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**NAN YA PLASTICS CORPORATION**
ELECTRONIC MATERIALS DIVISION.
**COPPER CLAD LAMINATE DEPARTMENT**
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**Glass cloth base modified resin flame retardant copper clad laminate**

# NP-530

## ■ FEATURES

- Low dielectric constant and low dissipation factor at high frequency range
- Greater design flexibility by allowing the same impedance
- Suit for Antenna、Base station、 PA and LNB application
- Excellent dimensional stability

## ■ PERFORMANCE LIST

| Characteristics | | Unit | Conditioning | Typical Values | SPEC | Test Method |
|---|---|---|---|---|---|---|
| Permittivity | Process | - | 10GHz/23℃ | 3.08 | - | 2.5.5.5 |
| | Design | - | - | 2.98 | | Differential phase length |
| Loss Tangent | | - | 10GHz/23℃ | 0.0030 | - | 2.5.5.5 |
| | | | | 0.0029 | | SPDR |
| Volume resistivity | | MΩ-cm | C-96/35/90 | $4x\ 10^8$~$5 x\ 10^9$ | $10^6$ ↑ | 2.5.17 |
| Surface resistivity | | MΩ | C-96/35/90 | $5 x\ 10^7$~$5 x\ 10^8$ | $10^4$ ↑ | 2.5.17 |
| Arc resistance | | SEC | D-48/50+D-0.5/23 | 120↑ | 60 ↑ | 2.5.1 |
| Dielectric breakdown | | KV | D-48/50 | 60 ↑ | 40 ↑ | 2.5.6 |
| Moisture absorption | | % | D-24/23 | 0.01~0.02 | 0.35 ↓ | 2.6.2.1 |
| Flammability | | - | C-48/23/50 | 94V0 | 94V0 | UL94 |
| Peel strength 1 oz | | lb/in | 288℃x10" solder floating | 6~8 | - | 2.4.8 |
| Thermal stress | | SEC | 288℃ dipping | 300 ↑ | 10 ↑ | 2.4.13.1 |
| Pressure cooker **2 hr** (2 atm 121℃) | | SEC | 288℃ dipping | 300 ↑ | N/A | - |
| Dimensional stability X-Y axis | | % | E-0.5/170 | 0.010-0.030 | 0.050 ↓ | 2.4.39 |
| Coefficient of thermal expansion Z-axis before Tg | | ppm/℃ | TMA | 20-30 | N/A | 2.4.24 |
| Glass transition temp | | ℃ | DMA | 230 | N/A | 2.4.25 |
| Td (5% weight loss) | | ℃ | TGA, 10℃/min | 420 | 325 ↑ | - |

Data shown are nominal values for reference only.

**NOTE:**
The average value in the table refers to samples of .0307" 1/1.
Test method per IPC-TM-650

## ■ PRODUCT SIZE & THICKNESS

| THICKNESS INCH (mm) | **THICKNESS TOLERANCE** | COPPER CLADDING OZ (μm) | SIZE INCH | SIZE mm |
|---|---|---|---|---|
| 0.0057"(0.145) | ±0.0007"(0.018) | 0.5 (17) HTE,RTF<br>1.0 (35) HTE,RTF | 49 x 37<br>49 x 41.1<br>49 x 43 | 1245 x 0940<br>1245 x 1045<br>1245 x 1092 |
| 0.0107"(0.272) | ±0.0010"(0.025) | | | |
| 0.0207"(0.529) | ±0.0020"(0.050) | | | |
| 0.0307"(0.780) | ±0.0020"(0.050) | | | |
| 0.0407"(1.034) | ±0.0030"(0.076) | | | |
| 0.0607"(1.542) | ±0.0030"(0.076) | | | |

＊Use resin coating copper, need to plasma after desmear process.