

HRHP-4170 PP

| GlassFabric | R/C | Thickness | | Dk | | | | Df | | | |
|-------------|-----|-----------|------|------|------|------|-------|-------|-------|-------|-------|
| | | mm | mil | 1GHz | 2GHz | 5GHz | 10GHz | 1GHz | 2GHz | 5GHz | 10GHz |
| 106 | 72% | 0.049 | 1.94 | 3.99 | 3.99 | 3.94 | 3.91 | 0.019 | 0.019 | 0.020 | 0.021 |
| 106 | 73% | 0.052 | 2.03 | 3.97 | 3.97 | 3.92 | 3.89 | 0.019 | 0.019 | 0.020 | 0.021 |
| 106 | 74% | 0.054 | 2.11 | 3.94 | 3.94 | 3.89 | 3.86 | 0.019 | 0.019 | 0.020 | 0.021 |
| 106 | 75% | 0.056 | 2.20 | 3.92 | 3.92 | 3.87 | 3.84 | 0.020 | 0.020 | 0.021 | 0.022 |
| 106 | 76% | 0.059 | 2.30 | 3.90 | 3.90 | 3.85 | 3.82 | 0.020 | 0.020 | 0.021 | 0.022 |
| 106 | 78% | 0.065 | 2.55 | 3.85 | 3.85 | 3.80 | 3.77 | 0.020 | 0.020 | 0.021 | 0.022 |
| 1067 | 70% | 0.057 | 2.24 | 4.04 | 4.04 | 3.99 | 3.96 | 0.019 | 0.019 | 0.020 | 0.021 |
| 1067 | 72% | 0.062 | 2.44 | 3.99 | 3.99 | 3.94 | 3.91 | 0.019 | 0.019 | 0.020 | 0.021 |
| 1067 | 74% | 0.067 | 2.64 | 3.94 | 3.94 | 3.89 | 3.86 | 0.019 | 0.019 | 0.020 | 0.021 |
| 1067 | 75% | 0.070 | 2.76 | 3.92 | 3.92 | 3.87 | 3.84 | 0.020 | 0.020 | 0.021 | 0.022 |
| 1080 | 62% | 0.070 | 2.76 | 4.23 | 4.23 | 4.18 | 4.15 | 0.018 | 0.018 | 0.019 | 0.020 |
| 1080 | 63% | 0.072 | 2.83 | 4.20 | 4.20 | 4.15 | 4.12 | 0.018 | 0.018 | 0.019 | 0.020 |
| 1080 | 65% | 0.077 | 3.03 | 4.16 | 4.16 | 4.11 | 4.08 | 0.019 | 0.019 | 0.020 | 0.021 |
| 1080 | 66% | 0.079 | 3.13 | 4.13 | 4.13 | 4.08 | 4.05 | 0.019 | 0.019 | 0.020 | 0.021 |
| 1080 | 67% | 0.082 | 3.22 | 4.11 | 4.11 | 4.06 | 4.03 | 0.019 | 0.019 | 0.020 | 0.021 |
| 1080 | 68% | 0.085 | 3.35 | 4.09 | 4.09 | 4.04 | 4.01 | 0.019 | 0.019 | 0.020 | 0.021 |
| 1080 | 70% | 0.091 | 3.59 | 4.04 | 4.04 | 3.99 | 3.96 | 0.019 | 0.019 | 0.020 | 0.021 |
| 3313 | 55% | 0.095 | 3.74 | 4.39 | 4.39 | 4.34 | 4.31 | 0.018 | 0.018 | 0.019 | 0.020 |

| | | | | | | | | | | | |
|------|-----|-------|------|------|------|------|------|-------|-------|-------|-------|
| 3313 | 56% | 0.098 | 3.86 | 4.37 | 4.37 | 4.32 | 4.29 | 0.018 | 0.018 | 0.019 | 0.020 |
| 3313 | 58% | 0.103 | 4.06 | 4.32 | 4.32 | 4.27 | 4.24 | 0.018 | 0.018 | 0.019 | 0.020 |
| 3313 | 60% | 0.109 | 4.29 | 4.27 | 4.27 | 4.22 | 4.19 | 0.018 | 0.018 | 0.019 | 0.020 |
| 2113 | 58% | 0.100 | 3.94 | 4.32 | 4.32 | 4.27 | 4.24 | 0.018 | 0.018 | 0.019 | 0.020 |
| 2116 | 50% | 0.109 | 4.30 | 4.51 | 4.51 | 4.46 | 4.43 | 0.017 | 0.017 | 0.018 | 0.019 |
| 2116 | 52% | 0.115 | 4.53 | 4.46 | 4.46 | 4.41 | 4.38 | 0.017 | 0.017 | 0.018 | 0.019 |
| 2116 | 53% | 0.118 | 4.65 | 4.44 | 4.44 | 4.39 | 4.36 | 0.017 | 0.017 | 0.018 | 0.019 |
| 2116 | 54% | 0.121 | 4.77 | 4.42 | 4.42 | 4.37 | 4.34 | 0.017 | 0.017 | 0.018 | 0.019 |
| 2116 | 55% | 0.124 | 4.89 | 4.39 | 4.39 | 4.34 | 4.31 | 0.018 | 0.018 | 0.019 | 0.020 |
| 2116 | 56% | 0.128 | 5.02 | 4.37 | 4.37 | 4.32 | 4.29 | 0.018 | 0.018 | 0.019 | 0.020 |
| 2116 | 57% | 0.131 | 5.17 | 4.34 | 4.34 | 4.29 | 4.26 | 0.018 | 0.018 | 0.019 | 0.020 |
| 2116 | 58% | 0.135 | 5.31 | 4.32 | 4.32 | 4.27 | 4.24 | 0.018 | 0.018 | 0.019 | 0.020 |
| 2116 | 60% | 0.143 | 5.64 | 4.27 | 4.27 | 4.22 | 4.19 | 0.018 | 0.018 | 0.019 | 0.020 |
| 1506 | 45% | 0.152 | 5.99 | 4.63 | 4.63 | 4.58 | 4.55 | 0.017 | 0.017 | 0.018 | 0.019 |
| 1506 | 48% | 0.164 | 6.44 | 4.56 | 4.56 | 4.51 | 4.48 | 0.017 | 0.017 | 0.018 | 0.019 |
| 1506 | 50% | 0.172 | 6.76 | 4.51 | 4.51 | 4.46 | 4.43 | 0.017 | 0.017 | 0.018 | 0.019 |
| 1506 | 52% | 0.180 | 7.09 | 4.46 | 4.46 | 4.41 | 4.38 | 0.017 | 0.017 | 0.018 | 0.019 |
| 7628 | 43% | 0.185 | 7.30 | 4.68 | 4.68 | 4.63 | 4.60 | 0.016 | 0.016 | 0.017 | 0.018 |
| 7628 | 45% | 0.193 | 7.61 | 4.63 | 4.63 | 4.58 | 4.55 | 0.017 | 0.017 | 0.018 | 0.019 |
| 7628 | 46% | 0.199 | 7.81 | 4.60 | 4.60 | 4.55 | 4.52 | 0.017 | 0.017 | 0.018 | 0.019 |
| 7628 | 47% | 0.203 | 7.99 | 4.58 | 4.58 | 4.53 | 4.50 | 0.017 | 0.017 | 0.018 | 0.019 |

| | | | | | | | | | | | |
|------|-----|-------|------|------|------|------|------|-------|-------|-------|-------|
| 7628 | 48% | 0.208 | 8.19 | 4.56 | 4.56 | 4.51 | 4.48 | 0.017 | 0.017 | 0.018 | 0.019 |
| 7628 | 50% | 0.218 | 8.59 | 4.51 | 4.51 | 4.46 | 4.43 | 0.017 | 0.017 | 0.018 | 0.019 |
| 7628 | 51% | 0.224 | 8.81 | 4.49 | 4.49 | 4.44 | 4.41 | 0.017 | 0.017 | 0.018 | 0.019 |

注：1、以上单张理论厚度为100%残铜压合厚度经验值。此厚度会受到压机类型、压合程式、缓冲材料类型等因素影响，仅供参考；客户工程设计系统中所使用数据建议进行PP压合厚度data base确认。

2、上表中Dk(1G)为基于IPC-TM-650 2.5.5.9量测数据，与PCB阻抗使用之反推Dk有所差异，不可直接使用。

HRH-4170 CCL

| Nominal Thickness | | G/F Type | R/C | Dk | | | | Df | | | |
|-------------------|-----|----------|-----|------|------|------|-------|-------|-------|-------|-------|
| mm | mil | | | 1GHz | 2GHz | 5GHz | 10GHz | 1GHz | 2GHz | 5GHz | 10GHz |
| 0.05 | 2 | 1*106 | 75 | 3.97 | 3.97 | 3.92 | 3.89 | 0.019 | 0.019 | 0.020 | 0.021 |
| 0.076 | 3 | 1*1080 | 66 | 4.16 | 4.16 | 4.11 | 4.08 | 0.019 | 0.019 | 0.020 | 0.021 |
| 0.1 | 4 | 1*2116 | 48 | 4.56 | 4.56 | 4.51 | 4.48 | 0.017 | 0.017 | 0.018 | 0.019 |
| 0.11 | 4.5 | 1*2116 | 53 | 4.49 | 4.49 | 4.44 | 4.41 | 0.017 | 0.017 | 0.018 | 0.019 |
| 0.127 | 5 | 1*2116 | 58 | 4.37 | 4.37 | 4.32 | 4.29 | 0.018 | 0.018 | 0.019 | 0.020 |
| 0.15 | 6 | 1*1506 | 46 | 4.65 | 4.65 | 4.60 | 4.57 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.18 | 7 | 1*7628 | 43 | 4.70 | 4.70 | 4.65 | 4.62 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.2 | 8 | 1*7628 | 48 | 4.58 | 4.58 | 4.53 | 4.50 | 0.017 | 0.017 | 0.018 | 0.019 |
| 0.25 | 10 | 2*2116 | 57 | 4.37 | 4.37 | 4.32 | 4.29 | 0.018 | 0.018 | 0.019 | 0.020 |
| 0.3 | 12 | 2*1506 | 46 | 4.65 | 4.65 | 4.60 | 4.57 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.36 | 14 | 2*7628 | 43 | 4.70 | 4.70 | 4.65 | 4.62 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.38 | 15 | 2*7628 | 46 | 4.65 | 4.65 | 4.60 | 4.57 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.4 | 16 | 2*7628 | 48 | 4.58 | 4.58 | 4.53 | 4.50 | 0.017 | 0.017 | 0.018 | 0.019 |

| | | | | | | | | | | | |
|---------|----|-------------------|-------|------|------|------|------|-------|-------|-------|-------|
| 0.45 | 18 | 2*7628+1* 2116 | 42/49 | 4.72 | 4.72 | 4.67 | 4.64 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.5 | 20 | 3*7628 | 43 | 4.72 | 4.72 | 4.67 | 4.64 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.53 | 21 | 3*7628 | 43 | 4.72 | 4.72 | 4.67 | 4.64 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.55 | 22 | 3*7628 | 44 | 4.70 | 4.70 | 4.65 | 4.62 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.6 | 24 | 3*7628 | 48 | 4.56 | 4.56 | 4.51 | 4.48 | 0.017 | 0.017 | 0.018 | 0.019 |
| 0.66 | 26 | 2*1506+2* 7628 | 46/43 | 4.65 | 4.65 | 4.60 | 4.57 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.71 | 28 | 4*7628 | 43 | 4.72 | 4.72 | 4.67 | 4.64 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.8 | 31 | 4*7628 | 46 | 4.65 | 4.65 | 4.60 | 4.57 | 0.016 | 0.016 | 0.017 | 0.018 |
| 0.9 | 35 | 5*7628 | 43 | 4.72 | 4.72 | 4.67 | 4.64 | 0.016 | 0.016 | 0.017 | 0.018 |
| 1.0 | 39 | 5*7628 | 47 | 4.63 | 4.63 | 4.58 | 4.55 | 0.017 | 0.017 | 0.018 | 0.019 |
| 1.1 | 43 | 6*7628 | 42 | 4.72 | 4.72 | 4.67 | 4.64 | 0.016 | 0.016 | 0.017 | 0.018 |
| 1.2 | 47 | 6*7628 | 46 | 4.65 | 4.65 | 4.60 | 4.57 | 0.016 | 0.016 | 0.017 | 0.018 |
| 1.2 1/1 | 47 | 6*7628 | 45 | 4.68 | 4.68 | 4.63 | 4.60 | 0.016 | 0.016 | 0.017 | 0.018 |
| 1.3 | 52 | 7*7628 | 43 | 4.70 | 4.70 | 4.65 | 4.62 | 0.016 | 0.016 | 0.017 | 0.018 |
| 1.3 1/1 | 52 | 7*7628 | 42 | 4.72 | 4.72 | 4.67 | 4.64 | 0.016 | 0.016 | 0.017 | 0.018 |
| 1.4 | 55 | 7*7628 | 47 | 4.63 | 4.63 | 4.58 | 4.55 | 0.017 | 0.017 | 0.018 | 0.019 |
| 1.5 | 59 | 8*7628 | 44 | 4.70 | 4.70 | 4.65 | 4.62 | 0.016 | 0.016 | 0.017 | 0.018 |

备注:

- 1、上表中31mil(不含)以下厚度为不含铜厚度, 31mil(含)以上规格含铜厚度(以H/H铜箔为基准)。
- 2、上表中Dk(1G)为基板绝缘层检测数据(基于IPC-TM-650 2.5.5.9量测), 与PCB阻抗使用之反推Dk有所差异, 不可直接使用。
- 3、状态栏空白表示有生产经历, 但非常用量产规格。