

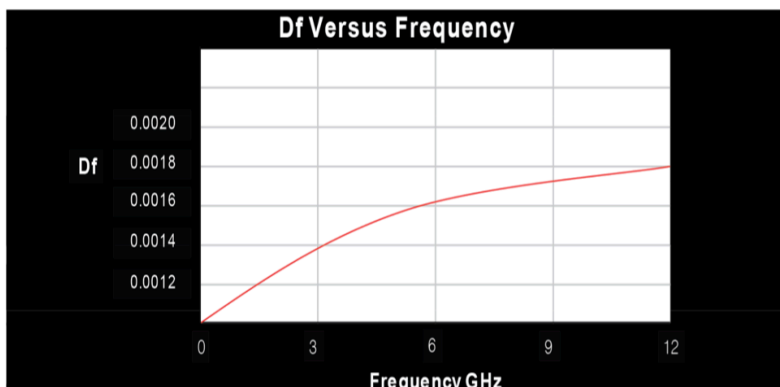
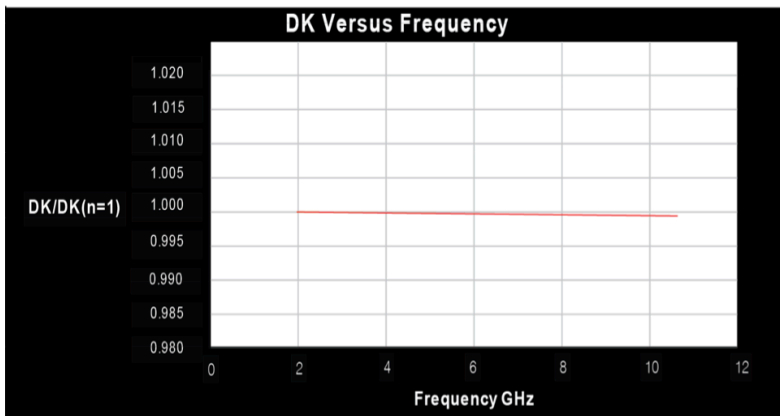
## RF-30-7H Cost Effective Antenna Laminate

RF-30-7H laminates are engineered to provide a cost effective substrate that offers the best value for the low cost, high performance demands of microwave and radio frequency antenna applications. Dielectric constant is typically offered as 2.97.

The low dissipation factor, thermal stability and smooth surface profile minimize phase shift with frequency and temperature and yield exceptionally low intermodulation performance.

### Benefits & Applications:

- Excellent PIM values in PCBs (measured at lower than -160 dBc\*)
- High Peel Strength
- Exceptionally Low Loss
- Excellent Price/Performance Ratio
- Enhanced Surface Smoothness
- Low Moisture Absorption



Measurement using manufactured PCB coupon with 20 watts per channel @ 800 and 1800 MHz.

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- Microwave Antennas
  - Radio Frequency Antennas

### RF-30-7H Typical Values

| Property                        | TestMethod                | Unit              | Value                 | Unit              | Value                 |
|---------------------------------|---------------------------|-------------------|-----------------------|-------------------|-----------------------|
| Dielectric Constant @ 1MHz      | IPC-TM 650 2.5.5.3        | -                 | 2.97                  | -                 | 2.97                  |
| Dissipation Factor @ 1.9 GHz    | IPC-TM 650 2.5.5.5.1 mod  | -                 | 0.0013                | -                 | 0.0013                |
| Dissipation Factor @ 10 GHz     | IPC-TM 650 2.5.5.5.1 Mod  | -                 | 0.0020                | -                 | 0.0020                |
| Water absorption                | IPC-TM 650 2.6.2.1        | %                 | 0.03                  | %                 | 0.03                  |
| Peel Strength (1 oz. RT copper) | IPC-TM 650 2.4.8          | Lbs./inch         | 12                    | N/mm              | 2.1                   |
| Volume Resistivity              | IPC-TM 650 2.5.17.1       | Mohm-cm           | 1.0 x 10 <sup>9</sup> | Mohm-cm           | 1.0 x 10 <sup>9</sup> |
| Surface Resistivity             | IPC-TM 650 2.5.17.1       | Mohm              | 5.0 x 10 <sup>8</sup> | Mohm              | 5.0 x 10 <sup>8</sup> |
| Flexural Strength (MD)          | IPC-TM 650 2.4.4          | psi               | 11,167                | N/mm <sup>2</sup> | 77                    |
| Flexural Strength (CD)          | IPC-TM 650 2.4.4          | psi               | 8,267                 | N/mm <sup>2</sup> | 57                    |
| Flexural Modulus (MD)           | IPC-TM 650 2.4.4          | psi               | 168,244               | N/mm <sup>2</sup> | 1,160                 |
| Flexural Modulus (CD)           | IPC-TM 650 2.4.4          | psi               | 185,648               | N/mm <sup>2</sup> | 1,280                 |
| Tensile Strength (MD)           | IPC-TM-650 2.4.18.3       | psi               | 10,732                | N/mm <sup>2</sup> | 74                    |
| Tensile Strength (CD)           | IPC-TM-650 2.4.18.3       | psi               | 7,687                 | N/mm <sup>2</sup> | 53                    |
| Tensile Modulus (MD)            | IPC-TM-650 2.4.18.3       | psi               | 800,611               | N/mm <sup>2</sup> | 5,520                 |
| Tensile Modulus (CD)            | IPC-TM-650 2.4.18.3       | psi               | 646,870               | N/mm <sup>2</sup> | 4,460                 |
| Elongation (MD)                 | IPC-TM-650 2.4.18.3       | %                 | 2.3                   | %                 | 2.3                   |
| Elongation (CD)                 | IPC-TM-650 2.4.18.3       | %                 | 1.9                   | %                 | 1.9                   |
| Dimensional Stability           | IPC-TM-650 2.4.39(Etch)   | % (30mil-MD)      | 0.023                 | % (30mil-CD)      | 0.029                 |
| Dimensional Stability           | IPC-TM-650 2.4.39(Bake)   | % (30mil-MD)      | 0.009                 | % (30mil-CD)      | 0.016                 |
| Dimensional Stability           | IPC-TM-650 2.4.39(Stress) | % (30mil-MD)      | 0.006                 | % (30mil-CD)      | 0.012                 |
| Density                         | IPC-TM-650 2,3,5          | g/cm <sup>3</sup> | 2.28                  | g/cm <sup>3</sup> | 2.28                  |
| Thermal Conductivity            | IPC-TM-650 2.4.50         | W/m/K             | 0.3                   | W/m/K             | 0.3                   |
| x-y CTE (50 ~ 150°C)            | IPC-TM 650 2.4.41         | ppm/°C            | 17-20                 | ppm/°C            | 17-20                 |
| z CTE (50 ~ 150°C)              | IPC-TM 650 2.4.41         | ppm/°C            | 150                   | ppm/°C            | 150                   |
| Hardness (Durometer)            | ASTM D2240 (D-type)       | -                 | 82                    | -                 | 82                    |
| Flammability                    | UL-94                     | -                 | V-0                   | -                 | V-0                   |

All reported values are typical and should not be used for specification purposes. In all instances, the user shall determine suitability in any given application.

| Designation | Dk   | Typical Thicknesses |      |
|-------------|------|---------------------|------|
|             |      | Inches              | mm   |
| RF-30-7H    | 2.97 | 0.0300              | 0.76 |
|             |      | 0.0600              | 1.52 |

| Available Sheet Sizes |            |
|-----------------------|------------|
| Inches                | mm         |
| 12 x 18               | 305 x 457  |
| 16 x 18               | 406 x 457  |
| 18 x 24               | 457 x 610  |
| 16 x 36               | 406 x 914  |
| 24 x 36               | 610 x 914  |
| 18 x 48               | 457 x 1220 |

Standard sheet size is 36" x 48" (914 mm x 1220 mm). Please call for availability of other sizes.

Please see our Product Selector Guide for information on available copper cladding.

An example of our part number is: **RF-30-7H-0300-CL1/CL1 - 18" x 24" (457 mm x 610 mm)**

