

Suspended substrate stripline Band Pass Filter

ZBSS-10G-S+

Typical Performance Data

| FREQ. | INSERTION LOSS | | | INPUT RETURN LOSS | | | OUTPUT RETURN LOSS | | |
|-------|----------------|--------|--------|-------------------|--------|--------|--------------------|--------|--------|
| | (dB) | | | (dB) | | | (dB) | | |
| (MHz) | @-40°C | @+25°C | @+85°C | @-40°C | @+25°C | @+85°C | @-40°C | @+25°C | @+85°C |
| 10 | 95.82 | 100.02 | 98.09 | 0.01 | 0.01 | 0.02 | 0.01 | 0.00 | 0.02 |
| 50 | 101.48 | 105.56 | 101.52 | 0.03 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 |
| 100 | 115.65 | 112.22 | 118.31 | 0.03 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 |
| 200 | 116.40 | 117.82 | 119.06 | 0.07 | 0.03 | 0.04 | 0.02 | 0.00 | 0.00 |
| 300 | 124.87 | 113.82 | 107.67 | 0.09 | 0.04 | 0.06 | 0.03 | 0.00 | 0.00 |
| 400 | 109.68 | 115.32 | 113.00 | 0.10 | 0.04 | 0.07 | 0.02 | 0.02 | 0.02 |
| 500 | 110.29 | 113.27 | 106.04 | 0.10 | 0.04 | 0.06 | 0.02 | 0.06 | 0.06 |
| 600 | 110.05 | 115.35 | 107.33 | 0.09 | 0.04 | 0.06 | 0.07 | 0.10 | 0.12 |
| 800 | 103.82 | 103.18 | 103.80 | 0.09 | 0.03 | 0.04 | 0.12 | 0.16 | 0.18 |
| 1000 | 97.38 | 97.75 | 98.96 | 0.07 | 0.01 | 0.02 | 0.15 | 0.20 | 0.22 |
| 1500 | 87.89 | 87.38 | 87.77 | 0.08 | 0.00 | 0.01 | 0.19 | 0.25 | 0.27 |
| 2000 | 81.55 | 81.42 | 81.13 | 0.01 | 0.08 | 0.08 | 0.20 | 0.26 | 0.29 |
| 2500 | 76.97 | 77.08 | 77.14 | 0.01 | 0.09 | 0.10 | 0.32 | 0.41 | 0.45 |
| 3000 | 75.34 | 75.35 | 75.42 | 0.08 | 0.19 | 0.20 | 0.41 | 0.51 | 0.54 |
| 3500 | 76.32 | 76.52 | 76.50 | 0.07 | 0.19 | 0.20 | 0.37 | 0.47 | 0.52 |
| 4000 | 81.14 | 81.66 | 81.60 | 0.09 | 0.22 | 0.23 | 0.49 | 0.61 | 0.67 |
| 4500 | 91.43 | 90.83 | 91.49 | 0.07 | 0.21 | 0.23 | 0.72 | 0.86 | 0.92 |
| 5000 | 72.13 | 71.82 | 71.78 | 0.09 | 0.25 | 0.27 | 0.67 | 0.82 | 0.89 |
| 5300 | 60.38 | 60.03 | 59.92 | 0.13 | 0.29 | 0.32 | 0.70 | 0.86 | 0.94 |
| 5800 | 42.13 | 41.81 | 41.67 | 0.29 | 0.45 | 0.49 | 1.02 | 1.19 | 1.28 |
| 6100 | 31.13 | 30.85 | 30.72 | 0.36 | 0.53 | 0.58 | 1.02 | 1.20 | 1.28 |
| 6400 | 20.03 | 19.72 | 19.58 | 0.58 | 0.77 | 0.84 | 0.97 | 1.18 | 1.28 |
| 6650 | 10.38 | 10.08 | 9.94 | 1.27 | 1.61 | 1.71 | 1.71 | 2.04 | 2.21 |
| 6850 | 3.71 | 3.68 | 3.66 | 4.57 | 5.30 | 5.56 | 5.33 | 6.05 | 6.40 |
| 8000 | 0.64 | 0.84 | 0.91 | 32.84 | 33.69 | 34.37 | 31.03 | 31.38 | 31.56 |
| 8500 | 0.65 | 0.84 | 0.90 | 20.43 | 20.89 | 21.52 | 19.35 | 19.65 | 20.19 |
| 9000 | 0.58 | 0.79 | 0.85 | 28.73 | 28.58 | 29.33 | 28.22 | 27.84 | 28.58 |
| 9500 | 0.65 | 0.86 | 0.91 | 18.48 | 18.63 | 19.04 | 18.46 | 18.51 | 18.98 |
| 9800 | 0.61 | 0.83 | 0.89 | 24.49 | 25.21 | 25.13 | 24.79 | 25.31 | 25.59 |
| 10000 | 0.60 | 0.82 | 0.89 | 38.21 | 35.19 | 36.38 | 35.58 | 33.76 | 35.84 |
| 10200 | 0.64 | 0.86 | 0.93 | 21.83 | 21.62 | 22.05 | 22.01 | 21.78 | 22.40 |
| 10500 | 0.72 | 0.95 | 1.02 | 17.53 | 17.66 | 17.77 | 17.96 | 18.13 | 18.39 |
| 11000 | 0.70 | 0.94 | 1.02 | 22.80 | 23.35 | 22.88 | 23.97 | 24.74 | 24.19 |
| 11500 | 0.76 | 1.03 | 1.11 | 36.28 | 36.92 | 36.78 | 32.75 | 35.70 | 38.62 |
| 12000 | 0.95 | 1.24 | 1.34 | 20.34 | 20.35 | 20.47 | 19.96 | 20.19 | 20.41 |
| 12800 | 2.51 | 3.25 | 3.59 | 12.21 | 11.17 | 10.66 | 9.59 | 8.65 | 8.23 |
| 13050 | 9.54 | 10.89 | 11.46 | 2.25 | 2.37 | 2.36 | 1.85 | 1.86 | 1.88 |
| 13300 | 19.41 | 20.62 | 21.10 | 0.81 | 1.07 | 1.13 | 0.65 | 0.80 | 0.87 |
| 13600 | 29.48 | 30.53 | 30.89 | 0.45 | 0.71 | 0.76 | 0.36 | 0.51 | 0.58 |
| 13900 | 38.01 | 38.96 | 39.27 | 0.28 | 0.55 | 0.60 | 0.27 | 0.42 | 0.49 |
| 14200 | 45.66 | 46.52 | 46.83 | 0.22 | 0.49 | 0.55 | 0.25 | 0.39 | 0.46 |
| 14500 | 52.64 | 53.45 | 53.78 | 0.15 | 0.42 | 0.47 | 0.23 | 0.37 | 0.44 |
| 15000 | 63.19 | 64.00 | 64.33 | 0.13 | 0.38 | 0.42 | 0.24 | 0.37 | 0.44 |
| 15500 | 72.68 | 73.51 | 73.80 | 0.12 | 0.36 | 0.40 | 0.24 | 0.37 | 0.45 |
| 16500 | 89.62 | 90.06 | 90.10 | 0.06 | 0.21 | 0.27 | 0.25 | 0.38 | 0.46 |
| 17000 | 95.34 | 96.80 | 97.81 | 0.15 | 0.14 | 0.18 | 0.26 | 0.39 | 0.48 |
| 17500 | 105.38 | 102.94 | 103.24 | 0.15 | 0.14 | 0.19 | 0.26 | 0.39 | 0.49 |
| 18000 | 106.15 | 110.92 | 109.45 | 0.14 | 0.14 | 0.20 | 0.26 | 0.39 | 0.49 |
| 18500 | 111.24 | 116.28 | 116.76 | 0.11 | 0.16 | 0.19 | 0.24 | 0.38 | 0.48 |
| 19000 | 117.37 | 116.93 | 125.29 | 0.02 | 0.23 | 0.29 | 0.23 | 0.38 | 0.48 |
| 19500 | 120.65 | 112.96 | 116.46 | 0.08 | 0.19 | 0.23 | 0.19 | 0.35 | 0.45 |
| 20000 | 120.06 | 118.47 | 109.70 | 0.01 | 0.26 | 0.31 | 0.17 | 0.32 | 0.43 |
| 20500 | 122.16 | 115.41 | 124.29 | 0.04 | 0.25 | 0.30 | 0.10 | 0.27 | 0.35 |
| 21000 | 120.14 | 109.09 | 117.38 | 0.10 | 0.20 | 0.26 | 0.09 | 0.25 | 0.33 |
| 21500 | 112.19 | 116.76 | 120.89 | 0.08 | 0.23 | 0.29 | 0.09 | 0.23 | 0.36 |
| 22000 | 114.75 | 112.32 | 116.44 | 0.03 | 0.28 | 0.33 | 0.06 | 0.22 | 0.32 |
| 23000 | 104.25 | 113.32 | 111.69 | 0.01 | 0.31 | 0.38 | 0.10 | 0.26 | 0.36 |
| 24000 | 103.61 | 98.68 | 107.86 | 0.11 | 0.42 | 0.48 | 0.12 | 0.28 | 0.38 |
| 25000 | 100.13 | 105.48 | 100.20 | 0.09 | 0.44 | 0.51 | 0.11 | 0.28 | 0.37 |
| 26500 | 92.83 | 95.37 | 95.97 | 0.06 | 0.27 | 0.33 | 0.08 | 0.25 | 0.36 |



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Suspended substrate stripline

Band Pass Filter

ZBSS-10G-S+

Typical Performance Data

| FREQ. (MHz) | GROUP DELAY | | |
|----------------|-------------|--------|--------|
| | (nsec) | | |
| | @-40°C | @+25°C | @+85°C |
| 8000 | 0.65 | 0.65 | 0.65 |
| 8100 | 0.64 | 0.63 | 0.63 |
| 8200 | 0.62 | 0.62 | 0.62 |
| 8300 | 0.61 | 0.61 | 0.61 |
| 8400 | 0.60 | 0.60 | 0.60 |
| 8500 | 0.59 | 0.59 | 0.59 |
| 8600 | 0.58 | 0.58 | 0.58 |
| 8700 | 0.58 | 0.58 | 0.58 |
| 8800 | 0.57 | 0.57 | 0.57 |
| 8900 | 0.57 | 0.57 | 0.57 |
| 9000 | 0.56 | 0.56 | 0.56 |
| 9100 | 0.56 | 0.56 | 0.56 |
| 9200 | 0.56 | 0.55 | 0.56 |
| 9300 | 0.55 | 0.55 | 0.55 |
| 9400 | 0.55 | 0.55 | 0.55 |
| 9500 | 0.55 | 0.55 | 0.55 |
| 9600 | 0.54 | 0.54 | 0.55 |
| 9700 | 0.54 | 0.54 | 0.55 |
| 9800 | 0.55 | 0.54 | 0.55 |
| 9900 | 0.55 | 0.55 | 0.55 |
| 10000 | 0.55 | 0.55 | 0.55 |
| 10100 | 0.55 | 0.55 | 0.55 |
| 10200 | 0.55 | 0.55 | 0.55 |
| 10300 | 0.55 | 0.55 | 0.55 |
| 10400 | 0.55 | 0.55 | 0.55 |
| 10500 | 0.55 | 0.55 | 0.55 |
| 10600 | 0.55 | 0.55 | 0.55 |
| 10700 | 0.55 | 0.55 | 0.56 |
| 10800 | 0.56 | 0.56 | 0.56 |
| 10900 | 0.56 | 0.56 | 0.57 |
| 11000 | 0.57 | 0.57 | 0.57 |
| 11100 | 0.58 | 0.58 | 0.58 |
| 11200 | 0.58 | 0.58 | 0.58 |
| 11300 | 0.59 | 0.59 | 0.59 |
| 11400 | 0.60 | 0.60 | 0.60 |
| 11500 | 0.60 | 0.61 | 0.61 |
| 11600 | 0.61 | 0.62 | 0.62 |
| 11700 | 0.62 | 0.63 | 0.63 |
| 11800 | 0.64 | 0.64 | 0.64 |
| 11900 | 0.65 | 0.65 | 0.66 |
| 12000 | 0.67 | 0.67 | 0.67 |



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