Astra® MT77

Ultra Low Loss, RF/MW Laminate and Prepreg

Tg 200°C Td 360°C Dk 3.00 Df 0.0017

IPC-4103 /17 UL - File Number E41625

Astra® MT77 materials are a breakthrough, very low-loss dielectric constant (Dk) product for millimeter wave frequencies and beyond.

PRODUCT FEATURES

Industry Recognition

- UL File Number: E41625
- RoHS Compliant

Performance Attributes

- Lead-free assembly compatible

Processing Advantages

- FR-4 process compatible
- Short lamination cycle
- Reduced drill wear
- No plasma desmear required
- Good flow and fill
- Dimensional stability
- Multiple lamination cycles
- Any layer technology compatible
- HDI technology compatible
- VIPPO design compatible

PRODUCT AVAILABILITY

Standard Material Offering: Laminate

- 2.5, 5, 7.5, 10, 12.5, 15, 20, 30, 60 mil (0.0635, 0.127, 0.1905, 0.254, 0.3175, 0.381, 0.510, 0.760, 1.50 mm)

Copper Foil Type

- HVLP (VLP2) ≤2.5 micron Rz JIS
- Embedded resistor foil

Copper Weight

- ½, 1 and 2 oz (18, 35 and 70 µm) available
- Thinner copper foil available

Standard Material Offering: Prepreg

- Tooling of prepreg panels
- Moisture barrier packaging

Astra MT77 laminate materials exhibit exceptional electrical properties which are very stable over a broad frequency and temperature range. Astra MT77 is suitable for many of today's commercial RF/microwave printed circuit designs. It features a dielectric constant (Dk) that is stable between -40°C and +140°C at up to W-band frequencies. In addition, Astra MT77 offers an ultra-low dissipation factor (Df) of 0.0017, making it a cost-effective alternative to PTFE and other commercial microwave laminate materials.

Key applications include long antennas and radar applications for automobiles, such as adaptive cruise control, pre-crash, blind spot detection, lane departure warning and stop and go systems.

PRODUCT ATTRIBUTES



TYPICAL MARKET APPLICATIONS



 © 2026, Isola Group, All rights reserved.

ORDERING INFORMATION:

Contact your local sales representative or contact info@isola-group.com for further information.

Isola Group
6565 West Frye RoadChandler, AZ 85226 Phone: 480-893-6527
Fax: 480-893-1409

Isola Asia Pacific
(Hong Kong) Ltd.12/F,
Kin Sang Commercial Centre,
49 King Yip Street, Kwun Tong,
Kowloon,
Hong KongPhone: 852-2418-1318
Fax: 852-2418-1533

Isola GmbH
Isola Strasse 2 D-52348 Düren,
GermanyPhone: 49-2421-8080
Fax: 49-2421-808164

Revision No: D © 2026, Isola Group, All rights reserved.

Typical Values Table

Property		Typical Value	Units	Test Method
			Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC		200	°C	2.4.25C
Decomposition Temperature (Td) by TGA @ 5% weight loss		360	°C	2.4.24.6
Time to Delaminate by TMA (Copper removed)	A. T260 B. T288	>60	Minutes	2.4.24.1
Z-Axis CTE	A. Pre-Tg B. Post-Tg	50 - 70 250 - 350	ppm/°C	2.4.24C
X/Y-Axis CTE	Pre-Tg	12	ppm/°C	2.4.24C
Thermal Conductivity		0.45	W/m·K	ASTM E1952
Thermal Stress 10 sec @ 288ºC (550.4ºF)	A. Unetched B. Etched	Pass	Pass Visual	2.4.13.1
Dk, Permittivity	A. @ 2 GHz B. @ 10 GHz	3.00	—	2.5.5.5
Df, Loss Tangent	A. @ 2 GHz B. @ 10 GHz	0.0017	—	Bereskin Stripline
Volume Resistivity	C-96/35/90	1.33×10^7	MΩ-cm	2.5.17.1
Surface Resistivity	C-96/35/90	1.33×10^5	MΩ	2.5.17.1
Dielectric Breakdown		45.4	kV	2.5.6B
Arc Resistance		139	Seconds	2.5.1B
Electric Strength (Laminate & laminated prepreg)		45 (1133)	kV/mm (V/mil)	2.5.6.2A
Comparative Tracking Index (CTI)		3 (175-249)	Class (Volts)	UL 746A ASTM D3638
Peel Strength	1 oz. EDC foil	1.0 (5.7)	N/mm (lb/inch)	2.4.8.3
Flexural Strength	A. Length direction B. Cross direction	338 (49.0) 269 (39.0)	MPa (kpsi)	2.4.4B
Tensile Strength	A. Length direction B. Cross direction	214 (31.0) 165 (24.0)	MPa (kpsi)	ASTM D3039
Poisson's Ratio	A. Length direction B. Cross direction	0.183 0.182	—	ASTM D3039
Moisture Absorption		0.1	%	2.6.2.1A
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Relative Thermal Index (RTI)		130	°C	UL 796

Revision No: D © 2026, Isola Group, All rights reserved.

NOTES

Visit our site http://www.isola-group.com for more details.
Revisions:
A: Initial release - 4/17
B: Corrected units for Flexural and Tensile Strength - 8/18
C: Change MOT to RTI 5/19
D: Changed VLP2 to HVLP to align with common industry terms 4/21

Isola, the Isola logo, Astra, Chronon, GETEK, I-Fill, IsoDesign, IsoStack, I-Speed, I-Tera, Polyclad, Stratus, TerraGreen, and The Base for Innovation are registered trademarks or trademarks of ISOLA USA Corp. in the United States and in other countries. Copyright © 2021 Isola Group. All rights reserved.