



Astra[®] MT Very Low-loss Laminate Material

Astra MT laminate materials exhibit exceptional electrical properties which are very stable over a broad frequency and temperature range. Astra MT is suitable for many of today's commercial RF/microwave printed circuit designs. It features a dielectric constant (Dk) that is stable between -55°C and +125°C at up to 20 GHz. In addition, Astra MT offers a lower 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.

www.isola-group.com/products/AstraMT

ORDERING INFORMATION:

Contact your local sales representative or visit www.isola-group.com for further information.

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RF/Microwave

Astra[®] MT Data Sheet

Tg 200, Td 360
Dk 3.00, Df 0.0017

Features

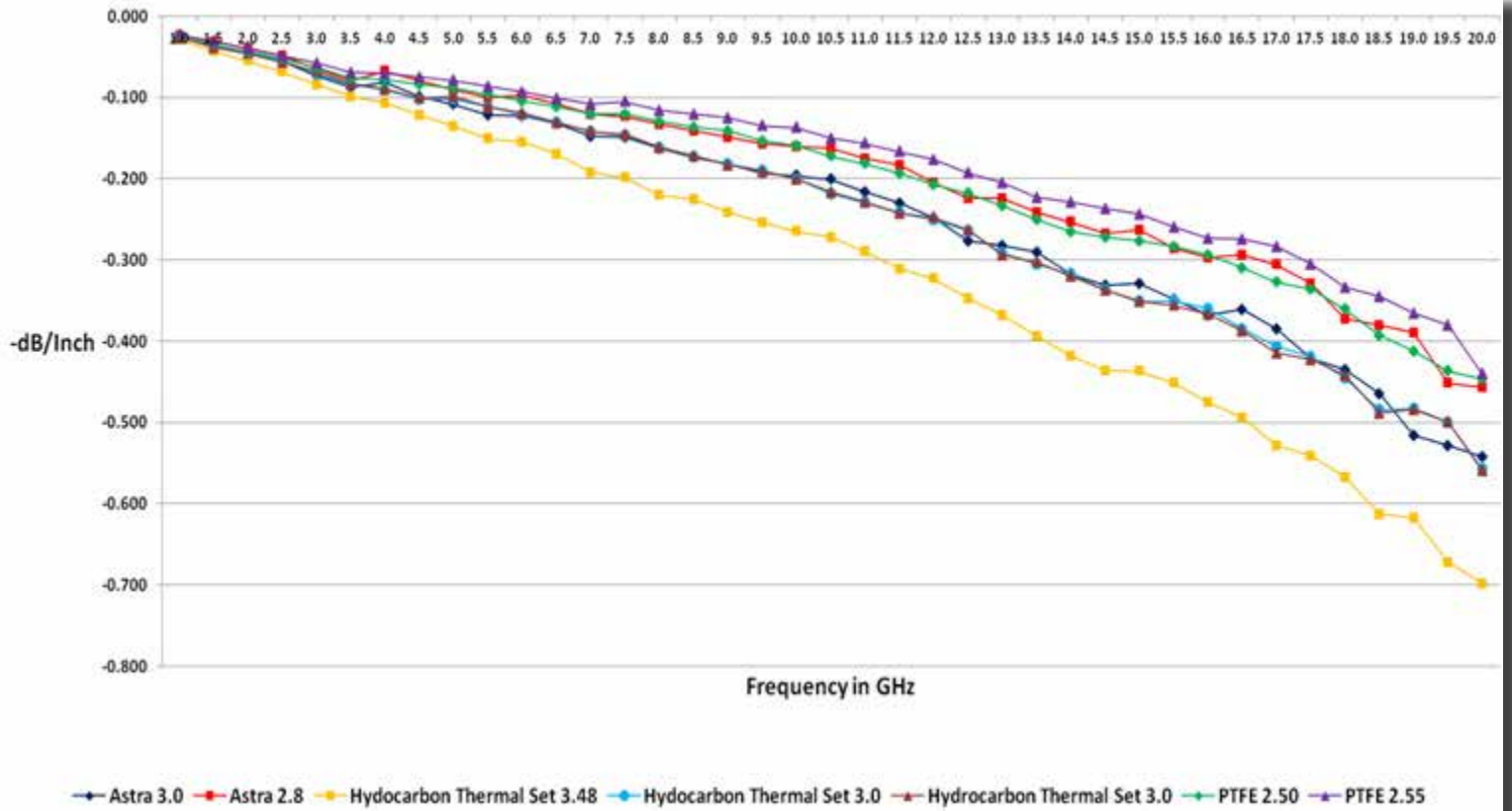
- High Thermal Performance
 - ▶ Tg: 200°C (DSC)
 - ▶ Td: 360°C (TGA @ 5% wt loss)
 - ▶ Low CTE in the Z-axis – 2.9% (-55-288°C)
- T260: 60+ minutes
- T288: 60+ minutes
- RoHS Compliant
- Electrical Properties
 - ▶ Dk: 3.00 ±0.05
 - ▶ Df: 0.0017 ±0.0005
 - ▶ Exceptional dielectric properties over a broad frequency and temperature range per IPC-TM-650-2.5.5.5
- Core Material Standard Availability
 - ▶ Thickness: 0.005", 0.010", 0.020", 0.030" & 0.060" (0.127 mm, 0.254 mm, 0.510 mm, 0.760 mm & 1.50 mm)
 - ▶ Available in full size sheet or panel form
- Copper Foil Type Availability
 - ▶ VLP-2 (2 micron)
- Copper Weights
 - ▶ ½, 1 and 2 oz (18, 35 and 70 µm) available
 - ▶ Heavier copper available upon request
 - ▶ Thinner copper foil available upon request
- Industry Approvals
 - ▶ UL – File Number E41625
 - ▶ UL 94 V-0 130 MOT

Astra® MT Specifications

Property		Typical Values			
		Typical Value	Specification	Units	Test Method
				Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC		200	170-200	°C	2.4.24
Decomposition Temperature (Td) by TGA @ 5% weight loss		360	–	°C	ASTM D3850
T260		60+	–	Minutes	–
T288		60+	–	Minutes	–
CTE, Z-axis	A. Pre-Tg	44.7	AABUS	ppm/°C	2.4.41
	B. Post-Tg	191	–		
CTE, X-, Y-axes	A. Pre-Tg	12	AABUS	ppm/°C	2.4.41
	B. Post-Tg	13	–		
Z-axis Expansion (-55 to 260°C)		2.9	–	%	2.4.41
Thermal Conductivity (-100 to 250°C)		0.45	–	W/mK	ASTM F433
Thermal Stress 10 sec @ 288°C (550.4°F)	A. Unetched	Pass	Pass Visual	Rating	2.4.13.1
	B. Etched				
Dk, Permittivity @ 2 GHz		3.00	±0.05	–	2.5.5.5
Df, Permittivity @ 2 GHz		0.0017	Min ±0.0005	–	2.5.5.5
Volume Resistivity	96/35/90	1.33x10 ⁷	1.0x10 ⁶	MΩ-cm	2.5.17.1
Surface Resistivity	96/35/90	1.33x10 ⁵	1.0x10 ⁴	MΩ	2.5.17.1
Dielectric Breakdown (0.060)		45.4	–	kV	2.5.6
Arc Resistance		139	60	Seconds	2.5.1
Electric Strength		45 (1133)	30 (750)	kV/mm (V/mil)	2.5.6.2
Comparative Tracking Index (CTI)		2	–	Class (Volts)	UL-746A ASTM D3638
Peel Strength	1 oz. EDC foil	1.0 (5.7)	0.53 (3.0)	N/mm (lb/inch)	2.4.8.3
Flexural Strength	A. Lengthwise direction	37,500	–	lb/inch ²	2.4.4
	B. Crosswise direction	28,500			
Tensile Strength	A. Lengthwise direction	28,000	–	lb/inch ²	ASTM D638
	B. Crosswise direction	26,000			
Young's Modulus	A. Grain direction	2559	–	ksi	ww
	B. Fill direction	2366			
Poisson's Ratio	A. Grain direction	0.122	–	–	xx
	B. Fill direction	0.120			
Moisture Absorption		0.01	–	%	2.6.2.1
Flammability		V-0	V-0	Rating	UL 94
Max Operating Temperature		130	UL Cert	°C	–

The data, while believed to be accurate and based on analytical methods considered to be reliable, is for information purposes only. Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold.

Astra® MT Vs. The Competition



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