



**THE DATASHEET OF  
SBSGC5000102MXT**



### Dimensions

|    |                           |
|----|---------------------------|
| L1 | 4.55±0.25 (0.179"±0.010") |
| L2 | 4.70±0.4 (0.185"±0.015")  |
| W  | 3.20±0.2 (0.126"±0.008")  |
| T  | 2.50±0.15 (0.098"±0.006") |
| B1 | 1.50±0.4 (0.059"±0.015")  |
| B2 | 0.30±0.25 (0.012"±0.010") |

### Suggested mounting pad details

E = Unprinted solder area between ground pads

|   |               |
|---|---------------|
| A | 2.65 (0.104") |
| B | 1.40 (0.055") |
| C | 0.08 (0.031") |
| D | 1.40 (0.055") |
| E | 2.05 (0.080") |
| F | 5.80 (0.228") |

It is recommended that designers independently confirm pad dimensions are acceptable, particularly with respect to higher working voltages.

### Electrical Details

|                              |                 |
|------------------------------|-----------------|
| Electrical Configuration     | C Filter        |
| Capacitance Measurement      | @ 1000hr Point  |
| Current Rating               | 10A             |
| Insulation Resistance (IR)   | 10GΩ or 1000ΩF  |
| Temperature Rating           | -55°C to +125°C |
| Ferrite Inductance (Typical) | N/A             |

### Mechanical Details

|                           |  |
|---------------------------|--|
| Terminals & Finish - End  | SnAg solder over Sn Plate  |
| Terminals & Finish - Side | Sn Plated  |
| Reflow Temperature        | 220°C max.   |
| Construction              | Ceramic Multi Layer Chip Capacitor<br>Copper Alloy Through Conductor<br>Soldered End Connections |
| Weight (Typical)          | 0.20g (0.007oz)  |

| Reeled quantities | SBSGC |
|-------------------|-------|
| 178mm (7") reel   | 500   |

| Product Code   | Capacitance (±20%) | Dielectric | Rated Voltage (dc) | DWV (dc) | Approximate Resonant Frequency (MHz) | Typical No-Load Insertion Loss (dB)* |      |       |        |      |
|----------------|--------------------|------------|--------------------|----------|--------------------------------------|--------------------------------------|------|-------|--------|------|
|                |                    |            |                    |          |                                      | 0.1MHz                               | 1MHz | 10MHz | 100MHz | 1GHz |
| SBSGC5000102MX | 1.0nF              | X7R        | 500                | 750      | 186                                  | 0                                    | 0    | 5     | 23     | 18   |
| SBSGC5000152MX | 1.5nF              |            | 500                | 750      | 147                                  | 0                                    | 0    | 8     | 27     | 18   |
| SBSGC5000222MX | 2.2nF              |            | 500                | 750      | 130                                  | 0                                    | 0    | 11    | 32     | 18   |
| SBSGC5000332MX | 3.3nF              |            | 500                | 750      | 110                                  | 0                                    | 1    | 14    | 34     | 18   |
| SBSGC5000472MX | 4.7nF              |            | 500                | 750      | 100                                  | 0                                    | 2    | 17    | 40     | 18   |
| SBSGC5000682MX | 6.8nF              |            | 500                | 750      | 80                                   | 0                                    | 4    | 20    | 38     | 18   |
| SBSGC5000103MX | 10nF               |            | 500                | 750      | 62.5                                 | 0                                    | 5    | 24    | 38     | 18   |
| SBSGC5000153MX | 15nF               |            | 500                | 750      | 50                                   | 0                                    | 8    | 27    | 38     | 18   |
| SBSGC5000223MX | 22nF               |            | 500                | 750      | 39                                   | 0                                    | 11   | 32    | 39     | 18   |
| SBSGC5000333MX | 33nF               |            | 500                | 750      | 33                                   | 1                                    | 14   | 34    | 39     | 18   |
| SBSGC5000473MX | 47nF               |            | 500                | 750      | 28                                   | 2                                    | 17   | 36    | 39     | 18   |
| SBSGC2000683MX | 68nF               |            | 200                | 500      | 23                                   | 3                                    | 20   | 37    | 39     | 18   |
| SBSGC1000104MX | 100nF              |            | 100                | 250      | 19                                   | 5                                    | 23   | 41    | 39     | 18   |
| SBSGC1000154MX | 150nF              |            | 100                | 250      | 15.5                                 | 8                                    | 27   | 47    | 39     | 18   |
| SBSGC0500224MX | 220nF              |            | 50                 | 125      | 13                                   | 11                                   | 30   | 49    | 39     | 18   |

\* Insertion Loss performance quoted is measured on an open FR4 board mounted on a brass backplane in a 50Ω system. Performance curves can be supplied on request. Performance in circuit is liable to be different and is affected by board material, track layout, grounding efficiency and circuit impedances. Shielding can be used to improve high frequency performance.

### Ordering Information - SBSGC range

| SB                 | S             | G                                   | C                        | 500   | 0473   | M               | X              | B  |
|--------------------|---------------|-------------------------------------|--------------------------|---|--|-----------------|----------------|--|
| Type               | Case style    | Size                                | Electrical configuration | Voltage (dc)  | Capacitance in picofarads (pF)   | Tolerance       | Dielectric     | Packaging  |
| Syfer Board Filter | Surface Mount | Size Code <b>G</b> (nominally 1812) | <b>C</b> = C Filter      | <b>050</b> = 50V<br><b>100</b> = 100V<br><b>200</b> = 200V<br><b>500</b> = 500V | First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following<br>Example: <b>0472</b> = 4700pF<br><b>0683</b> = 68000pF | <b>M</b> = ±20% | <b>X</b> = X7R | <b>T</b> = 178mm (7") reel<br><b>R</b> = 330mm (13") reel<br><b>B</b> = Bulk |

Note: The addition of a 4-digit numerical suffix code can be used to denote changes to the standard part. Options include for example: change of finish / alternative voltage rating / non-standard intermediate capacitance values / test requirements. Please refer specific requests to the factory.

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