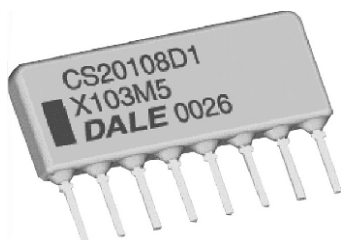


# Thick Film Capacitor Networks, Single-In-Line, Conformal Coated SIP



## 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)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS\***  
Available  
**HALOGEN FREE**

## Note

\* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

## STANDARD ELECTRICAL SPECIFICATIONS

| VISHAY DALE MODEL | PROFILE | SCHEMATIC | CAPACITANCE RANGE |                  | CAPACITANCE TOLERANCE<br>(-55 °C to +125 °C)<br>± % | CAPACITANCE VOLTAGE<br>at 85 °C<br>V <sub>DC</sub> |
|-------------------|---------|-----------|-------------------|------------------|-----------------------------------------------------|----------------------------------------------------|
|                   |         |           | C0G (1)           | 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

(1) C0G capacitors may be substituted for X7R capacitors

## TECHNICAL SPECIFICATIONS

| PARAMETER                                      | UNIT              | CS201       |        |
|------------------------------------------------|-------------------|-------------|--------|
|                                                |                   | C0G         | X7R    |
| Temperature coefficient<br>(-55 °C to +125 °C) | ppm/°C<br>or<br>% | ± 30 ppm/°C | ± 15 % |
| Dissipation factor<br>(maximum)                | ± %               | 0.15        | 2.5    |

## MATERIAL 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)

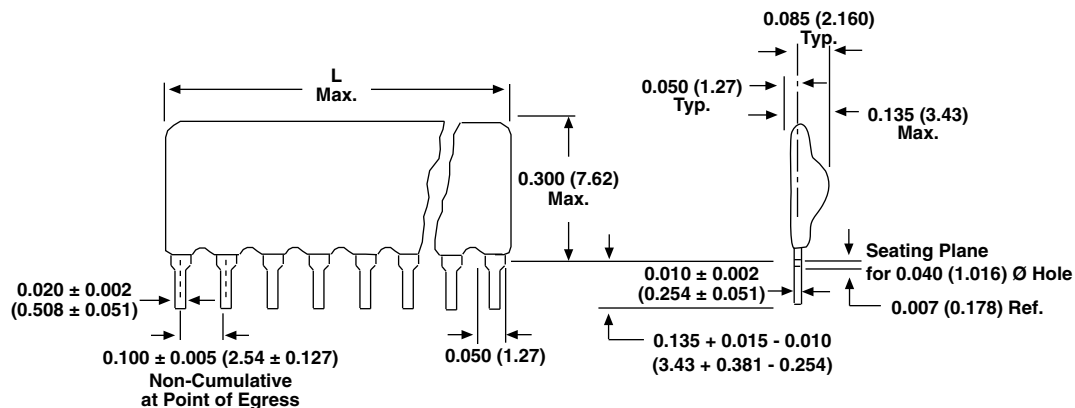
|              |                                                                   |                 |                            |                                   |                                                                                                                      |                                         |                         |                                                  |                                                                             |   |   |   |   |  |  |  |
|--------------|-------------------------------------------------------------------|-----------------|----------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------|--------------------------------------------------|-----------------------------------------------------------------------------|---|---|---|---|--|--|--|
| 2            | 0                                                                 | 1               | 0                          | 8                                 | D                                                                                                                    | 1                                       | C                       | 1                                                | 0                                                                           | 3 | K | 5 | P |  |  |  |
| 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 |

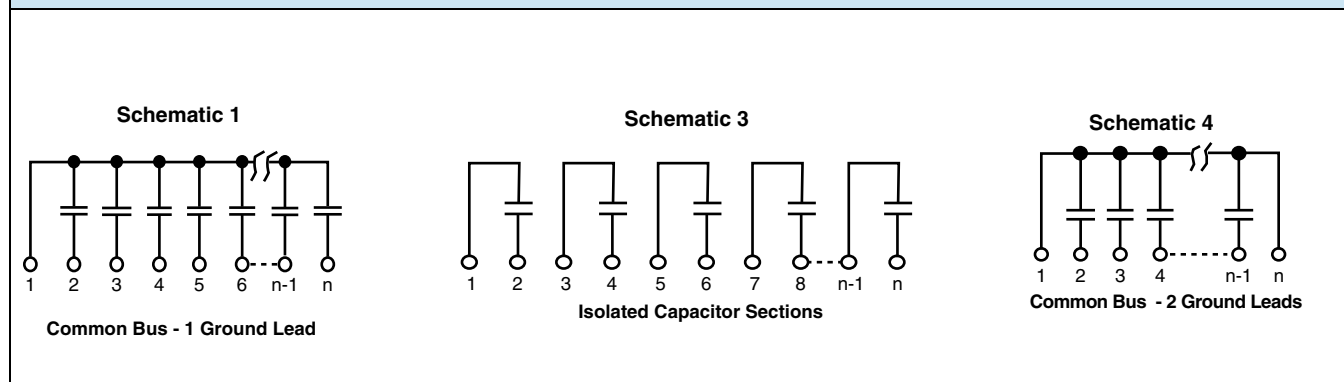
## Note

- For additional information on packaging, refer to the Through-hole Network Packaging document ([www.vishay.com/doc?31542](http://www.vishay.com/doc?31542))

**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**




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