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|---|------------------------------|--------------------------------|----------|
| DESCRIPTION | | | |
| Insulated Metal Substrate (IMS), based on thick aluminium and clad with ED copper foil in the other side. It is designed for a reliable thermal dissipation circuitry. With a proprietary formulated reinforced-polymer-ceramic bonding layer with a high thermal conductivity, dielectric strength, and thermal endurance is guaranteed. The material is supplied with a protective film on the aluminium side to protect it against wet PCB process | | | |
| ROHS compliance directive 2002/95/EC | | | |
| STANDARD CONSTRUCTIONS | | | |
| Aluminium thickness | 1000 - 1500 - 2000 - 3000 µm | Aluminium Alloy / Treat | 5052 H18 |
| Insulation thickness | 110 - 130 µm | Dielectric thickness tolerance | ± 10 µm |
| ED copper thickness | 35 - 70 - 105 - 210 µm | | |
| Other constructions available upon request | | | |

| PROPERTIES 1500 µm Al / 130 µm dielectric / 70 µm Cu | TEST METHOD | UNITS | TYPICAL VALUES | Guaranteed values |
|--|--------------------|----------------------|-----------------|-------------------|
| Time to blister at 288°C, floating on solder (50 x 50 mm) | IEC-61189 | Sec | >120 | >120 |
| Copper Peel strength, after heat shock 20 sec/288°C | IPC-TM 650-2.4.8 | N/mm | 2,8 | >1,8 |
| Dielectric breakdown voltage, AC (1) | IPC-TM 650-2.5.6.3 | kV | 8 | 7 |
| Proof Test, DC (2) | -- | V | 3000 | 3000 |
| Thermal conductivity (dielectric layer) | ASTM-D 5470 | w/m.°K | 1,45 | 1,45 |
| Thermal impedance (dielectric layer) x 10 ⁻³ | ASTM-D 5470 | °K.m ² /w | 0,089 | 0,089 |
| Surface resistance after damp heat and recovery | IEC-61189 | MΩ | 10 ⁵ | 10 ⁵ |
| Volume resistivity after damp heat and recovery | IEC-61189 | MΩm | 10 ⁴ | 10 ⁴ |
| Relative permittivity after damp heat and recovery, 10 kHz | IEC-61189 | - | 4,5 | 4,5 |
| Dissipation factor after damp heat and recovery 10 kHz | IEC-61189 | - | 0,02 | 0,02 |
| Comparative tracking index (CTI) | IEC-61112 | V | 600 | 600 |
| Capacitance | -- | pF/cm ² | 46 | 46 |
| Flammability, according UL-94, class | UL-94 | class | V-0 | V-0 |
| Glass transition temperature of dielectric layer (by TMA) | IPC-TM 650-2.4.24 | °C | 90 | 90 |
| Maximum operating temperature | -- | ° C | 150 | 150 |

- (1) **Dielectric Breakdown test**, is a material destructive laboratory test. It is performed according the IPC-TM-650 part 2.5.6.3., under AC voltage, raising it until electric failure, on relative small surface area of the dielectric part, and using metal electrodes. Values should be taken as a material reference, and not as guaranteed values.
- (2) **Electrical proof test**. 100% of our laminate production delivered, has been “on line” verified at 3000 V_{dc}: 500 V/sec. ramp // 5sec. held at 2000 V_{dc}.

| AVAILABILITY | |
|-----------------------------------|---|
| STANDARD SHEET SIZES mm. | 610 x 440, 920 x 610, 1060 x 585 |
| Tolerance | +5/-0 mm. |
| Squareness | 3 mm max., as differential between diagonal measurements. |
| Standard size tolerance in panels | + - 0,3 mm. |

The data is based on typical values of standard production and should be considered as general information. Our company reserves the right to future changes. It is the responsibility of the user to ensure that the product complies with his requirements.