



# S7136H

## Glass Reinforced Hydrocarbon Ceramic High Frequency Circuit Material

### FEATURES

- Glass-reinforced hydrocarbon & ceramic dielectric
- Excellent high frequency performance due to Low dielectric tolerance and loss.
- Stable electrical properties versus frequency.
- Low Z-CTE and excellent dimensional stability.

### APPLICATIONS

Microstrip and Cellular Base Station  
Power Amplifiers  
Antennas  
LNA/LNB  
High frequency wireless communication  
Satellite signal transmission equipment

### GENERAL PROPERTIES

Test Items	Test Method	Condition	Unit	Typical Value
Dielectric Constant Process Dk	IPC-TM-650 2.5.5.5 [1]	10GHz/23 °C	-	3.42±0.05
Dielectric Constant Design Dk	Differential phase length test	A	-	3.61
Dielectric Constant	IEC 61189-2-721 (SPDR)	10GHz/23 °C	-	3.68±0.05
Loss Tangent	IPC-TM-650 2.5.5.5	10GHz/23 °C	-	0.0030
	IEC 61189-2-721 (SPDR)	10GHz/23 °C	-	0.0035
TcDk	IEC 61189-2-721	10GHz (-40-150 °C)	ppm/°C	+50
Volume Resistivity	IPC-TM-650 2.5.17.1	A	MΩ-cm	1.1x10 <sup>8</sup>
Surface Resistivity	IPC-TM-650 2.5.17.1	A	MΩ	1.6x10 <sup>7</sup>
Tg	IPC-TM-650 2.4.25	DSC	°C	>280
Td	ASTM D3850	TGA (5% W.L)	°C	390
CTE (X/Y/Z-axis)	IPC-TM-650 2.4.24	TMA (30-260 °C)	ppm/°C	12/14/45
Peel Strength	IPC-TM-650 2.4.8	288 °C/10s	N/mm [lb/in]	0.72 [4.11]
Water Absorption	IPC-TM-650 2.6.2.1	D-24/23	%	0.06
Thermal Conductivity	ASTM D5470	100 °C	W/m·K	0.66
Tensile Modulus (LW/CW)	ASTM D638	A	GPa	16.1/18.5
Tensile Strength (LW/CW)	ASTM D638	A	MPa	175/245
Flexural Strength	IPC-TM-650 2.4.4	A	MPa	260
Flammability	UL-94	C-48/23/50,	Rating	V-0

All the typical value is based on the 0.508mm (0.020") specimen, and the specification sheet is based on IPC4103/11.

### PRODUCT SPECIFICATION PROPEAIES

Product	Standard Thickness Offerings	Standard Panel Sizes	Standard Copper Cladding
S7136H	0.010"(0.25mm) 0.020"(0.51mm) 0.030"(0.76mm) 0.040"(1.02mm) 0.050"(1.27mm) 0.060"(1.52mm)	36"x 48" & 40"x48" & 42"x48" Additional sizes may be available upon request	HOz, 1Oz, 2Oz HTE
S7136H(CH1)[1]	0.0107"(0.27mm) 0.0207"(0.53mm) 0.0307"(0.78mm) 0.0407"(1.04mm) 0.0507"(1.29mm) 0.0607"(1.54mm)		HOz, 1Oz, Low profile copper foil

[1] For double-sided boards, S7136H(CH1) results in a thickness increase of approximately 0.0007" (18µm) and the Dk decreases by about 0.1 as the core thickness decreases from 0.0207" to 0.0107"

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