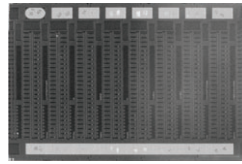
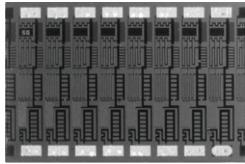




# Wire Bondable Thin Film Resistor Arrays



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)



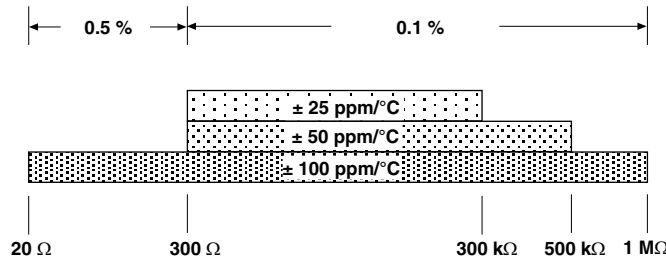
RoHS COMPLIANT HALOGEN FREE GREEN (5-2008)

### 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 |

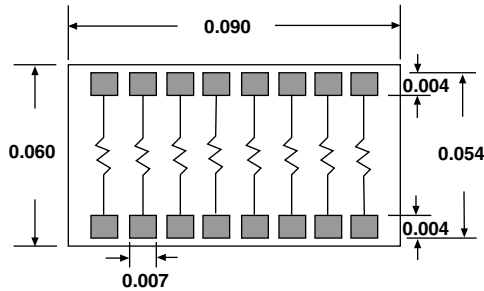
Tightest Standard Tolerance Available



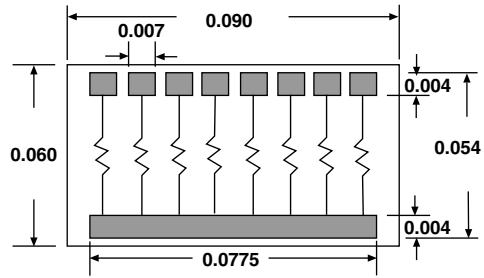
| STANDARD ELECTRICAL SPECIFICATIONS                                       |                                      |        |
|--|--------------------------------------|--------|
| PARAMETER  | VALUE                                | UNIT   |
| TCR Tracking Spread  | ± 5                                  | 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. |  |



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