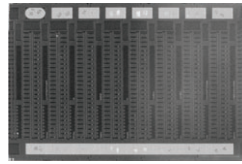
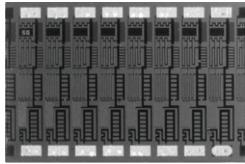




# Wire Bondable Thin Film Resistor Arrays



Product may not be to scale

The CLA and CLB resistor arrays are the hybrid equivalent to the eight resistor common connection and isolated networks available in sips or dips. The resistors are spaced on 0.010" centers resulting in minimal space requirements.

These chips are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The CLA and CLBs are 100 % electrically tested and visually inspected to MIL-STD-883.

### FEATURES

- Wire bondable
- Up to 12 equal value resistors
- For case see Part Dimensions table
- Resistance range: 20 Ω to 1 MΩ
- Excellent TCR tracking
- Resistor material: tantalum nitride, self-passivating
- Oxidized silicon substrate for good power dissipation
- Custom values and pad geometries available
- Moisture resistant
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



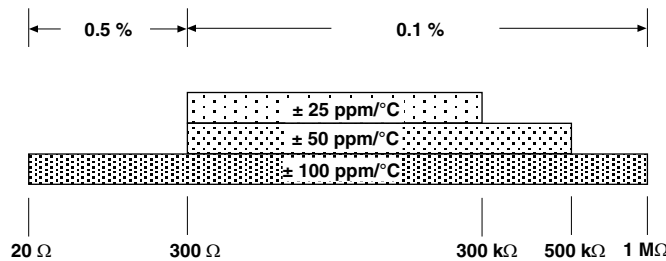
RoHS COMPLIANT HALOGEN FREE GREEN (5-2008)

### APPLICATIONS

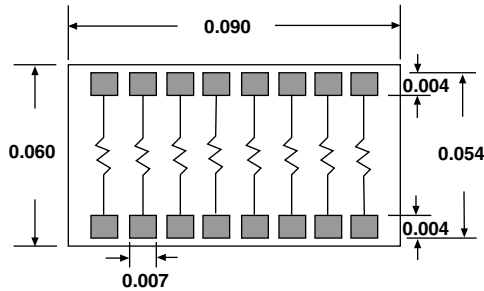
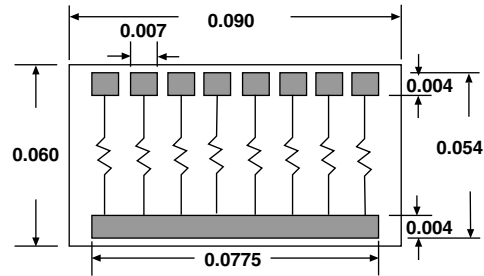
The CLA and CLB thin film resistor arrays are designed for hybrid packages requiring up to twelve resistors of the same resistance value and tolerance, as well as excellent TCR tracking. For such hybrids, they afford great savings in cost and space.

| TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES |                   |        |
|---|-------------------|--------|
| PARAMETER   | VALUE             | UNIT   |
| Total Resistance Range  | 20 to 1M          | Ω      |
| Standard Tolerances   | ± 0.1, ± 0.5      | %      |
| TCR   | ± 25, ± 50, ± 100 | ppm/°C |

Tightest Standard Tolerance Available



| STANDARD ELECTRICAL SPECIFICATIONS                                       |                                      |        |
|--|--------------------------------------|--------|
| PARAMETER  | VALUE                                | UNIT   |
| TCR Tracking Spread  | ± 5                                  | ppm/°C |
| Noise, MIL-STD-202, Method 308<br>100 Ω to 250 kΩ<br>< 100 Ω or > 251 kΩ | -35 typ.<br>-20 typ.                 | dB     |
| Moisture Resistance, MIL-STD-202, Method 106                             | ± 0.5 max. ΔR/R                      | %      |
| Stability, 1000 h, +125 °C, 25 mW<br>Absolute Ratio                      | ± 0.25 max. ΔR/R<br>± 0.05 max. ΔR/R | %      |
| Operating Temperature Range  | -55 to +125                          | °C     |
| Thermal Shock, MIL-STD-202<br>Method 107, Test Condition F               | ± 0.1 max. ΔR/R                      | %      |
| High Temperature Exposure, ± 150 °C, 100 h                               | ± 0.2 max. ΔR/R                      | %      |
| Dielectric Voltage Breakdown   | 200                                  | V      |
| Insulation Resistance  | 10 <sup>12</sup> min.                | Ω      |
| Operating Voltage  | 100                                  | V      |
| DC Power Rating at +70 °C (Derated to Zero at 175 °C)                    | 0.050 per resistor                   | W      |
| 5 x Rated Power Short-Time Overload, +25 °C, 5 s                         | ± 0.1 % max. ΔR/R                    | %      |

**DIMENSIONS** in inches

**CLA 8 Cell**

**CLB 8 Cell**

| <b>DIMENSIONS</b> in inches |                       |                       |                       |                       |                       |
|-----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| # OF RES.                   | 03                    | 04                    | 06                    | 08                    | 12                    |
| CLA                         | 0.060 x 0.060 ± 0.003 | 0.050 x 0.060 ± 0.003 | 0.069 x 0.060 ± 0.003 | 0.090 x 0.060 ± 0.003 | 0.130 x 0.060 ± 0.003 |
| CLB                         | 0.060 x 0.060 ± 0.003 | 0.050 x 0.060 ± 0.003 | 0.069 x 0.060 ± 0.003 | 0.090 x 0.060 ± 0.003 | 0.130 x 0.060 ± 0.003 |

| <b>MECHANICAL SPECIFICATIONS</b> |  |
|----------------------------------|--|
| PARAMETER                        |  |
| Chip Size                        | See Dimensions table above                       |
| Chip Thickness                   | 0.010" ± 0.002" (0.254 mm ± 0.05 mm)             |
| Chip Substrate Material          | Oxidized silicon, 10 kÅ minimum SiO <sub>2</sub> |
| Resistor Material                | Tantalum nitride, self-passivating               |
| Bonding Pads                     | 0.004" x 0.007" (0.10 mm x 0.178 mm)             |
| Number of Top Pads               | CLA - 16<br>CLB - 9                              |
| Pad Material                     | 10 kÅ minimum aluminum                           |
| Backing                          | None, lapped semiconductor silicon               |

| <b>GLOBAL PART NUMBER INFORMATION</b>  |  |  |  |   |  |   |  |                                |                                  |  |  |  |
|--|--|--|--|---|--|---|--|--------------------------------|----------------------------------|--|--|--|
| Global Part Number: <b>CLA083000FFKANHWS</b>   |  |  |  |   |  |   |  |                                |                                  |  |  |  |
| Global Part Number Description: <b>CLA 8 Res 3K 1%, 100 ppm/°C, Al terminations, no back metal, class H WS</b>   |  |  |  |   |  |   |  |                                |                                  |  |  |  |
| <div style="display: flex; justify-content: space-around; font-weight: bold; font-size: 1.2em;"> <span>C</span><span>L</span><span>A</span><span>0</span><span>8</span><span>3</span><span>0</span><span>0</span><span>0</span><span>0</span><span>F</span><span>F</span><span>K</span><span>A</span><span>N</span><span>H</span><span>W</span><span>S</span> </div> |  |  |  |   |  |   |  |                                |                                  |  |  |  |
| MODEL  | TYPE                                     | RESISTORS  | RES.   | RES. MULTIPLIER CODE  | TOL. CODE  | RATIO TOL.  | TCR (ppm/°C)   | TERM.                          | BACK METAL                       | VISUAL CLASS                             | PACKAGING CODE                             |  |
| <b>CL</b>  | <b>A</b> = isolated<br><b>B</b> = bussed | <b>03</b><br><b>04</b><br><b>05</b><br><b>06</b><br><b>07</b><br><b>08</b><br><b>09</b><br><b>10</b><br><b>11</b><br><b>12</b> | First 4 digits are significant figures of resistance | <b>B</b> = 0.01<br><b>A</b> = 0.1<br><b>0</b> = 1<br><b>1</b> = 10<br><b>2</b> = 100<br><b>3</b> = 1000 | <b>B</b> = 0.1 %<br><b>C</b> = 0.25 %<br><b>D</b> = 0.5 %<br><b>F</b> = 1.0 %<br><b>G</b> = 2.0 %<br><b>J</b> = 5.0 %<br><b>K</b> = 10.0 % | <b>B</b> = 0.1 %<br><b>F</b> = 1.0 %<br><b>N</b> = none | <b>E</b> = ± 25<br><b>C</b> = ± 50<br><b>K</b> = ± 100<br><b>M</b> = ± 250 | <b>G</b> = Au<br><b>A</b> = Al | <b>G</b> = Au<br><b>N</b> = none | <b>H</b> = class H<br><b>K</b> = class K | <b>WS</b> = waffle pack, 100 min., 1 mult. |  |



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.