



# mmWave77

## mmWave77 High Frequency Low Loss Material

### FEATURES

- Stable Dk/Df over frequency and temperature.
- Low dielectric tolerance +/-0.04.
- Low Moisture Absorption
- Excellent copper peel strength
- UL 94 V-0 flame rating.

### APPLICATIONS

Automotive radar applications  
 Cellular telecommunications system  
 Global positioning satellite antennas  
 Patch antenna for wireless communications  
 Remote meter readers  
 Direct broadcast satellites

### GENERAL PROPERTIES

Test Items	Test Method	Test Condition	Direction	Unit	Typical Value
Dielectric Constant (Process Dk)	IPC-TM-650 2.5.5.5 Clamped Stripline	10GHz/23°C	Z	-	3.07
Dielectric Constant (Design Dk)	Resonator Ring	77GHz/23°C	Z	-	3.09
Dissipation Factor, Df	IPC-TM-650 2.5.5.5	10GHz/23°C	Z	-	0.0008
Td	ASTM D3850	TGA	-	°C	538
Coefficient of Thermal Expansion (-50°C-150°C)	IPC-TM-650 2.4.41	TMA 25°C, 50%RH	X	ppm/°C	16
			Y	ppm/°C	16
			Z	ppm/°C	31
Volume Resistivity	IPC-TM-650 2.5.17.1	A	-	MΩ-cm	1.04X10 <sup>8</sup>
Surface Resistivity	IPC-TM-650 2.5.17.1	A	-	MΩ	4.38X10 <sup>8</sup>
Peel Strength	IPC-TM-650 2.4.8	after solder float HOz HVLP foil	-	N/mm [lb/in]	1.64 [9.37]
		125°C	-	N/mm [lb/in]	2.1 [12]
Water Absorption	IPC-TM-650 2.6.2.1	-	-	%	0.01
Thermal Conductivity	ASTM D5470	50°C	Z	W/m·K	0.50
Density	ASTM D792	A	-	g/cm <sup>3</sup>	2.15
Flammability	UL94	-	-	Rating	V-0

#### Remarks:

All the typical values listed above are for your reference only and not intended for specification. Please contact Shengyi Technology Co., Ltd. for detailed information. All rights from this data sheet are reserved by Shengyi Technology Co., Ltd.



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## Product Specification

STANDARD THICKNESS	STANDARD PANEL SIZE	COPPER FOIL
0.005" (0.127mm)	18" × 24" (457mm × 610mm) 21" × 24" (534mm × 610mm)	1/2 Oz (18 μ m) HVLP copper foil. 1 Oz (35 μ m) HVLP copper foil.
0.010" (0.254mm)		
0.020" (0.508mm)		
0.030" (0.762mm)		