

# LTCC High Pass Filter

# HFHKL-4600+

## Typical Performance Data

| FREQUENCY<br>(GHz) | INSERTION LOSS<br>(dB) |        |         | RETURN LOSS<br>(dB) |        |         |
|--------------------|------------------------|--------|---------|---------------------|--------|---------|
|                    | @-55°C                 | @+25°C | @+125°C | @-55°C              | @+25°C | @+125°C |
| 0.05               | 88.41                  | 86.53  | 86.76   | 0.05                | 0.08   | 0.13    |
| 0.10               | 82.68                  | 82.48  | 81.82   | 0.08                | 0.11   | 0.16    |
| 0.20               | 77.79                  | 77.34  | 77.66   | 0.12                | 0.15   | 0.21    |
| 0.30               | 75.04                  | 74.37  | 74.78   | 0.14                | 0.18   | 0.24    |
| 0.40               | 73.18                  | 72.43  | 72.22   | 0.16                | 0.20   | 0.27    |
| 0.50               | 70.74                  | 70.65  | 70.55   | 0.17                | 0.22   | 0.28    |
| 0.60               | 69.21                  | 69.64  | 69.33   | 0.18                | 0.22   | 0.29    |
| 0.70               | 68.44                  | 68.09  | 68.57   | 0.18                | 0.23   | 0.29    |
| 0.80               | 67.87                  | 67.52  | 67.78   | 0.18                | 0.22   | 0.29    |
| 0.90               | 67.35                  | 67.32  | 67.55   | 0.17                | 0.21   | 0.27    |
| 1.00               | 67.02                  | 66.97  | 67.16   | 0.16                | 0.20   | 0.26    |
| 1.10               | 67.10                  | 66.77  | 67.04   | 0.15                | 0.19   | 0.25    |
| 1.20               | 67.24                  | 67.05  | 67.04   | 0.14                | 0.18   | 0.24    |
| 1.30               | 67.72                  | 67.45  | 67.74   | 0.12                | 0.16   | 0.22    |
| 1.40               | 68.31                  | 68.39  | 68.62   | 0.10                | 0.13   | 0.20    |
| 1.60               | 71.64                  | 72.09  | 72.85   | 0.07                | 0.11   | 0.18    |
| 1.80               | 88.82                  | 91.28  | 88.79   | 0.03                | 0.08   | 0.15    |
| 2.00               | 68.96                  | 68.22  | 67.50   | 0.02                | 0.07   | 0.15    |
| 2.20               | 61.00                  | 60.43  | 59.84   | 0.00                | 0.06   | 0.15    |
| 2.40               | 55.17                  | 54.66  | 54.16   | 0.02                | 0.08   | 0.18    |
| 2.60               | 50.26                  | 49.81  | 49.24   | 0.04                | 0.11   | 0.21    |
| 2.80               | 45.75                  | 45.28  | 44.75   | 0.08                | 0.16   | 0.28    |
| 3.00               | 41.37                  | 40.84  | 40.25   | 0.16                | 0.25   | 0.35    |
| 3.20               | 36.94                  | 36.35  | 35.72   | 0.23                | 0.32   | 0.44    |
| 3.40               | 32.33                  | 31.67  | 30.95   | 0.32                | 0.41   | 0.54    |
| 3.60               | 27.46                  | 26.72  | 25.89   | 0.41                | 0.51   | 0.65    |
| 3.80               | 22.22                  | 21.36  | 20.38   | 0.51                | 0.63   | 0.82    |
| 4.00               | 16.52                  | 15.54  | 14.41   | 0.73                | 0.90   | 1.21    |
| 4.20               | 10.32                  | 9.29   | 8.17    | 1.45                | 1.89   | 2.67    |
| 4.40               | 4.50                   | 3.86   | 3.37    | 4.61                | 6.16   | 8.84    |
| 4.60               | 1.66                   | 1.68   | 1.87    | 20.48               | 33.48  | 22.94   |
| 4.80               | 1.36                   | 1.48   | 1.71    | 13.59               | 12.75  | 12.20   |
| 5.00               | 1.34                   | 1.40   | 1.56    | 10.69               | 10.83  | 11.29   |
| 5.20               | 1.18                   | 1.21   | 1.34    | 11.18               | 11.68  | 12.65   |
| 5.40               | 0.97                   | 1.00   | 1.13    | 13.35               | 14.16  | 15.60   |
| 5.60               | 0.80                   | 0.83   | 0.98    | 16.91               | 18.11  | 20.04   |
| 5.80               | 0.68                   | 0.73   | 0.89    | 22.16               | 23.61  | 23.80   |
| 6.00               | 0.62                   | 0.67   | 0.85    | 24.19               | 23.41  | 20.87   |
| 6.20               | 0.60                   | 0.66   | 0.83    | 19.58               | 18.77  | 17.46   |
| 6.40               | 0.61                   | 0.67   | 0.84    | 16.49               | 15.97  | 15.36   |
| 6.60               | 0.63                   | 0.69   | 0.84    | 14.36               | 14.12  | 14.11   |
| 6.80               | 0.67                   | 0.72   | 0.85    | 13.16               | 13.06  | 13.38   |
| 7.00               | 0.71                   | 0.74   | 0.86    | 12.47               | 12.50  | 13.08   |
| 7.20               | 0.74                   | 0.76   | 0.87    | 12.01               | 12.15  | 12.84   |
| 7.40               | 0.76                   | 0.77   | 0.88    | 12.01               | 12.23  | 12.94   |
| 7.60               | 0.77                   | 0.77   | 0.88    | 12.04               | 12.33  | 13.01   |
| 7.80               | 0.76                   | 0.75   | 0.87    | 12.52               | 12.89  | 13.50   |
| 8.00               | 0.75                   | 0.73   | 0.85    | 12.84               | 13.32  | 13.96   |
| 8.50               | 0.68                   | 0.66   | 0.76    | 14.63               | 15.50  | 16.42   |
| 9.00               | 0.59                   | 0.58   | 0.68    | 17.84               | 18.93  | 20.48   |
| 9.50               | 0.51                   | 0.53   | 0.62    | 22.53               | 23.24  | 25.70   |
| 10.00              | 0.46                   | 0.48   | 0.59    | 28.93               | 29.13  | 32.99   |
| 10.50              | 0.42                   | 0.44   | 0.58    | 44.46               | 47.86  | 38.55   |
| 11.00              | 0.43                   | 0.43   | 0.59    | 27.75               | 28.15  | 30.14   |
| 11.50              | 0.48                   | 0.48   | 0.63    | 24.12               | 25.23  | 28.49   |
| 12.00              | 0.53                   | 0.52   | 0.67    | 24.92               | 25.93  | 28.60   |
| 12.50              | 0.53                   | 0.54   | 0.68    | 26.14               | 26.70  | 28.79   |
| 13.00              | 0.53                   | 0.55   | 0.70    | 26.51               | 28.19  | 31.43   |
| 13.50              | 0.58                   | 0.60   | 0.78    | 27.98               | 32.21  | 27.09   |
| 14.00              | 0.74                   | 0.73   | 0.94    | 27.90               | 25.06  | 21.47   |
| 14.50              | 0.94                   | 0.93   | 1.12    | 20.36               | 18.55  | 17.93   |
| 15.00              | 1.12                   | 1.12   | 1.29    | 16.14               | 15.35  | 15.38   |
| 15.50              | 1.20                   | 1.21   | 1.39    | 14.23               | 14.36  | 14.48   |