



# HF-170/PP-HF170 Line up Electrical Properties

## 1) CORE (HF-170)

Thickness (mil) $\pm 10\%$	Thickness (mm) $\pm 10\%$	Layup	Dk $\pm 0.2$				Df $\pm 10\%$			
			1GHz	2GHz	5GHz	10GHz	1GHz	2GHz	5GHz	10GHz
1.7	0.043	1017*2	4.1	4.0	3.9	3.9	0.012	0.013	0.014	0.015
2.0	0.051	1017*2	4.0	3.9	3.9	3.8	0.013	0.014	0.015	0.015
		106*1	3.9	3.9	3.8	3.8	0.013	0.014	0.015	0.015
		1067*1	4.1	4.0	3.9	3.9	0.012	0.013	0.014	0.015
2.5	0.064	1067*1	4.0	3.9	3.9	3.8	0.013	0.014	0.015	0.015
3.0	0.076	1080*1	4.1	4.0	4.0	3.9	0.012	0.013	0.014	0.014
		1078*1	4.1	4.0	4.0	3.9	0.012	0.013	0.014	0.014
		1037*2	4.1	4.0	3.9	3.9	0.012	0.013	0.014	0.015
		1027*2	4.0	3.9	3.9	3.8	0.013	0.014	0.015	0.015
3.5	0.089	3313*1	4.3	4.3	4.2	4.2	0.011	0.012	0.013	0.013
		1037*2	4.0	3.9	3.9	3.8	0.013	0.014	0.015	0.015
4.0	0.102	3313*1	4.2	4.2	4.1	4.1	0.011	0.013	0.013	0.014
		106*2	3.9	3.9	3.8	3.7	0.013	0.014	0.015	0.015
4.5	0.114	106*2	3.9	3.8	3.8	3.7	0.013	0.014	0.015	0.015
		2116*1	4.4	4.3	4.3	4.2	0.011	0.012	0.013	0.013
5.0	0.127	2116*1	4.4	4.4	4.3	4.2	0.011	0.012	0.013	0.013
		1080*2	4.2	4.2	4.1	4.0	0.012	0.013	0.014	0.014
6.0	0.152	1506*1	4.5	4.4	4.4	4.3	0.010	0.011	0.012	0.013
		1080*2	4.1	4.0	4.0	3.9	0.012	0.013	0.014	0.014
7.0	0.178	7628*1	4.5	4.5	4.4	4.4	0.010	0.011	0.012	0.012
		3313*2	4.3	4.3	4.2	4.2	0.011	0.012	0.013	0.013
8.0	0.203	7628*1	4.4	4.4	4.3	4.3	0.010	0.012	0.012	0.013
		3313*2	4.2	4.2	4.1	4.1	0.011	0.013	0.013	0.014
9.0	0.229	2116*2	4.3	4.3	4.2	4.2	0.011	0.012	0.013	0.013



# HF-170/PP-HF170 Line up Electrical Properties

## 1) CORE (HF-170)

Thickness (mil)±10%	Thickness (mm)±10%	Layup	Dk±0.2				Df±10%			
			1GHz	2GHz	5GHz	10GHz	1GHz	2GHz	5GHz	10GHz
10.0	0.254	2116*2	4.4	4.4	4.3	4.2	0.011	0.012	0.013	0.013
12.0	0.305	1506*2	4.6	4.5	4.4	4.4	0.010	0.011	0.012	0.012
		3313*3	4.2	4.2	4.1	4.1	0.011	0.013	0.013	0.014
14.0	0.356	7628*2	4.5	4.5	4.4	4.4	0.010	0.011	0.012	0.012
16.0	0.406	7628*2	4.5	4.4	4.3	4.3	0.010	0.012	0.012	0.013
		3313*4	4.2	4.2	4.1	4.1	0.011	0.013	0.013	0.014
18.0	0.457	7628*1+1080*1+ 7628*1	4.5	4.4	4.3	4.3	0.010	0.012	0.012	0.013
		2116*4	4.3	4.3	4.2	4.2	0.011	0.012	0.013	0.013
20.0	0.508	7628*1+2116*1+ 7628*1	4.4	4.4	4.3	4.3	0.010	0.012	0.012	0.013
		2116*4	4.3	4.2	4.1	4.1	0.011	0.012	0.013	0.014
21.0	0.533	7628*3	4.5	4.5	4.4	4.4	0.010	0.011	0.012	0.012
24.0	0.610	7628*3	4.5	4.4	4.3	4.3	0.010	0.012	0.012	0.013
28.0	0.711	7628*4	4.5	4.5	4.4	4.4	0.010	0.011	0.012	0.012
32.0	0.813	7628*4	4.5	4.4	4.3	4.3	0.010	0.012	0.012	0.013
40.0	1.016	7628*5	4.5	4.4	4.3	4.3	0.010	0.012	0.012	0.013
47.0	1.194	7628*6	4.5	4.4	4.3	4.3	0.010	0.012	0.012	0.013
59.0	1.499	7628*8	4.5	4.5	4.4	4.3	0.010	0.011	0.012	0.012



# HF-170/PP-HF170 Line up Electrical Properties

## 2) PREPREG (PP-HF170)

Glass style	Thickness (mil) ±10%	Thickness (mm) ±10%	RC%	Dk±0.2				Df±10%			
				1GHz	2GHz	5GHz	10GHz	1GHz	2GHz	5GHz	10GHz
1017	1.30	0.033	77	3.9	3.8	3.7	3.7	0.013	0.014	0.015	0.016
	1.50	0.038	81	3.8	3.7	3.6	3.6	0.014	0.015	0.016	0.016
1027	1.50	0.038	71	4.0	3.9	3.9	3.8	0.013	0.014	0.015	0.015
	1.80	0.046	75	3.9	3.8	3.8	3.7	0.013	0.014	0.015	0.015
	1.90	0.048	77	3.9	3.8	3.7	3.7	0.013	0.014	0.015	0.016
	2.10	0.053	79	3.8	3.8	3.7	3.6	0.013	0.015	0.015	0.016
1037	1.90	0.048	73	3.9	3.9	3.8	3.8	0.013	0.014	0.015	0.015
	2.10	0.053	75	3.9	3.8	3.8	3.7	0.013	0.014	0.015	0.015
	2.30	0.058	77	3.9	3.8	3.7	3.7	0.013	0.014	0.015	0.016
106	2.00	0.051	74	3.9	3.9	3.8	3.7	0.013	0.014	0.015	0.015
	2.40	0.061	77	3.9	3.8	3.7	3.7	0.013	0.014	0.015	0.016
	2.60	0.066	79	3.8	3.8	3.7	3.6	0.013	0.015	0.015	0.016
1067	2.30	0.058	71	4.0	3.9	3.9	3.8	0.013	0.014	0.015	0.015
	2.80	0.071	74	3.9	3.9	3.8	3.7	0.013	0.014	0.015	0.015
	3.00	0.076	77	3.9	3.8	3.7	3.7	0.013	0.014	0.015	0.016
1080/1078	3.10	0.079	65	4.1	4.0	4.0	3.9	0.012	0.013	0.014	0.014
	3.40	0.086	68	4.0	4.0	3.9	3.9	0.012	0.014	0.014	0.015
	3.60	0.091	70	4.0	3.9	3.9	3.8	0.013	0.014	0.015	0.015
3313	3.50	0.089	52	4.4	4.3	4.2	4.2	0.011	0.012	0.013	0.013
	3.80	0.097	55	4.3	4.3	4.2	4.1	0.011	0.012	0.013	0.013
	4.00	0.102	58	4.2	4.2	4.1	4.1	0.011	0.013	0.013	0.014
2116	4.80	0.122	54	4.3	4.3	4.2	4.1	0.011	0.012	0.013	0.013
	5.10	0.130	56	4.3	4.2	4.2	4.1	0.011	0.012	0.013	0.013
	5.40	0.137	58	4.2	4.2	4.1	4.1	0.011	0.013	0.013	0.014
1506	6.10	0.155	46	4.5	4.4	4.4	4.3	0.010	0.011	0.012	0.013
	6.40	0.163	48	4.4	4.4	4.3	4.3	0.010	0.012	0.012	0.013
7628	7.40	0.188	44	4.5	4.5	4.4	4.3	0.010	0.011	0.012	0.012
	8.00	0.203	47	4.5	4.4	4.3	4.3	0.010	0.012	0.012	0.013
	8.60	0.218	50	4.4	4.4	4.3	4.2	0.011	0.012	0.013	0.013