br>0.035       | 1.25±0.2<br>0.049  | 2.0±0.2<br>0.079   | 0.5±0.3<br>0.020   | 0.01   | 0.60<br>0.024    | 1.90<br>0.075 | 1.50<br>0.059 | 1.30<br>0.051 | 8                  | 4             | 4000              | 10000              |
| <b>1206</b><br><b>(3216)</b> | 1.1±0.2<br>0.043       | 1.6±0.2<br>0.063   | 3.2±0.2<br>0.126   | 0.7±0.3<br>0.028   | 0.03   | 1.20<br>0.047    | 2.80<br>0.110 | 1.80<br>0.071 | 1.60<br>0.063 | 8                  | 4             | 3000              | 10000              |
| <b>1806</b><br><b>(4516)</b> | 1.6±0.2<br>0.063       | 1.6±0.2<br>0.063   | 4.5±0.2<br>0.177   | 0.7±0.3<br>0.028   | 0.06   | 2.00<br>0.079    | 3.90<br>0.154 | 1.80<br>0.071 | 1.90<br>0.075 | 12                 | 8             | 2000              | 10000              |
| <b>1812</b><br><b>(4532)</b> | 1.5±0.2<br>0.059       | 3.2±0.2<br>0.126   | 4.5±0.2<br>0.177   | 0.7±0.3<br>0.028   | 0.09   | 2.00<br>0.079    | 3.90<br>0.154 | 3.40<br>0.134 | 1.90<br>0.075 | 12                 | 8             | 1000              | 5000               |
| <b>1813</b><br><b>(4532)</b> | 2.3±0.25<br>0.091      | 3.2±0.25<br>0.126  | 4.5±0.25<br>0.177  | 0.7±0.3<br>0.028   | 0.14   | 2.00<br>0.079    | 3.90<br>0.154 | 3.40<br>0.134 | 1.90<br>0.075 | 12                 | 8             | -                 | 2500               |
| <b>2218</b><br><b>(5650)</b> | 1.8±0.25<br>0.071      | 5.08±0.25<br>0.200 | 5.59±0.51<br>0.220 | 0.76±0.35<br>0.030 | 0.21   | 3.00<br>0.118    | 6.10<br>0.240 | 5.60<br>0.220 | 3.10<br>0.122 | 12                 | 8             | -                 | 2000               |
| <b>2219</b><br><b>(5650)</b> | 1.97±0.25<br>0.071     | 5.08±0.25<br>0.200 | 5.59±0.51<br>0.220 | 0.76±0.35<br>0.030 | 0.23   | 3.00<br>0.118    | 6.10<br>0.240 | 5.60<br>0.220 | 3.10<br>0.122 | 12                 | 8             | -                 | 2000               |
| <b>2220</b><br><b>(5650)</b> | 3.2±0.25<br>0.126      | 5.08±0.25<br>0.200 | 5.59±0.51<br>0.220 | 0.76±0.35<br>0.030 | 0.38   | 3.00<br>0.118    | 6.10<br>0.240 | 5.60<br>0.220 | 3.10<br>0.122 | 12                 | 8             | -                 | 2000               |
| <b>3312</b><br><b>(8530)</b> | 2.28±0.2<br>0.090      | 3.05±0.2<br>0.120  | 8.5±0.2<br>0.335   | 1.09±0.4<br>0.043  | 0.25   | 6.00<br>0.236    | 9.50<br>0.374 | 3.40<br>0.134 | 3.60<br>0.142 | 16                 | 8             | -                 | 2500               |

\* Fair-Rite sizes "1813", "2218" and "2219" are non standard thicknesses (A dimension).  
\*\* For Land Patterns: Fair-Rite's B dimension corresponds to the Land Pattern X dimension  
\*\* For Land Patterns: Fair-Rite's C dimension corresponds to the Land Pattern W dimension  
Alternate Packaging / Reel Sizes, when available, are special order.

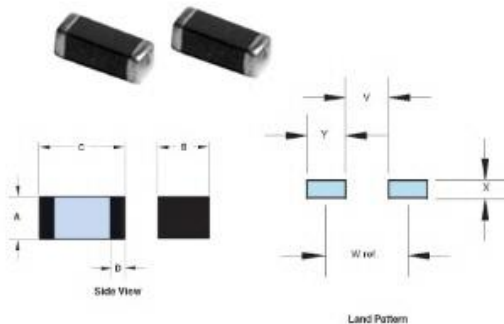
Weight: 0.002 (g)

Package Size: 0402 (1005)

| Dim | mm   | mm tol | nominal inch | inch misc. |
|-----|------|--------|--------------|------------|
| A   | 0.5  | ±0.05  | 0.02         | -          |
| B   | 0.5  | ±0.05  | 0.02         | -          |
| C   | 1    | ±0.05  | 0.04         | -          |
| D   | 0.25 | ±0.15  | 0.01         | -          |

| Reel Information |             |                  |                   |                   |
|------------------|-------------|------------------|-------------------|-------------------|
| Tape Width<br>mm | Pitch<br>mm | Parts 7"<br>Reel | Parts 13"<br>Reel | Parts 14"<br>Reel |
| 8                | 4           | 10000            | -                 | -                 |

| Land Patterns    |                  |                  |                  |   |
|------------------|------------------|------------------|------------------|---|
| V                | W                | X                | Y                | Z |
| 0.40<br>(0.016") | 1.30<br>(0.051") | 0.70<br>(0.028") | 0.90<br>(0.035") | - |



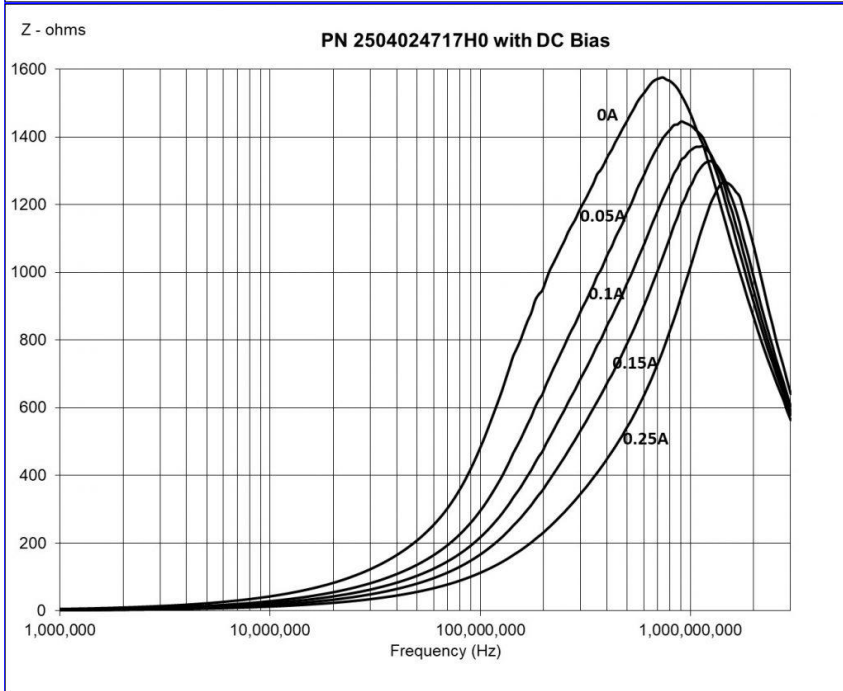
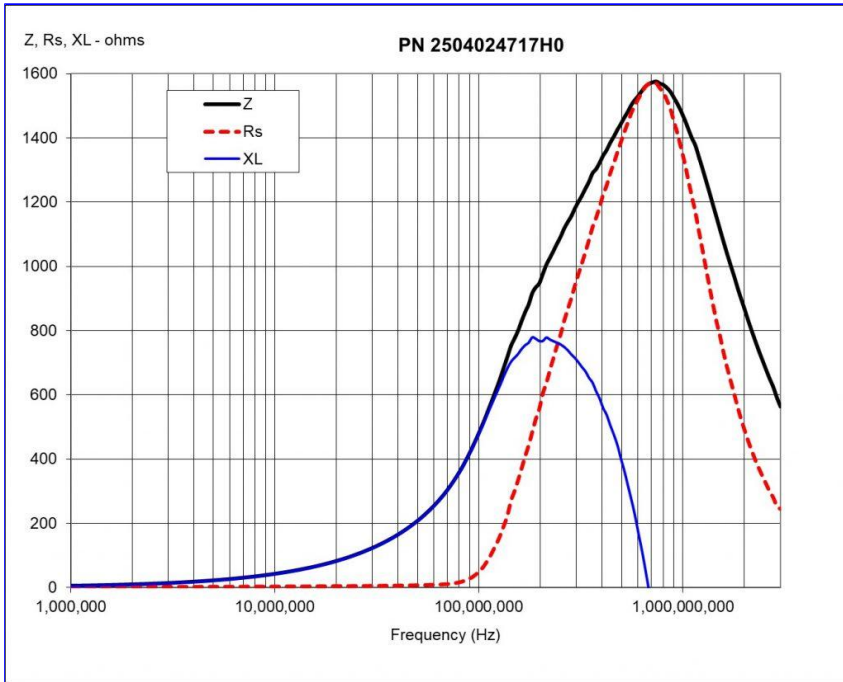
| Pkg. Size                    | A                 | B                 | C                 | D                  | Wt. (g) | Land Patterns |               |               |               | Reel Information |          |              |
|------------------------------|-------------------|-------------------|-------------------|--------------------|---------|---------------|---------------|---------------|---------------|------------------|----------|--------------|
|                              |                   |                   |                   |                    |         | V             | W (ref)       | X             | Y             | Tape Width mm    | Pitch mm | Part 7" Reel |
| <b>0402</b><br><b>(1005)</b> | 0.5±0.05<br>0.020 | 0.5±0.05<br>0.020 | 1.0±0.05<br>0.040 | 0.25±0.15<br>0.010 | 0.002   | 0.40<br>0.016 | 1.30<br>0.051 | 0.70<br>0.028 | 0.90<br>0.035 | 8                | 4        | 10000        |
| <b>0603</b><br><b>(1608)</b> | 0.8±0.15<br>0.031 | 0.8±0.15<br>0.031 | 1.6±0.15<br>0.063 | 0.4±0.2<br>0.016   | 0.006   | 0.60<br>0.024 | 1.70<br>0.067 | 1.00<br>0.039 | 1.10<br>0.043 | 8                | 4        | 4000         |
| <b>0805</b><br><b>(2012)</b> | 0.9±0.2<br>0.035  | 1.25±0.2<br>0.049 | 2.0±0.2<br>0.079  | 0.5±0.3<br>0.020   | 0.01    | 0.60<br>0.024 | 1.90<br>0.075 | 1.50<br>0.059 | 1.30<br>0.051 | 8                | 4        | 4000         |
| <b>1206</b><br><b>(3216)</b> | 1.1±0.2<br>0.043  | 1.6±0.2<br>0.063  | 3.2±0.2<br>0.126  | 0.7±0.3<br>0.028   | 0.03    | 1.20<br>0.047 | 2.80<br>0.110 | 1.80<br>0.071 | 1.60<br>0.063 | 8                | 4        | 3000         |
| <b>1806</b><br><b>(4516)</b> | 1.6±0.2<br>0.063  | 1.6±0.2<br>0.063  | 4.5±0.2<br>0.177  | 0.7±0.3<br>0.028   | 0.06    | 2.00<br>0.079 | 3.90<br>0.154 | 1.80<br>0.071 | 1.90<br>0.075 | 12               | 8        | 2000         |
| <b>1812</b><br><b>(4532)</b> | 1.5±0.2<br>0.059  | 3.2±0.2<br>0.126  | 4.5±0.2<br>0.177  | 0.7±0.3<br>0.028   | 0.09    | 2.00<br>0.079 | 3.90<br>0.154 | 3.40<br>0.134 | 1.90<br>0.075 | 12               | 8        | 1000         |

Chart Legend  
+ Test frequency

| Typical Impedance ( $\Omega$ ) |      |
|--------------------------------|------|
| 50 MHz                         | 210  |
| 100 MHz <sup>+</sup>           | 470  |
| 500 MHz                        | 1390 |
| 1000 MHz <sup>+</sup>          | -    |

| Electrical Properties |     |
|-----------------------|-----|
| Max DCR ( $\Omega$ )  | 1.2 |
| Max Current (mA)      | 250 |

The impedance values listed are typical values. The nominal impedance with a +/- 25% tolerance is specified for the + marked 100 MHz. Chip beads are measured for impedance on the HP 4291A and fixture HP 16192A. Chip beads are 100% tested for impedance and dc resistance.



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