

# Coaxial Band Pass Filter

# ZVBP-4300-S+

## Typical Performance Data

| FREQ.<br><br>(MHz) | INSERTION LOSS |        |        | INPUT RETURN LOSS |        |        | OUTPUT RETURN LOSS |        |        |
|--------------------|----------------|--------|--------|-------------------|--------|--------|--------------------|--------|--------|
|                    | (dB)           |        |        | (dB)              |        |        | (dB)               |        |        |
|                    | @-40°C         | @+25°C | @+85°C | @-40°C            | @+25°C | @+85°C | @-40°C             | @+25°C | @+85°C |
| 10                 | 72.11          | 77.25  | 75.62  | 0.00              | 0.00   | 0.01   | 0.01               | 0.01   | 0.01   |
| 50                 | 89.97          | 95.66  | 86.59  | 0.02              | 0.03   | 0.03   | 0.02               | 0.03   | 0.03   |
| 300                | 109.80         | 117.17 | 97.31  | 0.10              | 0.10   | 0.11   | 0.10               | 0.11   | 0.11   |
| 1075               | 104.53         | 116.12 | 128.74 | 0.09              | 0.12   | 0.14   | 0.07               | 0.12   | 0.12   |
| 2325               | 104.01         | 103.31 | 118.95 | 0.04              | 0.11   | 0.15   | 0.02               | 0.12   | 0.16   |
| 2600               | 106.61         | 111.01 | 99.92  | 0.03              | 0.11   | 0.16   | 0.03               | 0.14   | 0.17   |
| 3075               | 95.54          | 97.09  | 95.40  | 0.05              | 0.14   | 0.19   | 0.05               | 0.17   | 0.21   |
| 3610               | 78.67          | 78.50  | 78.59  | 0.07              | 0.16   | 0.20   | 0.08               | 0.19   | 0.23   |
| 3700               | 74.03          | 73.99  | 73.88  | 0.08              | 0.16   | 0.20   | 0.08               | 0.20   | 0.23   |
| 3930               | 58.54          | 58.42  | 58.36  | 0.09              | 0.17   | 0.21   | 0.09               | 0.20   | 0.23   |
| 4100               | 38.18          | 37.87  | 37.66  | 0.14              | 0.21   | 0.24   | 0.14               | 0.24   | 0.26   |
| 4140               | 30.67          | 30.22  | 29.92  | 0.17              | 0.26   | 0.28   | 0.17               | 0.28   | 0.29   |
| 4180               | 20.82          | 20.13  | 19.67  | 0.30              | 0.40   | 0.44   | 0.28               | 0.41   | 0.43   |
| 4190               | 17.81          | 17.03  | 16.50  | 0.39              | 0.50   | 0.56   | 0.37               | 0.51   | 0.54   |
| 4216               | 8.63           | 7.65   | 6.97   | 1.29              | 1.68   | 1.99   | 1.23               | 1.65   | 1.93   |
| 4220               | 7.13           | 6.16   | 5.50   | 1.71              | 2.26   | 2.71   | 1.63               | 2.21   | 2.63   |
| 4228               | 4.30           | 3.52   | 3.00   | 3.24              | 4.35   | 5.33   | 3.13               | 4.26   | 5.18   |
| 4236               | 2.15           | 1.73   | 1.48   | 6.42              | 8.58   | 10.65  | 6.24               | 8.40   | 10.32  |
| 4240               | 1.46           | 1.23   | 1.11   | 8.97              | 11.95  | 15.04  | 8.74               | 11.65  | 14.44  |
| 4242               | 1.20           | 1.06   | 0.99   | 10.56             | 14.09  | 18.01  | 10.28              | 13.69  | 17.11  |
| 4248               | 0.76           | 0.80   | 0.82   | 17.07             | 23.66  | 32.35  | 16.56              | 22.46  | 27.62  |
| 4250               | 0.69           | 0.76   | 0.81   | 20.13             | 28.47  | 28.83  | 19.44              | 26.52  | 27.19  |
| 4256               | 0.58           | 0.72   | 0.79   | 30.98             | 25.15  | 21.16  | 30.95              | 25.53  | 21.29  |
| 4260               | 0.57           | 0.71   | 0.79   | 26.27             | 22.16  | 19.67  | 27.25              | 22.56  | 19.81  |
| 4262               | 0.56           | 0.71   | 0.79   | 24.53             | 21.46  | 19.40  | 25.30              | 21.81  | 19.52  |
| 4264               | 0.56           | 0.71   | 0.79   | 23.42             | 21.09  | 19.36  | 24.05              | 21.41  | 19.44  |
| 4270               | 0.55           | 0.69   | 0.77   | 22.54             | 21.52  | 20.41  | 22.92              | 21.69  | 20.31  |
| 4284               | 0.51           | 0.65   | 0.72   | 30.48             | 31.84  | 31.95  | 29.19              | 28.49  | 27.14  |
| 4286               | 0.50           | 0.65   | 0.71   | 33.73             | 36.18  | 36.89  | 30.80              | 29.44  | 27.92  |
| 4288               | 0.50           | 0.65   | 0.71   | 38.78             | 44.38  | 47.07  | 31.96              | 29.74  | 28.11  |
| 4298               | 0.50           | 0.64   | 0.71   | 29.64             | 28.54  | 27.59  | 27.60              | 25.77  | 24.67  |
| 4300               | 0.50           | 0.65   | 0.71   | 28.04             | 27.20  | 26.34  | 26.65              | 25.08  | 24.07  |
| 4304               | 0.50           | 0.65   | 0.72   | 25.93             | 25.43  | 24.68  | 25.35              | 24.20  | 23.27  |
| 4318               | 0.51           | 0.66   | 0.73   | 24.49             | 24.10  | 23.46  | 26.05              | 25.33  | 24.23  |
| 4322               | 0.51           | 0.66   | 0.73   | 24.82             | 24.14  | 23.55  | 27.65              | 26.61  | 25.38  |
| 4326               | 0.52           | 0.67   | 0.74   | 24.88             | 23.85  | 23.42  | 29.33              | 27.67  | 26.50  |
| 4340               | 0.56           | 0.71   | 0.78   | 20.82             | 20.44  | 20.91  | 23.47              | 23.53  | 24.63  |
| 4346               | 0.58           | 0.74   | 0.80   | 19.26             | 19.53  | 20.31  | 21.15              | 22.05  | 23.60  |
| 4350               | 0.60           | 0.75   | 0.82   | 18.80             | 19.53  | 20.46  | 20.42              | 21.87  | 23.55  |
| 4356               | 0.61           | 0.77   | 0.85   | 19.27             | 20.66  | 21.09  | 20.65              | 22.72  | 23.20  |
| 4358               | 0.61           | 0.78   | 0.87   | 19.80             | 21.21  | 20.90  | 21.08              | 22.93  | 22.23  |
| 4362               | 0.63           | 0.82   | 0.94   | 21.33             | 21.21  | 18.81  | 22.11              | 21.49  | 18.79  |
| 4370               | 0.77           | 1.11   | 1.38   | 18.01             | 13.94  | 11.66  | 17.04              | 13.43  | 11.29  |
| 4378               | 1.39           | 2.09   | 2.62   | 9.79              | 7.51   | 6.36   | 9.32               | 7.27   | 6.16   |
| 4390               | 4.21           | 5.46   | 6.28   | 3.45              | 2.80   | 2.51   | 3.29               | 2.74   | 2.45   |
| 4400               | 7.93           | 9.29   | 10.12  | 1.54              | 1.40   | 1.37   | 1.45               | 1.40   | 1.35   |
| 4480               | 32.20          | 32.91  | 33.36  | 0.18              | 0.31   | 0.38   | 0.18               | 0.35   | 0.41   |
| 4500               | 36.31          | 36.95  | 37.36  | 0.15              | 0.27   | 0.34   | 0.16               | 0.32   | 0.38   |
| 4520               | 39.99          | 40.57  | 40.95  | 0.15              | 0.26   | 0.32   | 0.14               | 0.30   | 0.36   |
| 4600               | 51.74          | 52.21  | 52.50  | 0.11              | 0.23   | 0.28   | 0.11               | 0.26   | 0.31   |
| 4780               | 69.31          | 69.66  | 69.97  | 0.10              | 0.21   | 0.25   | 0.10               | 0.24   | 0.28   |
| 4840               | 73.54          | 74.05  | 74.30  | 0.09              | 0.20   | 0.24   | 0.09               | 0.23   | 0.27   |
| 4900               | 77.57          | 77.87  | 78.24  | 0.08              | 0.19   | 0.23   | 0.09               | 0.23   | 0.27   |
| 5025               | 84.92          | 85.60  | 84.64  | 0.08              | 0.19   | 0.23   | 0.10               | 0.23   | 0.27   |
| 5225               | 93.54          | 94.16  | 94.68  | 0.07              | 0.19   | 0.22   | 0.09               | 0.22   | 0.26   |
| 5500               | 101.82         | 100.21 | 104.57 | 0.07              | 0.19   | 0.22   | 0.08               | 0.21   | 0.25   |
| 5650               | 110.92         | 108.89 | 104.75 | 0.07              | 0.18   | 0.21   | 0.07               | 0.20   | 0.23   |
| 6875               | 111.35         | 98.78  | 104.15 | 0.02              | 0.14   | 0.14   | 0.06               | 0.19   | 0.20   |
| 7575               | 111.93         | 117.95 | 106.32 | 0.02              | 0.11   | 0.10   | 0.02               | 0.15   | 0.17   |
| 8000               | 119.64         | 106.65 | 100.46 | 0.03              | 0.10   | 0.09   | 0.02               | 0.16   | 0.18   |

## Typical Performance Data

| FREQ.<br><br>(MHz) | GROUP DELAY |        |        |
|--------------------|-------------|--------|--------|
|                    | (nsec)      |        |        |
|                    | @-40°C      | @+25°C | @+85°C |
| 4250               | 8.74        | 8.28   | 7.98   |
| 4252               | 8.45        | 8.00   | 7.71   |
| 4254               | 8.16        | 7.74   | 7.48   |
| 4256               | 7.89        | 7.50   | 7.26   |
| 4258               | 7.64        | 7.30   | 7.08   |
| 4260               | 7.42        | 7.12   | 6.93   |
| 4262               | 7.23        | 6.96   | 6.79   |
| 4264               | 7.06        | 6.83   | 6.69   |
| 4266               | 6.92        | 6.71   | 6.59   |
| 4268               | 6.79        | 6.62   | 6.51   |
| 4270               | 6.69        | 6.53   | 6.44   |
| 4272               | 6.60        | 6.47   | 6.39   |
| 4274               | 6.52        | 6.41   | 6.34   |
| 4276               | 6.46        | 6.36   | 6.30   |
| 4278               | 6.39        | 6.31   | 6.26   |
| 4280               | 6.35        | 6.27   | 6.23   |
| 4282               | 6.30        | 6.23   | 6.19   |
| 4284               | 6.26        | 6.20   | 6.16   |
| 4286               | 6.22        | 6.16   | 6.13   |
| 4288               | 6.18        | 6.13   | 6.10   |
| 4290               | 6.15        | 6.10   | 6.08   |
| 4292               | 6.12        | 6.08   | 6.06   |
| 4294               | 6.10        | 6.06   | 6.04   |
| 4296               | 6.07        | 6.04   | 6.02   |
| 4298               | 6.05        | 6.02   | 6.00   |
| 4300               | 6.03        | 6.00   | 6.00   |
| 4302               | 6.01        | 5.99   | 5.98   |
| 4304               | 6.00        | 5.98   | 5.98   |
| 4306               | 5.99        | 5.97   | 5.97   |
| 4308               | 5.98        | 5.98   | 5.98   |
| 4310               | 5.98        | 5.98   | 5.98   |
| 4312               | 5.99        | 5.99   | 5.99   |
| 4314               | 5.99        | 6.00   | 6.01   |
| 4316               | 6.00        | 6.01   | 6.02   |
| 4318               | 6.02        | 6.03   | 6.05   |
| 4320               | 6.04        | 6.06   | 6.07   |
| 4322               | 6.06        | 6.09   | 6.11   |
| 4324               | 6.08        | 6.12   | 6.14   |
| 4326               | 6.11        | 6.15   | 6.18   |
| 4328               | 6.15        | 6.18   | 6.22   |
| 4330               | 6.17        | 6.22   | 6.25   |
| 4332               | 6.21        | 6.26   | 6.30   |
| 4334               | 6.25        | 6.30   | 6.35   |
| 4336               | 6.29        | 6.35   | 6.40   |
| 4338               | 6.33        | 6.40   | 6.46   |
| 4340               | 6.37        | 6.45   | 6.53   |
| 4342               | 6.42        | 6.52   | 6.61   |
| 4344               | 6.48        | 6.59   | 6.69   |
| 4346               | 6.55        | 6.68   | 6.79   |
| 4348               | 6.62        | 6.77   | 6.91   |
| 4350               | 6.71        | 6.89   | 7.04   |