

# MATERIAL DECLARATION SHEET

**BOURNS®**

|                 |                                                              |     |     |                                                                                     |
|-----------------|--------------------------------------------------------------|-----|-----|-------------------------------------------------------------------------------------|
| Material Number | CHV0603 Series                                               |     |     |  |
| Product Line    | Safety Certified Thick-Film Type High-Voltage Chip Resistors |     |     |                                                                                     |
| Compliance Date | 09/01/2016                                                   |     |     |                                                                                     |
| RoHS Compliant  | Yes                                                          | MSL | N/A |                                                                                     |

| No. | Construction Element(subpart) | Homogeneous Material | Material weight [mg] | Homogeneous Material\ Substances | CASRN<br>if applicable | Materials Mass % | Material Mass % of total unit wt. | Subpart mass of total wt. (%) |
|-----|-------------------------------|----------------------|----------------------|----------------------------------|------------------------|------------------|-----------------------------------|-------------------------------|
| 1   | Ceramic                       | Substrate            | 1.811                | Aluminum oxide                   | 1344-28-1              | 96               | 77.313                            | 80.535                        |
|     |                               |                      |                      | Silicon dioxide                  | 14808-60-7             | 2                | 1.611                             |                               |
|     |                               |                      |                      | Magnesium oxide                  | 1309-48-4              | 2                | 1.611                             |                               |
| 2   | Top conductor                 | Silver               | 0.0464               | Silver                           | 7440-22-4              | 100              | 2.063                             | 2.063                         |
| 3   | Bottom conductor              | Silver               | 0.0201               | Silver                           | 7440-22-4              | 100              | 0.894                             | 0.894                         |
| 4   | Resistor                      | Ruthenium Oxide      | 0.0264               | Glass                            | 65997-18-4             | 55.7             | 0.653                             | 1.174                         |
|     |                               |                      |                      | Lead                             | 7439-92-1              | 19.3             | 0.227                             |                               |
|     |                               |                      |                      | Ruthenium(IV) oxide              | 12036-10-1             | 25               | 0.294                             |                               |
| 5   | First encapsulating           | Glass                | 0.0252               | Glass                            | 65997-18-4             | 92               | 1.031                             | 1.121                         |
|     |                               |                      |                      | Chromium(III) oxide              | 1308-38-9              | 8                | 0.09                              |                               |
| 6   | Overcoat                      | Resin                | 0.0517               | Resin                            | 25036-25-3             | 100              | 2.299                             | 2.299                         |
| 7   | Side conductor                | Silver               | 0.1309               | Silver                           | 7440-22-4              | 85               | 4.948                             | 5.821                         |
|     |                               |                      |                      | Resin                            | 9003-36-5              | 15               | 0.873                             |                               |
| 8   | Plating (Middle)              | Nickel               | 0.0525               | Nickel                           | 7440-02-0              | 100              | 2.335                             | 2.335                         |
| 9   | Plating (Outer)               | Tin                  | 0.0782               | Tin                              | 7440-31-5              | 100              | 3.478                             | 3.478                         |
| 10  | Marking                       | Resin                | 0.0063               | Resin                            | 29690-82-2             | 70               | 0.196                             | 0.28                          |
|     |                               |                      |                      | Pigment                          | 1317-80-2              | 30               | 0.084                             |                               |
|     |                               | Total weight         | 2.2487               |                                  |                        |                  |                                   |                               |

**This Document was updated on: 09/01/2016**

## Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.
2. RoHS exemption: 7(c)-1 Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in

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capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.