

## Thick Film Capacitor Networks, Single-In-Line, Conformal Coated SIP



### FEATURES

- Isolated and bussed schematics available
- X7R and C0G capacitors available
- Multiple isolated capacitors
- Multiple capacitors, common ground
- Custom design capability
- "D" 0.300" (7.62 mm) package height (maximum)
- Compliant to RoHS directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



**RoHS\***  
COMPLIANT  
HALOGEN  
**FREE**

### STANDARD ELECTRICAL SPECIFICATIONS

| VISHAY DALE MODEL | PROFILE | SCHEMATIC | CAPACITANCE RANGE  |                  | CAPACITANCE TOLERANCE (- 55 °C to + 125 °C) ± % | CAPACITANCE VOLTAGE at 85 °C V <sub>DC</sub> |
|-------------------|---------|-----------|--------------------|------------------|---|--|
|                   |         |           | C0G <sup>(1)</sup> | X7R              |   |  |
| CS201             | D       | 1         | 33 pF to 3900 pF   | 470 pF to 0.1 μF | 10, 20  | 50   |
| CS201             | D       | 3         | 33 pF to 3900 pF   | 470 pF to 0.1 μF | 10, 20  | 50   |
| CS201             | D       | 4         | 33 pF to 3900 pF   | 470 pF to 0.1 μF | 10, 20  | 50   |

**Note**

<sup>(1)</sup> C0G capacitors may be substituted for X7R capacitors

### TECHNICAL SPECIFICATIONS

| PARAMETER                                    | UNIT        | CS201       |        |
|--|-------------|-------------|--------|
|  |             | C0G         | X7R    |
| Temperature Coefficient (- 55 °C to +125 °C) | ppm/°C or % | ± 30 ppm/°C | ± 15 % |
| Dissipation Factor (Maximum)                 | ± %         | 0.15        | 2.5    |

### MECHANICAL SPECIFICATIONS

|                                |  |
|--------------------------------|--|
| Marking Resistance to Solvents | Permanency testing per MIL-STD-202, method 215                                     |
| Solderability                  | Per MIL-STD-202, method 208E   |
| Body                           | High alumina, epoxy coated (flammability UL 94 V-0)                                |
| Terminals                      | Phosphorus-bronze, solder plated   |
| Marking                        | Pin #1 identifier, DALE or D, part number (abbreviated as space allows), date code |

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: 20108D1C103K5P (preferred part numbering format)



| GLOBAL MODEL | PIN COUNT   | PACKAGE HEIGHT  | SCHEMATIC                  | CHARACTERISTIC                    | CAPACITANCE VALUE  | TOLERANCE                               | VOLTAGE                 | PACKAGING                                      | SPECIAL   |
|--------------|---|-----------------|----------------------------|-----------------------------------|--|---|-------------------------|--|---|
| 201 = CS201  | 04 to 18 pin available<br>04 = 4 pin<br>08 = 8 pin<br>18 = 18 pin | D = "D" Profile | 1<br>3<br>4<br>0 = Special | C = C0G<br>X = X7R<br>S = Special | (in picofarads) 2 digit significant figure, followed by a multiplier<br>330 = 33 pF<br>392 = 3900 pF<br>104 = 0.1 μF | K = ± 10 %<br>M = ± 20 %<br>S = Special | 5 = 50 V<br>S = Special | E = Lead (Pb)-free, bulk<br>P = Tin/lead, bulk | Blank = Standard (Dash Number) (Up to 3 digits) From 1 to 999 as applicable |

Historical Part Number example: CS20108D1C103K5 (will continue to be accepted)

|                  |           |                |           |                |                   |           |         |           |
|------------------|-----------|----------------|-----------|----------------|-------------------|-----------|---------|-----------|
| CS201            | 08        | D              | 1         | C              | 103               | K         | 5       | P03       |
| HISTORICAL MODEL | PIN COUNT | PACKAGE HEIGHT | SCHEMATIC | CHARACTERISTIC | CAPACITANCE VALUE | TOLERANCE | VOLTAGE | PACKAGING |

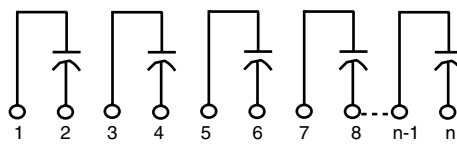
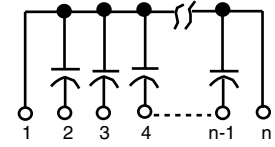
\* Pb containing terminations are not RoHS compliant, exemptions may apply

**DIMENSIONS** in inches (millimeters)


Pin #1 is extreme left-hand terminal on side with marking.

| NUMBER OF PINS | L MAXIMUM     | NUMBER OF PINS | L MAXIMUM     | NUMBER OF PINS | L MAXIMUM     |
|----------------|---------------|----------------|---------------|----------------|---------------|
| 4 pin          | 0.400 (10.16) | 9 pin          | 0.900 (22.86) | 14 pin         | 1.400 (35.56) |
| 5 pin          | 0.500 (12.70) | 10 pin         | 1.000 (25.40) | 15 pin         | 1.500 (38.10) |
| 6 pin          | 0.600 (15.24) | 11 pin         | 1.100 (27.94) | 16 pin         | 1.600 (40.64) |
| 7 pin          | 0.700 (17.78) | 12 pin         | 1.200 (30.48) | 17 pin         | 1.700 (43.18) |
| 8 pin          | 0.800 (20.32) | 13 pin         | 1.300 (33.02) | 18 pin         | 1.800 (45.72) |

**SCHEMATICS**
**Schematic 1**

**Common Bus - 1 Ground Lead**
**Schematic 3**

**Isolated Capacitor Sections**
**Schematic 4**

**Common Bus - 2 Ground Leads**



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