

## Dielectric Constant (DK) / Dissipation Factor (DF) Table

### Core Data

| Constructions  | Resin Content % | Standard/Alternate | Thickness (inch) | Thickness (mm) | Dielectric Constant (DK) / Dissipation Factor (DF) |                |                |                |                |                |
|----------------|-----------------|--------------------|------------------|----------------|--|----------------|----------------|----------------|----------------|----------------|
|                |                 |                    |                  |                | 100 MHz  | 500 MHz        | 1 GHz          | 2 GHz          | 5 GHz          | 10 GHz         |
| 1x1080         | 60.00%          | Standard           | 0.0025           | 0.064          | 4.06<br>0.0164                                     | 3.98<br>0.0185 | 3.96<br>0.0201 | 3.93<br>0.021  | 3.81<br>0.0247 | 3.80<br>0.0248 |
| 1x1067         | 73.00%          | Alt/Spread         | 0.0025           | 0.064          | 3.84<br>0.0184                                     | 3.77<br>0.021  | 3.74<br>0.0231 | 3.70<br>0.0241 | 3.55<br>0.0287 | 3.54<br>0.0289 |
| 1x1080         | 66.00%          | Standard           | 0.003            | 0.076          | 3.96<br>0.0173                                     | 3.89<br>0.0197 | 3.86<br>0.0215 | 3.82<br>0.0224 | 3.68<br>0.0266 | 3.68<br>0.0267 |
| 1x1086         | 61.00%          | Alt/Spread         | 0.003            | 0.076          | 4.04<br>0.0166                                     | 3.97<br>0.0187 | 3.94<br>0.0204 | 3.91<br>0.0213 | 3.78<br>0.025  | 3.78<br>0.0252 |
| 1x3313         | 52.00%          | Alternate          | 0.0035           | 0.089          | 4.20<br>0.0152                                     | 4.13<br>0.017  | 4.11<br>0.0183 | 4.09<br>0.0191 | 3.97<br>0.0222 | 3.98<br>0.0223 |
| 1x2113         | 54.00%          | Standard           | 0.0035           | 0.089          | 4.19<br>0.0155                                     | 4.10<br>0.0174 | 4.07<br>0.0188 | 4.04<br>0.0195 | 3.92<br>0.0229 | 3.92<br>0.023  |
| 2x106          | 68.00%          | Standard           | 0.0035           | 0.089          | 3.92<br>0.0136                                     | 3.88<br>0.0154 | 3.86<br>0.0177 | 3.84<br>0.0185 | 3.69<br>0.019  | 3.69<br>0.019  |
| 1x2116         | 48.00%          | Standard           | 0.004            | 0.102          | 4.28<br>0.0145                                     | 4.21<br>0.0162 | 4.20<br>0.0175 | 4.18<br>0.0181 | 4.05<br>0.021  | 4.05<br>0.0211 |
| 1x3313         | 57.00%          | Alternate          | 0.004            | 0.102          | 4.11<br>0.016                                      | 4.04<br>0.0179 | 4.03<br>0.0194 | 3.99<br>0.0203 | 3.86<br>0.0238 | 3.86<br>0.0238 |
| 2x106          | 72.00%          | Standard           | 0.004            | 0.102          | 3.86<br>0.0183                                     | 3.78<br>0.0208 | 3.76<br>0.0228 | 3.72<br>0.0238 | 3.57<br>0.0284 | 3.56<br>0.0285 |
| 1x2116         | 53.00%          | Standard           | 0.0045           | 0.114          | 4.18<br>0.0153                                     | 4.11<br>0.0172 | 4.10<br>0.0185 | 4.07<br>0.0193 | 3.94<br>0.0225 | 3.94<br>0.0226 |
| 1x106 / 1x1080 | 65.00%          | Alternate          | 0.0045           | 0.114          | 3.97<br>0.0172                                     | 3.90<br>0.0195 | 3.87<br>0.0213 | 3.84<br>0.0222 | 3.70<br>0.0262 | 3.70<br>0.0264 |

| Constructions     | Resin Content % | Standard/Alternate | Thickness (inch) | Thickness (mm) | Dielectric Constant (DK) / Dissipation Factor (DF) |                |                |                |                |                |
|-------------------|-----------------|--------------------|------------------|----------------|--|----------------|----------------|----------------|----------------|----------------|
|                   |                 |                    |                  |                | 100 MHz  | 500 MHz        | 1 GHz          | 2 GHz          | 5 GHz          | 10 GHz         |
| 1x2116            | 57.00%          | Standard           | 0.005            | 0.127          | 4.11<br>0.016                                      | 4.04<br>0.0179 | 4.03<br>0.0194 | 3.99<br>0.0203 | 3.86<br>0.0238 | 3.86<br>0.0238 |
| 2x1080            | 60.00%          | Standard           | 0.005            | 0.127          | 4.06<br>0.0164                                     | 3.98<br>0.0185 | 3.96<br>0.0201 | 3.93<br>0.021  | 3.81<br>0.0247 | 3.80<br>0.0248 |
| 2x1067            | 73.00%          | Alt/Spread         | 0.005            | 0.127          | 3.84<br>0.0184                                     | 3.77<br>0.021  | 3.74<br>0.0231 | 3.70<br>0.0241 | 3.55<br>0.0287 | 3.54<br>0.0289 |
| 2x1080            | 63.00%          | Alternate          | 0.0055           | 0.140          | 4.00<br>0.0169                                     | 3.93<br>0.0191 | 3.91<br>0.0208 | 3.87<br>0.0218 | 3.74<br>0.0257 | 3.74<br>0.0257 |
| 1x106 /<br>1x2113 | 60.00%          | Alternate          | 0.0055           | 0.140          | 4.06<br>0.0164                                     | 3.98<br>0.0185 | 3.96<br>0.0201 | 3.93<br>0.021  | 3.81<br>0.0247 | 3.80<br>0.0248 |
| 1x1652            | 52.00%          | Standard           | 0.006            | 0.152          | 4.20<br>0.0152                                     | 4.13<br>0.017  | 4.11<br>0.0183 | 4.09<br>0.0191 | 3.97<br>0.0222 | 3.98<br>0.0223 |
| 2x1080            | 65.00%          | Standard           | 0.006            | 0.152          | 3.97<br>0.0172                                     | 3.90<br>0.0195 | 3.87<br>0.0213 | 3.84<br>0.0222 | 3.70<br>0.0262 | 3.70<br>0.0264 |
| 2x1086            | 61.00%          | Alt/Spread         | 0.006            | 0.152          | 4.04<br>0.0166                                     | 3.97<br>0.0187 | 3.94<br>0.0204 | 3.91<br>0.0213 | 3.78<br>0.025  | 3.78<br>0.0252 |
| 1x7628            | 43.00%          | Alternate          | 0.007            | 0.178          | 4.38<br>0.0138                                     | 4.32<br>0.0152 | 4.31<br>0.0164 | 4.27<br>0.017  | 4.16<br>0.0196 | 4.15<br>0.0197 |
| 2x2113            | 54.00%          | Alternate          | 0.007            | 0.178          | 4.19<br>0.0155                                     | 4.10<br>0.0174 | 4.07<br>0.0188 | 4.04<br>0.0195 | 3.92<br>0.0229 | 3.92<br>0.023  |
| 2x3313            | 52.00%          | Alternate          | 0.007            | 0.178          | 4.20<br>0.0152                                     | 4.13<br>0.017  | 4.11<br>0.0183 | 4.09<br>0.0191 | 3.97<br>0.0222 | 3.98<br>0.0223 |
| 1x7628            | 46.00%          | Alternate          | 0.0075           | 0.191          | 4.32<br>0.0142                                     | 4.27<br>0.0158 | 4.24<br>0.017  | 4.21<br>0.0177 | 4.10<br>0.0204 | 4.10<br>0.0205 |
| 1x7628            | 48.00%          | Standard           | 0.008            | 0.203          | 4.28<br>0.0145                                     | 4.21<br>0.0162 | 4.20<br>0.0175 | 4.18<br>0.0181 | 4.05<br>0.021  | 4.05<br>0.0211 |
| 2x2116            | 48.00%          | Standard           | 0.008            | 0.203          | 4.28<br>0.0145                                     | 4.21<br>0.0162 | 4.20<br>0.0175 | 4.18<br>0.0181 | 4.05<br>0.021  | 4.05<br>0.0211 |
| 2x3313            | 57.00%          | Alternate          | 0.008            | 0.203          | 4.11<br>0.016                                      | 4.04<br>0.0179 | 4.03<br>0.0194 | 3.99<br>0.0203 | 3.86<br>0.0238 | 3.86<br>0.0238 |
| 2x2116            | 53.00%          | Alternate          | 0.009            | 0.229          | 4.18<br>0.0153                                     | 4.11<br>0.0172 | 4.10<br>0.0185 | 4.07<br>0.0193 | 3.94<br>0.0225 | 3.94<br>0.0226 |

| Constructions      | Resin Content % | Standard/Alternate | Thickness (inch) | Thickness (mm) | Dielectric Constant (DK) / Dissipation Factor (DF) |                |                |                |                |                |
|--------------------|-----------------|--------------------|------------------|----------------|--|----------------|----------------|----------------|----------------|----------------|
|                    |                 |                    |                  |                | 100 MHz  | 500 MHz        | 1 GHz          | 2 GHz          | 5 GHz          | 10 GHz         |
| 2x2116             | 57.00%          | Standard           | 0.01             | 0.254          | 4.11<br>0.016                                      | 4.04<br>0.0179 | 4.03<br>0.0194 | 3.99<br>0.0203 | 3.86<br>0.0238 | 3.86<br>0.0238 |
| 2x1652             | 52.00%          | Standard           | 0.012            | 0.305          | 4.20<br>0.0152                                     | 4.13<br>0.017  | 4.11<br>0.0183 | 4.09<br>0.0191 | 3.97<br>0.0222 | 3.98<br>0.0223 |
| 3x2116             | 48.00%          | Alternate          | 0.012            | 0.305          | 4.28<br>0.0145                                     | 4.21<br>0.0162 | 4.20<br>0.0175 | 4.18<br>0.0181 | 4.05<br>0.021  | 4.05<br>0.0211 |
| 2x7628             | 43.00%          | Standard           | 0.014            | 0.356          | 4.38<br>0.0138                                     | 4.32<br>0.0152 | 4.31<br>0.0164 | 4.27<br>0.017  | 4.16<br>0.0196 | 4.15<br>0.0197 |
| 2x7628             | 47.00%          | Standard           | 0.016            | 0.406          | 4.33<br>0.0142                                     | 4.30<br>0.0158 | 4.28<br>0.017  | 4.26<br>0.0177 | 4.16<br>0.0204 | 4.16<br>0.0205 |
| 2x7628 /<br>1x2116 | 44.00%          | Standard           | 0.018            | 0.457          | 4.36<br>0.0139                                     | 4.30<br>0.0154 | 4.29<br>0.0166 | 4.25<br>0.0172 | 4.14<br>0.0198 | 4.13<br>0.0199 |
| 3x7628             | 43.00%          | Standard           | 0.021            | 0.533          | 4.38<br>0.0138                                     | 4.32<br>0.0152 | 4.31<br>0.0164 | 4.27<br>0.017  | 4.16<br>0.0196 | 4.15<br>0.0197 |
| 3x7628             | 45.00%          | Standard           | 0.024            | 0.610          | 4.31<br>0.0142                                     | 4.30<br>0.016  | 4.26<br>0.0175 | 4.24<br>0.0184 | 4.15<br>0.0218 | 4.15<br>0.0218 |
| 4x7628             | 43.00%          | Standard           | 0.028            | 0.711          | 4.38<br>0.0138                                     | 4.32<br>0.0152 | 4.31<br>0.0164 | 4.27<br>0.017  | 4.16<br>0.0196 | 4.15<br>0.0197 |
| 4x7628             | 45.00%          | Standard           | 0.031            | 0.787          | 4.31<br>0.0142                                     | 4.30<br>0.016  | 4.26<br>0.0175 | 4.24<br>0.0184 | 4.15<br>0.0218 | 4.15<br>0.0218 |
| 5x7628             | 43.00%          | Alternate          | 0.035            | 0.889          | 4.38<br>0.0138                                     | 4.32<br>0.0152 | 4.31<br>0.0164 | 4.27<br>0.017  | 4.16<br>0.0196 | 4.15<br>0.0197 |
| 8x7628             | 43.00%          | Alternate          | 0.059            | 1.499          | 4.38<br>0.0138                                     | 4.32<br>0.0152 | 4.31<br>0.0164 | 4.27<br>0.017  | 4.16<br>0.0196 | 4.15<br>0.0197 |

## NOTE

"Standard" indicates available in all regions

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## Dielectric Constant (DK) / Dissipation Factor (DF) Table

### Prepreg Data

| Glass Style | Resin Content % | Standard/Alternate | Thickness (inch) | Thickness (mm) | Dielectric Constant (DK) / Dissipation Factor (DF) |               |               |               |               |               |
|-------------|-----------------|--------------------|------------------|----------------|--|---------------|---------------|---------------|---------------|---------------|
|             |                 |                    |                  |                | 100 MHz  | 500 MHz       | 1 GHz         | 2 GHz         | 5 GHz         | 10 GHz        |
| 1067        | 71.00%          | Alt/Spread         | 0.0023           | 0.058          | 3.88<br>0.018                                      | 3.84<br>0.021 | 3.82<br>0.023 | 3.79<br>0.024 | 3.65<br>0.028 | 3.65<br>0.028 |
| 106         | 77.00%          | Standard           | 0.0025           | 0.064          | 3.79<br>0.019                                      | 3.71<br>0.022 | 3.69<br>0.024 | 3.65<br>0.025 | 3.50<br>0.03  | 3.49<br>0.03  |
| 1086        | 64.00%          | Alt/Spread         | 0.0032           | 0.081          | 3.99<br>0.017                                      | 3.96<br>0.019 | 3.94<br>0.021 | 3.91<br>0.022 | 3.78<br>0.026 | 3.78<br>0.026 |
| 1080        | 67.00%          | Standard           | 0.0032           | 0.081          | 3.94<br>0.017                                      | 3.86<br>0.02  | 3.84<br>0.022 | 3.78<br>0.023 | 3.66<br>0.027 | 3.66<br>0.027 |
| 1080        | 72.00%          | Alternate          | 0.0039           | 0.099          | 3.86<br>0.018                                      | 3.78<br>0.021 | 3.76<br>0.023 | 3.72<br>0.024 | 3.57<br>0.028 | 3.56<br>0.029 |
| 2113        | 60.00%          | Standard           | 0.0042           | 0.107          | 4.06<br>0.016                                      | 3.98<br>0.019 | 3.96<br>0.02  | 3.93<br>0.021 | 3.81<br>0.025 | 3.80<br>0.025 |
| 3313        | 60.00%          | Alternate          | 0.0044           | 0.112          | 4.06<br>0.016                                      | 3.98<br>0.019 | 3.96<br>0.02  | 3.93<br>0.021 | 3.81<br>0.025 | 3.80<br>0.025 |
| 2116        | 57.00%          | Standard           | 0.0051           | 0.13           | 4.11<br>0.016                                      | 4.04<br>0.018 | 4.03<br>0.019 | 3.99<br>0.02  | 3.86<br>0.024 | 3.86<br>0.024 |
| 1652        | 52.00%          | Alternate          | 0.006            | 0.152          | 4.20<br>0.015                                      | 4.13<br>0.017 | 4.11<br>0.018 | 4.09<br>0.019 | 3.97<br>0.022 | 3.98<br>0.023 |
| 7628        | 46.00%          | Standard           | 0.0077           | 0.196          | 4.32<br>0.014                                      | 4.27<br>0.016 | 4.24<br>0.017 | 4.21<br>0.018 | 4.10<br>0.02  | 4.10<br>0.021 |
| 7628        | 49.00%          | Alternate          | 0.0082           | 0.208          | 4.27<br>0.014                                      | 4.19<br>0.017 | 4.17<br>0.018 | 4.16<br>0.019 | 4.03<br>0.021 | 4.03<br>0.022 |

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