



S7136H

High Frequency Hydrocarbon Ceramic Circuit Material

FEATURES

- Glass-reinforced hydrocarbon and 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.
- Point-to-point Microwave.
- Phased-Array Radar.
- RF Components.
- High Frequency Wireless Communication.

GENERAL PROPERTIES

Test Items	Test Method	Test Condition	Unit	Direction	Typical Value
Dielectric Constant,Dk	IPC-TM-650 2.5.5.5	C-24/23/50,10GHz	-	Z	3.42±0.05
Dielectric Constant	Differential phase length test	COND A	-		3.61
Dielectric Constant	IPC-TM-650 2.5.5.15	10GHz/23℃	-		3.68±0.05
Loss Tangent	IPC-TM-650 2.5.5.5	10GHz/23℃	-		0.0030
Loss Tangent	IPC-TM-650 2.5.5.15	10GHz/23℃	-		0.0035
Thermal Coefficient of Dk	IPC-TM-650 2.5.5.15	-55℃ to 85℃	ppm/℃	Z	+50
Volume Resistivity	IPC-TM-650 2.5.17.1	COND A	MΩ•cm		1.1×10 ⁸
Surface Resistivity	IPC-TM-650 2.5.17.1	COND A	MΩ		1.6×10 ⁷
Tg	IPC-TM-650 2.4.25	DSC	℃		>280
Td	ASTM D3850	TGA(5% wt. loss)	℃		390
CTE	IPC-TM-650 2.4.24	50~260℃	ppm/℃	Z	45
	IPC-TM-650 2.4.41	50~260℃	ppm/℃	X/Y	12/14
Peel Strength (1oz HTE)	IPC-TM-650 2.4.8	288℃/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℃	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	UL94	C-48/23/50	Rating		V-0

Remarks: 1. All the typical value is based on the 0.508mm (0.020") thickness specimen, but not guarantee data.

2. All the typical value listed above is for your reference only, please turn to Shengyi Technology Co., Ltd. for detailed information, and all rights from this data sheet are reserved by Shengyi Technology Co., Ltd.

Explanations: C=Humidity conditioning, D=Immersion conditioning in distilled water, E=Temperature conditioning.

The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in ℃ and with the third digit the relative humidity.



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PRODUCT SPECIFICATION

Product	Standard Thickness	Standard Panel Size	Standard Copper Cladding
S7136H	0.0066" (0.168mm) 2×1080 0.010" (0.254mm) 3×1080 0.0133" (0.338mm) 4×1080 0.0166" (0.422mm) 5×1080 0.020" (0.508mm) 6×1080 0.030" (0.762mm) 9×1080 0.040" (1.016mm) 12×1080 0.050" (1.270mm) 15×1080 0.060" (1.524mm) 18×1080	36"×48" 40"×48" 42"×48" Additional panel sizes may be available upon request.	Hoz, 1oz, 2oz HTE copper foil
	0.004" (0.102mm) 1×1080 0.008" (0.203mm) 2×1080 0.012" (0.305mm) 3×1080 0.016" (0.406mm) 4×1080 0.024" (0.610mm) 6×1080 0.032" (0.813mm) 8×1080		
S7136H(CR) ^[1]	0.0040" (0.102mm) 1×1080 0.0073" (0.185mm) 2×1080 0.0107" (0.272mm) 3×1080 0.0140" (0.356mm) 4×1080 0.0173" (0.440mm) 5×1080 0.0207" (0.526mm) 6×1080 0.0307" (0.780mm) 9×1080 0.0407" (1.034mm) 12×1080 0.0507" (1.288mm) 15×1080 0.0607" (1.542mm) 18×1080		Hoz, 1oz RTF copper foil

[1] For double-sided boards, with coated RTF copper, Dk for S7136H(CR) is 3.50 for dielectric thickness above 0.0207" and the Dk of S7136H(CR) decreases by about 0.10 as the core thickness decreases from 0.0207" to 0.004" .

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