# VESTAMID® HT*plus*

## for electronic devices

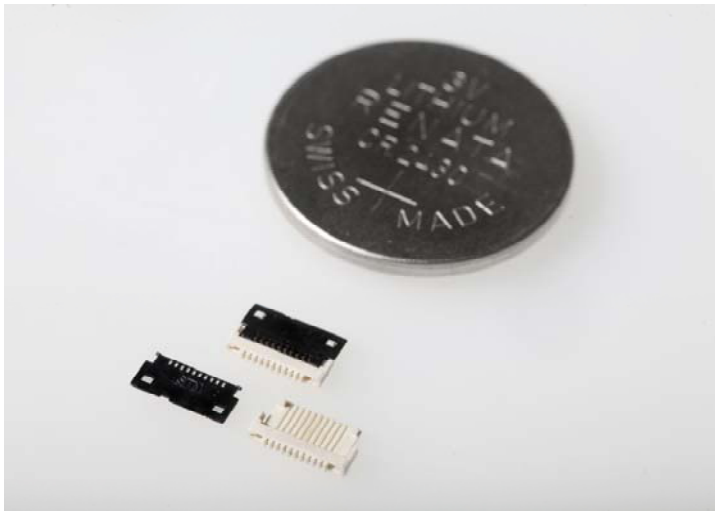
**Faster. Thinner. Less.**
Components made of VESTAMID® HT*plus* enable faster production, allow thinner wall thickness and are less prone to wear and tear.

### An all-rounder

These days, everything relies on computers. And those computers rely on connectors. Connectors ensure efficient data flow and dependable power supply. They serve as input-output links, printed circuit board connectors or memory card bases. Or, for that matter, simply as power connections. But the trend towards ever smaller and more powerful computers also means more and more demands are being made on connectors. For one thing they need to be made extremely heat resistant. And they need to possess increasingly enhanced processing qualities. Connectors made of VESTAMID® HT*plus* easily measure up to such exacting demands.

### Best flame class

Electronic devices made of VESTAMID® HT*plus* are classified flame class V0, at a wall thickness of 0.4mm. Thus, these connectors even have no trouble withstanding lead-free solder baths of extremely high temperatures. As a consequence, such components are much easier to process and thus faster to manufacture. The production process is facilitated by the fact that the use of VESTAMID® HT*plus* reduces the incidence of corrosion on machines compared to the level normally occurring when other materials are used. Because it has a light color, VESTAMID® HT*plus* can be used to make not only black components, but ones in a whole array of individually colorings, as well.



### Reinforced or unreinforced

Evonik is the only manufacturer to offer two variations of PPA: fiber-glass-reinforced or unreinforced. Both variations are heat resistant and particularly suitable for use in the interior of aircrafts, trains or ships. VESTAMID® HT*plus* is also suitable for making LCD bases, transponder casings or SMDs (surface-mounted devices).

### Additional technical benefits

- Contains no halogens or red phosphor
- Complies with RoHS and WEEE regulations
- Passed JEDEC1 blistering test
- Material approval in accordance with UL 94
- Glass transition temperature >125°C
- Less water absorption and higher dimensional stability than PA66 and
- PA46

## VESTAMID® HT*plus* –flame retardant polyphthalamide compounds

| Property | Test method international | national | Unit | VESTAMID HT*plus* M1900 (unreinforced) | VESTAMID HT*plus* M1933 (glass-fiber reinforced) |
|---|---|---|---|---|---|
| Density 23°C | ISO 1183 | DIN EN ISO 1183 | g/cm³ | 1.23 | 1.44 |
| Tensile test | ISO 527-1<br>ISO 527-2 | DIN EN ISO 527-1<br>DIN EN ISO 527-2 | | | |
| Stress at break | | | MPa | 75 | 105 |
| Strain at break | | | % | 1.8 | 1.7 |
| Tensile modulus | ISO 527-1<br>ISO 527-2 | DIN EN ISO 527-1<br>DIN EN ISO 527-1 | MPa | 4200 | 11300 |
| CHARPY impact strength | ISO 179/1eU | DIN EN ISO 179/1eU | | | |
| 23°C | | | kJ/m² | 22 C[1)] | 28 C[1)] |
| -40°C | | | kJ/m² | 24 C[1)] | 26 C[1)] |
| CHARPY notched impact strength | ISO 179/1eA | DIN EN ISO 179/1eA | | | |
| 23°C | | | kJ/m² | 3 C[1)] | 4 C[1)] |
| -40°C | | | kJ/m² | 3 C[1)] | 3 C[1)] |
| Temperature of deflection under load | ISO 75-1<br>ISO 75-2 | | | | |
| Method A 1.8 MPa | | | °C | 138 | 267 |
| Method B 0.45 MPa | | | °C | 256 | 301 |
| Melting range DSC 2nd heating | ISO 11357 | | °C | 300-315 | 300-315 |
| Flammability acc. UL94 | IEC 60695 | UL94 | | | |
| 0.4 mm | | | | V-0 | V-0 |
| 0.8 mm | | | | V-0 | V-0 |
| Comparative tracking index | IEC 60112 | IEC 60112 | | | |
| Test solution A CTI | | | | | <600 |
| 100 drops value value | | | | | 575 |
| Glow wire test | IEC 60695-2-12/13 | DIN EN 60695-2-12/13 | | | |
| GWIT 2mm | | | °C | | 800 |
| GWFI 2mm | | | °C | | 960 |
| Mold shrinkage | Determined on 2 mm sheets with film gate at rim mold temperature 80°C ISO | | | | |
| In flow direction | | | % | | 0.2 |
| in transverse direction | | | % | | 0.9 |



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