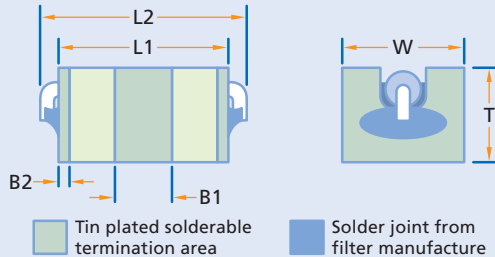


# Surface Mount EMI Filters

## Surface Mount C and Pi Filters

**SBSG**

The SBSG range has a 5A current rating for the Pi type, and 10A rating for the C type. Suitable for pick-and-place, these miniature surface mount filters offer assembly savings compared with conventional panel mounted filters. The combination of high current, high capacitance and high voltage makes them suitable for a wide range of applications including telecoms, mil/aerospace and industrial.



### Specifications

|    | mm          | (inches)        |
|----|-------------|-----------------|
| L1 | 4.55 ± 0.25 | (0.179 ± 0.010) |
| L2 | 5.25 ± 0.4  | (0.207 ± 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) |

### Electrical Configuration

#### Capacitance Measurement Current Rating

### Temperature Rating

#### DC Resistance

#### Ferrite Inductance, typical

#### Weight

C & Pi Filters  
At 1000hr point  
Pi Section 5 amps dc  
C Section 10 amps dc  
-55°C to 125°C  
0.005 Ohms Max.  
0.5µH (Pi Section only)  
0.2g typical (0.007oz)



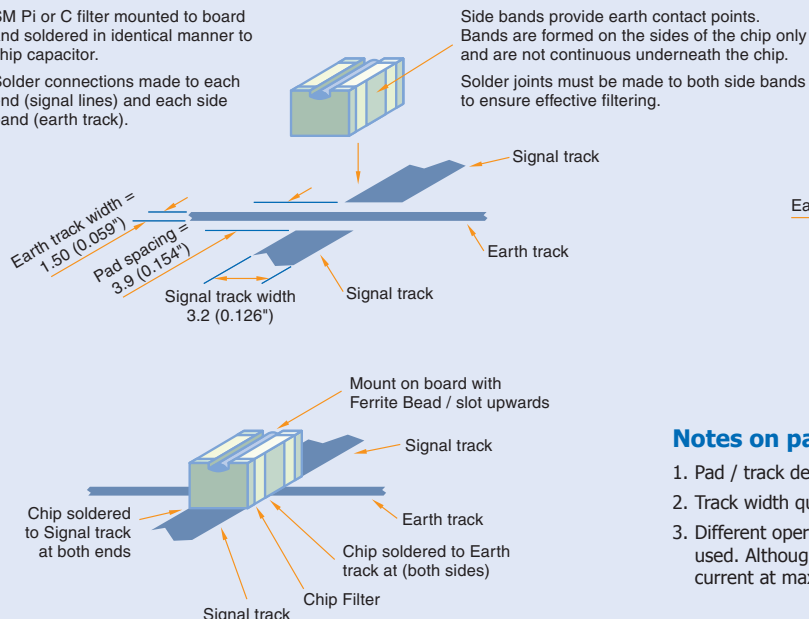
| Type No.<br>(* = Preferred Value) | Capacitance<br>(M = +/-20%) | Dielectric<br>Code | Rated<br>Voltage<br>(Vd.c.) | DWV<br>(Vd.c.) | Typical Insertion Loss (dB) 50 ohm System No Load |      |       |        |      |            |      |       |        |      |
|-----------------------------------|-----------------------------|--------------------|-----------------------------|----------------|---------------------------------------------------|------|-------|--------|------|------------|------|-------|--------|------|
|                                   |                             |                    |                             |                | C Section                                         |      |       |        |      | Pi Section |      |       |        |      |
|                                   |                             |                    |                             |                | 0.1MHz                                            | 1MHz | 10MHz | 100MHz | 1GHz | 0.1MHz     | 1MHz | 10MHz | 100MHz | 1GHz |
| * SBSG#1 5000102MX#2              | 1.0nF                       | X7R                | 500                         | 750            | 0                                                 | 0    | 4     | 23     | 41   | 0          | 0    | 5     | 33     | 60+  |
| SBSG#1 5000152MX#2                | 1.5nF                       | X7R                | 500                         | 750            | 0                                                 | 0    | 7     | 26     | 45   | 0          | 0    | 9     | 40     | 60+  |
| * SBSG#1 5000222MX#2              | 2.2nF                       | X7R                | 500                         | 750            | 0                                                 | 0    | 10    | 30     | 50   | 0          | 0    | 11    | 47     | 60+  |
| SBSG#1 5000332MX#2                | 3.3nF                       | X7R                | 500                         | 750            | 0                                                 | 0    | 13    | 33     | 52   | 0          | 0    | 14    | 54     | 60+  |
| * SBSG#1 5000472MX#2              | 4.7nF                       | X7R                | 500                         | 750            | 0                                                 | 1    | 16    | 36     | 55   | 0          | 1    | 19    | 57     | 60+  |
| SBSG#1 5000682MX#2                | 6.8nF                       | X7R                | 500                         | 750            | 0                                                 | 2    | 19    | 39     | 57   | 0          | 2    | 24    | 60+    | 60+  |
| * SBSG#1 5000103MX#2              | 10nF                        | X7R                | 500                         | 750            | 0                                                 | 4    | 22    | 41     | 60+  | 0          | 5    | 29    | 60+    | 60+  |
| * SBSG#1 5000153MX#2              | 15nF                        | X7R                | 500                         | 750            | 0                                                 | 7    | 25    | 44     | 60+  | 0          | 7    | 36    | 60+    | 60+  |
| * SBSG#1 5000223MX#2              | 22nF                        | X7R                | 500                         | 750            | 0                                                 | 10   | 29    | 46     | 60+  | 0          | 11   | 42    | 60+    | 60+  |
| SBSG#1 5000333MX#2                | 33nF                        | X7R                | 500                         | 750            | 0                                                 | 13   | 33    | 48     | 60+  | 0          | 14   | 51    | 60+    | 60+  |
| * SBSG#1 5000473MX#2              | 47nF                        | X7R                | 500                         | 750            | 1                                                 | 16   | 35    | 50     | 60+  | 1          | 16   | 57    | 60+    | 60+  |
| SBSG#1 2000683MX#2                | 68nF                        | X7R                | 200                         | 500            | 2                                                 | 19   | 39    | 54     | 60+  | 3          | 19   | 60+   | 60+    | 60+  |
| * SBSG#1 1000104MX#2              | 100nF                       | X7R                | 100                         | 250            | 4                                                 | 22   | 41    | 57     | 60+  | 5          | 21   | 60+   | 60+    | 60+  |
| * SBSG#1 1000154MX#2              | 150nF                       | X7R                | 100                         | 250            | 7                                                 | 25   | 45    | 60+    | 60+  | 8          | 23   | 60+   | 60+    | 60+  |
| * SBSG#1 0500224MX#2              | 220nF                       | X7R                | 50                          | 125            | 10                                                | 29   | 49    | 60+    | 60+  | 11         | 27   | 60+   | 60+    | 60+  |

**Note #1** For C Filter insert "C", for Pi Filter insert "P". **Note #2** For taping on 7" reel insert "T", on 13" reel insert "R", if supplied in bulk insert "B".  
Insertion loss figures quoted are for filters mounted within a partition. It should be noted that some degradation will occur at higher frequencies for filters which are not fully shielded.

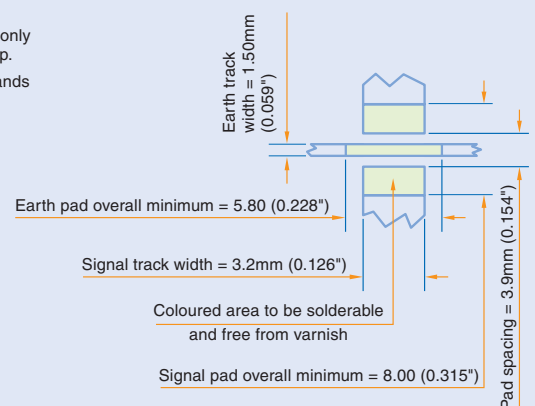
### SBSG

SM Pi or C filter mounted to board and soldered in identical manner to chip capacitor.

Solder connections made to each end (signal lines) and each side band (earth track).



### PAD DIMENSIONS - C & Pi Filter



### Notes on pad design

1. Pad / track design assumes 2oz copper track material.
2. Track width quoted allows for operation at max. rated current at 125°C.
3. Different operating conditions may allow alternative track designs to be used. Although any pad must be able to support continuous operating current at max. operating temperature.