

# Base Material Line Up



## 1. Thin Core (Synamic8GX)

Typical Thickness		Ply-up	RC (%)	Typical Dk						Typical Df					
mil	mm			1 GHz	5GHz	10 GHz	15GHz	20GHz	30GHz	1 GHz	5GHz	10 GHz	15GHz	20GHz	30GHz
2.0	0.051	1x1035	66	3.09	3.09	3.09	3.09	3.09	3.09	0.0019	0.0025	0.0028	0.0031	0.0034	0.0037
2.5	0.064	1x1035	72	3.00	3.00	3.00	3.00	3.00	3.00	0.0016	0.0022	0.0025	0.0028	0.0031	0.0034
2.5	0.064	1x1078	60	3.18	3.18	3.18	3.18	3.18	3.18	0.0022	0.0028	0.0031	0.0034	0.0037	0.0040
3.0	0.076	1x1035	77	2.93	2.93	2.93	2.92	2.92	2.92	0.0014	0.0020	0.0023	0.0026	0.0029	0.0032
3.0	0.076	1x1078	65	3.11	3.10	3.10	3.10	3.10	3.10	0.0019	0.0025	0.0028	0.0031	0.0034	0.0037
3.0	0.076	2x1037	67	3.08	3.08	3.07	3.07	3.07	3.07	0.0018	0.0024	0.0027	0.0030	0.0033	0.0036
3.5	0.089	1x1078	70	3.03	3.03	3.03	3.03	3.03	3.03	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
3.5	0.089	1x1086	67	3.08	3.08	3.07	3.07	3.07	3.07	0.0018	0.0024	0.0027	0.0030	0.0033	0.0036
3.5	0.089	2x1037	71	3.02	3.02	3.01	3.01	3.01	3.01	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
4.0	0.102	1x3313	57	3.23	3.22	3.22	3.22	3.22	3.22	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
4.0	0.102	2x1035	66	3.09	3.09	3.09	3.09	3.09	3.09	0.0019	0.0025	0.0028	0.0031	0.0034	0.0037
4.0	0.102	1x1078	73	2.99	2.99	2.98	2.98	2.98	2.98	0.0016	0.0022	0.0025	0.0028	0.0031	0.0034
4.0	0.102	1x1086	71	3.02	3.02	3.01	3.01	3.01	3.01	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
4.5	0.114	2x1035	69	3.05	3.05	3.04	3.04	3.04	3.04	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
4.5	0.114	1x3313	61	3.17	3.16	3.16	3.16	3.16	3.16	0.0021	0.0027	0.0030	0.0033	0.0036	0.0039
5.0	0.127	1x2116	56	3.24	3.24	3.24	3.24	3.24	3.23	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
5.0	0.127	2x1035	72	3.00	3.00	3.00	3.00	3.00	3.00	0.0016	0.0022	0.0025	0.0028	0.0031	0.0034
5.0	0.127	2x1078	60	3.18	3.18	3.18	3.18	3.18	3.18	0.0022	0.0028	0.0031	0.0034	0.0037	0.0040
5.5	0.140	1x2116	59	3.20	3.19	3.19	3.19	3.19	3.19	0.0022	0.0028	0.0031	0.0034	0.0037	0.0040
6.0	0.152	2x1078	65	3.11	3.10	3.10	3.10	3.10	3.10	0.0019	0.0025	0.0028	0.0031	0.0034	0.0037

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7.0	0.178	2x1086	67	3.08	3.08	3.07	3.07	3.07	3.07	0.0018	0.0024	0.0027	0.0030	0.0033	0.0036
8.0	0.203	2x3313	57	3.23	3.22	3.22	3.22	3.22	3.22	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
10.0	0.254	2x2116	56	3.24	3.24	3.24	3.24	3.24	3.23	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
12.0	0.306	3x3313	57	3.23	3.22	3.22	3.22	3.22	3.22	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
15.0	0.381	3x2116	56	3.24	3.24	3.24	3.24	3.24	3.23	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
16.0	0.406	4x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
18.0	0.457	4x2116	51	3.32	3.31	3.31	3.31	3.31	3.31	0.0025	0.0031	0.0034	0.0038	0.0041	0.0044
18.0	0.457	4x3313	61	3.17	3.16	3.16	3.16	3.16	3.16	0.0021	0.0027	0.0030	0.0033	0.0036	0.0039
20.0	0.508	5x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
24.0	0.610	6x3313	57	3.23	3.22	3.22	3.22	3.22	3.22	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
25.0	0.635	5x2116	56	3.24	3.24	3.24	3.24	3.24	3.23	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
28.0	0.711	7x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
30.0	0.762	6x2116	56	3.24	3.24	3.24	3.24	3.24	3.23	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
36.0	0.914	9x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
40.0	1.016	10x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
44.0	1.118	11x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
48.0	1.219	12x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
52.0	1.321	13x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
56.0	1.422	14x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046
60.0	1.524	15x2116	47	3.37	3.37	3.37	3.37	3.37	3.37	0.0026	0.0033	0.0036	0.0040	0.0043	0.0046

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## 2. Prepreg (Synamic8GXB)

Glass style (E-glass)	RC (%)	Thickness		Typical Dk						Typical Df					
		mil	mm	1 GHz	5GHz	10 GHz	15GHz	20GHz	30GHz	1 GHz	5GHz	10 GHz	15GHz	20GHz	30GHz
1037	69	1.8	0.045	3.05	3.05	3.04	3.04	3.04	3.04	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
	72	2.0	0.051	3.00	3.00	3.00	3.00	3.00	3.00	0.0016	0.0022	0.0025	0.0028	0.0031	0.0034
1035	69	2.3	0.058	3.05	3.05	3.04	3.04	3.04	3.04	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
	72	2.5	0.065	3.00	3.00	3.00	3.00	3.00	3.00	0.0016	0.0022	0.0025	0.0028	0.0031	0.0034
	74	2.8	0.070	2.97	2.97	2.97	2.97	2.97	2.97	0.0015	0.0021	0.0024	0.0027	0.0030	0.0033
	77	3.1	0.079	2.93	2.93	2.93	2.92	2.92	2.92	0.0014	0.0020	0.0023	0.0026	0.0029	0.0032
1078	63	2.9	0.073	3.14	3.13	3.13	3.13	3.13	3.13	0.0020	0.0026	0.0029	0.0032	0.0035	0.0038
	65	3.1	0.078	3.11	3.10	3.10	3.10	3.10	3.10	0.0019	0.0025	0.0028	0.0031	0.0034	0.0037
	68	3.4	0.087	3.06	3.06	3.06	3.06	3.06	3.06	0.0018	0.0024	0.0027	0.0030	0.0033	0.0036
	70	3.6	0.092	3.03	3.03	3.03	3.03	3.03	3.03	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
	71	3.8	0.097	3.02	3.02	3.01	3.01	3.01	3.01	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
	73	4.1	0.105	2.99	2.99	2.98	2.98	2.98	2.98	0.0016	0.0022	0.0025	0.0028	0.0031	0.0034
	74	4.3	0.110	2.97	2.97	2.97	2.97	2.97	2.97	0.0015	0.0021	0.0024	0.0027	0.0030	0.0033
	75	4.5	0.115	2.96	2.96	2.96	2.95	2.95	2.95	0.0015	0.0021	0.0024	0.0027	0.0030	0.0033
1080	77	5.0	0.127	2.93	2.93	2.93	2.92	2.92	2.92	0.0014	0.0020	0.0023	0.0026	0.0029	0.0032
	70	3.6	0.092	3.03	3.03	3.03	3.03	3.03	3.03	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
	71	3.8	0.097	3.02	3.02	3.01	3.01	3.01	3.01	0.0017	0.0023	0.0026	0.0029	0.0032	0.0035
3313	73	4.1	0.105	2.99	2.99	2.98	2.98	2.98	2.98	0.0016	0.0022	0.0025	0.0028	0.0031	0.0034
	57	4.2	0.105	3.23	3.22	3.22	3.22	3.22	3.22	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041

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3313	59	4.3	0.110	3.20	3.19	3.19	3.19	3.19	3.19	0.0022	0.0028	0.0031	0.0034	0.0037	0.0040
	61	4.6	0.117	3.17	3.16	3.16	3.16	3.16	3.16	0.0021	0.0027	0.0030	0.0033	0.0036	0.0039
	63	5.0	0.126	3.14	3.13	3.13	3.13	3.13	3.13	0.0020	0.0026	0.0029	0.0032	0.0035	0.0038
2116	56	5.1	0.130	3.24	3.24	3.24	3.24	3.24	3.23	0.0023	0.0029	0.0032	0.0035	0.0038	0.0041
	58	5.4	0.137	3.21	3.21	3.21	3.21	3.21	3.20	0.0022	0.0028	0.0031	0.0034	0.0037	0.0040
	59	5.6	0.142	3.20	3.19	3.19	3.19	3.19	3.19	0.0022	0.0028	0.0031	0.0034	0.0037	0.0040

**Remark:**

1. For customer impedance calculation and SI simulation use only.
2. Not used for PCB's IQC test reference. QA Dk/Df consistency monitoring method use SPDR. Please check with SYTECH technical service engineers.
3. The above data is for reference only. SYTECH reserves the right for any update.
4. The above PP thickness data is for reference only, and PCB need to evaluate the corresponding data according to pressing profile and actual pressing condition.
5. S8GX could work with different types of copper foil to meet cost and performance requirement. We could offer RTF2/RTF3 in regular, RTF4 and HVLP2 are also available upon request. 2Oz and above heavy copper use RTF.