

ULTEM™ FILM

ULTEM™ polyetherimide film UTF120 is a high heat and high energy density dielectric film that meets the most stringent technical demands for use in professional-grade dielectric film capacitors. UTF120 film is also available for multiple applications requiring high temperature resistance during processing or application.

ULTEM UTF120 FILM VALUE PROPOSITIONS

- Stable properties through a range of temperatures (-40°C to +150°C) and frequencies, including
 - high temperature dimensional stability
 - high mechanical stability
- Inherent flame retardance
- Good insulation resistance
- High dielectric constant (Dk) and low dissipation factor (Df)
- Excellent metal adhesion
- Low thickness with high thickness uniformity (σ_d)
- High voltage breakdown strength, very clean and defect-free
- Capability to pass industry standard 260°C reflow soldering process



| | BOPP | PET | PEN | PPS | PC | ULTEM UTF120 film |
|------------------------------|-----------------|-------------|-------------|-------------|-------------|-------------------|
| Intrinsic BDS 23°C (v/μm) | 690 | 800 | 660 | 503 | 660 | 590 |
| Intrinsic BDS 150°C (v/μm) | NA | NA | NA | 465 | NA | 510 |
| Dk at 1 kHz | 2.2 | 3.3 | 3.2 | 3.0 | 2.7 | 3.1 |
| Df at 1 kHz | 0.0007 | 0.0040 | 0.0040 | 0.0005 | 0.0022 | 0.0020 |
| Temperature Range (°C) | -55 to +105 | -55 to +125 | -55 to +140 | -55 to +150 | -55 to +125 | -55 to +150 |
| Self-Healing 23°C | *** | * | * | * | ** | * |
| Self-Healing 150°C | * | * | * | * | * | * |
| Metallization | Requires plasma | ** | ** | * | ** | ** |
| Solder Reflow Capable | No | No | Yes | Yes | No | Yes |
| Available Thickness (μm) | >2.1 | >0.5 | >1.2 | >1.2 | >2.0 | 4, 5, 7 & 10μm |
| Cost | Low | Medium | High | Very High | Very High | High |
| Certainty of Supply | *** | *** | * | * | * | *** |
| Overall Performance at 150°C | * | * | * | * | * | ** |

*** Excellent ** Good * Moderate * Poor * None

Developed to offer excellent handling through metallization, capacitor winding and flattening, ULTEM UTF120 film is processable on existing equipment and has been validated with both film-foil and metalized electrodes including flat and tapered metalized electrode designs as well as patterned electrodes.

UTF120 CAN BE USED IN F.E.:

| Thickness | Application |
|-----------|-----------------------------|
| 5µm | Composite tapes |
| 5µm | 3D circuit boards |
| 7µm | Wireless devices |
| 10µm | Acoustic devices (speakers) |

PRODUCT PORTFOLIO

| Grade Name | Available Thicknesses |
|------------|-----------------------|
| UTF120 | 4, 5, 7 and 10µm |

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