

Main family	Family	Type	Supplier	Manuf.	Laminate	Pre-preg / Adhesive	No Flow	Tg (N, M, H)	Tg (°C) [DSC]	Lead free assay	Fillers	Td (°C) 5%	T260 (mins.)	T280 (mins.)	Dk at 1GHz (gen)	Df	UL Rating	SCL UL Certified	UL Marking "SCL S ?? 94-V?"	CTI	IPC-4101B / ...	Halogen free?	Comment	
FR4	DE104i	Laminate and Pre-preg	CCI Eurolam	Isola	DE104i	DE104i	N	N	140	Y	Y	330	60	5	4.2*	0.022	V0	V0	1 (D/S), 12 (M/L)	175	21 / 121	N	Labelled as "FR4" in PCP2000 and lead free compatible. Claimed Er is 4.0	
	ECU104KF	Laminate and Pre-preg	CCI Eurolam	Isola	ECU104KF	ECU104KF	N	N	135	N	N	?	?	?	4.75	0.020	V0	V0	1 (D/S), 3 (M/L)	400	21	N		
	IS410	Laminate and Pre-preg	CCI Eurolam	Isola	IS410	IS410	N	H	180	Y	N	N	350	60	?	3.9	0.023	V0	V0	1 (D/S), 3 or 12 (M/L)	175	21 / 24 / 26 / 28 / 121 / 124	N	High Tg Lead Free Assy
	DE156	Laminate and Pre-preg	CCI Eurolam	Isola	DE156	DE156	N	M	160	Y	N	N	400	60	?	4.3	0.019	V0	N		94	Y		
	FR406N	Pre-preg	CCI Eurolam	Isola	FR406N	FR406N	Y	H	170	N	N	?	?	?	?	4.3	0.025	V0	V0	3 (M/L), 5 or 6 (F/R)		24 / 26	N	
	PCL370HR	Laminate and Pre-preg	CCI Eurolam	Isola	PCL370HR	PCL370HR	N	H	180	Y	Y	Y	340	60	30	4.17	0.016	V0	V0	1 (D/S), 3 or 12 (M/L)	175	H / 24 / 26 / 98 / 99 / 101 / 12	N	
	N4000-2	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4105-2	N4205-2	N	N	140	N	N	N	300	8	?	4.1	0.023	V0	V0	1 (D/S), 3 (M/L)		21	N	Not used by SCL
	N4000-2N	Pre-preg	Nelco / Lamar	Nelco	N4205-2N	N4205-2N	Y	N	140	N	N	N	300	8	?	4.1	0.023	V0	V0	1 (D/S), 3 (M/L)		21	N	Not used by SCL
	N4000-6	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4105-6	N4205-6	N	H	175	N	N	N	325	4	?	4.1	0.023	V0	V0	1 (D/S), 3 (M/L)		24 / 26 / 28	N	Our standard high Tg FR4
	N4000-7	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4105-7	N4205-7	N	M	155	Y	Y	Y	330	16	?	4.0	0.017	V0	V0	1 (D/S), 3 (M/L)		24 / 98	N	Arguably lead free compatible
	N4000-7SI	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4105-7SI	N4205-7SI	N	M	155	Y	Y	Y	330	16	?	3.6	0.015	V0	V0	1 (D/S), 3 (M/L)		24 / 98	N	
	N4000-7EF	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4105-7EF	N4205-7EF	N	M	165	Y	Y	N	425	30	2	4.0	0.016	V0	N			94	Y	
	N4000-7NF	Pre-preg	Nelco / Lamar	Nelco	N4205-7NF	N4205-7NF	Y	M	155	Y	Y	Y	330	16	?	4.0	0.017	V0	V0	1 (D/S), 3 (M/L)		24 / 98	N	Assumed similar to -7
	N4000-11	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4105-11	N4205-11	N	H	170	Y	Y	Y	345	30	?	4.1	0.020	V0	V0	3 or 12 (M/L)		26 / 28 / 83 / 98	N	
	N4000-13	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4103-13	N4203-13	N	H	210	Y	N	N	350	30	10	3.7	0.009	V0	V0	3 or 12 (M/L)		29	N	
	N4000-13SI	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4103-13SI	N4203-13SI	N	H	210	Y	N	N	350	30	10	3.4	0.008	V0	V0	3 or 12 (M/L)		29	N	Signal Integrity
	N4000-13EP	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4103-13EP	N4203-13EP	N	H	210	Y	N	N	350	30	10	3.7	0.009	V0	V0	3 or 12 (M/L)		29	N	Especially suitable for lead free
	N4000-29	Laminate and Pre-preg	Nelco / Lamar	Nelco	N4105-29	N4205-29	N	H	185	Y	Y	Y	350	60	15	4.3	0.015	V0	V0	3 or 12 (M/L)		26 / 28 / 83 / 98 / 99 / 101 / 126	N	High Tg Lead Free Assy
	IT180		ITEQ Europe	ITEQ	IT180N	IT180N	Y	H	165	Y	N	N	328		10.5 (@288)	4.7	0.018	V0	N			124 / 129	N	
	R-1566	Laminate and Pre-preg	Lamar	Matsushita	R-1566W	R-1561W	N	M	152	Y	N	N	330	120	22	4.7	0.011	V0	V0	3 (M/L)	500	94	Y	
	VT-47	Laminate and Pre-preg	B & C	Ventec	VT-47TC	VT-47FP	N	H	170	Y	Y	Y	345	60	10	4.15	0.018	V0	N		175	26 / 97 / 98 / 99 / 101 / 126	N	
	VT-47NF	Pre-preg	B & C	Ventec	VT-47NFP	VT-47NFP	Y	H	170	Y	Y	Y	345	60	10	4.15	0.018	V0	N		175	26 / 97 / 98 / 99 / 101 / 126	N	
	VT-48	Laminate and Pre-preg	B & C	Ventec	VT-48TC	VT-48PP	N	M	150	Y	Y	Y	345	75	25	4.45	0.017	V0	V0	3 (M/L)	175	97 / 98 / 99 / 101	N	
	51N-LF	Pre-preg	Holders	Arlon	51N-LF	51N-LF	Y	H	170	Y	N	N	368	60	30	4.1	0.020	V0	N			124	N	Not IPC rated (yet)
	33N	Laminate and Pre-preg	Holders	Arlon	33N	33N	N	H	250	Y	N	N	390	60	23	4	0.010	V1	V1	11		40/41		
35N	Laminate and Pre-preg	Holders	Arlon	35N	35N	N	H	250	Y	N	N	407	60	60	3.4	0.010	V1	V1	7		40/41		Our standard polyimide. Claimed Er is 4.2	
85N	Laminate and Pre-preg	Holders	Arlon	85N	85N	N	H	250	Y	N	N	407	60	60	4.2*	0.010	HB	N			40 / 41	Y		
84N	Laminate and Pre-preg	Holders	Arlon	84N	84N	N	H	250	N	N	N	407	60	60	4.2*	0.010	HB	N			40 / 41	Y	Filled 85N for hole fill	
37N	Pre-preg	Holders	Arlon	37N	37N	Y	H	200	Y	N	N	340	60	5	4.25*	0.018	V0	N			42	N	Flammability ???	
N7000-2	Laminate and Pre-preg	Nelco / Lamar	Nelco	N7205-2	N7305-2	N	H	250	Y	N	N	376	12	?	3.8	0.015	N/A	N			40 / 41 / 42			
N7000-2V0	Laminate and Pre-preg	Nelco / Lamar	Nelco	N7205-2V0	N7305-2V0	N	H	250	Y	N	N	390	30	?	3.8	0.010	V0	V0	10		40 / 41 / 42			
P96 / P26	Laminate and Pre-preg	CCI Eurolam	Isola	P96	P26	N	H	260	Y	N	N	416	?	?	3.8	0.017	V0	V0	9	100	40/41/42		V1 if uncoated or EMP110; V0 if Sun	
PTFE Alternative	RO4003	Laminate	Rogers	Rogers	RO4003C	RO4403B	N	H	280	Y	?	425	?	?	3.55	0.002	N/A	N			IPC-4103/10			
	RO4350	Laminate	Rogers	Rogers	RO4350B	RO4450B	N	H	280	Y	?	390	?	?	3.17	0.004	N/A	N			IPC-4103/10?			
PTFE	RT / Duroid 6010	Laminate	Rogers	Rogers	RT / Duroid 6010	RO4450B	N	H	?	Y	?	390	?	?	3.54	0.004	V0	N			IPC-4103/11?			
							N	H	?	Y	?	500	?	?	10.2	0.0023	V0	N			?			
BT Epoxy	N5000	Laminate and Pre-preg	Nelco / Lamar	Nelco	N5105 / N5205	N5305	N	H	185	Y	N	334	12	?	3.6	0.014	V0	N			30			
	N5000-30	Laminate and Pre-preg	Nelco / Lamar	Nelco	N5105-30 / N5205-30	N5305-30	N	H	205	Y	N	344	12	?	4.1	0.009	V0	N			30		High performance	
	N5000-32	Laminate and Pre-preg	Nelco / Lamar	Nelco	N5105-32 / N5205-32	N5305-32	N	H	205	Y	N	344	12	?	4.1	0.009	V0	N			30		High performance, black	
Thermount	G200	Laminate and Pre-preg	CCI Eurolam	Isola	G200	G200	N	H	180	N	N	325	?	?	3.85	0.013	V0	Y	1 (D/S), 2A (M/L)	175	IPC-4101/30	N		
	55NT	Epoxy lam and P/P	Holders	Arlon					170	N	N				3.7	0.013	V0	N			55	N		
	85NT	Polyimide lam and P/P	Holders	Arlon					240						3.6		N/A	N			53			
	AP....	C/Clad Adhesiveless	DuPont	DuPont	AP....		N		195		N				3.4		V0	Y	6		IPC-4204/11		Use if UL marking is required. Std flex c/clad	
	Espanex SB....	C/Clad Adhesiveless	Holders	Nippon	SB....		N		195?		N				3.5		V0	Y	5		N		Use if UL marking is required. Alt. flex c/clad	
	Mataloyal	C/Clad Adhesiveless	Holders	Toray			N		195?		N						V0	N			N		2um and 4um copper clad	
	LF....	C/Clad Acr. adhesive	DuPont	DuPont	LF....		N		60?		N				3.6		N/A	N			IPC-4204/1		No UL rating	
	FR....	Coverlay Acr. Adhesive	DuPont	DuPont	FR....		N		?		N				3.5	0.020	VTM-94V0	N			IPC-4203/1		UL rated but we cannot mark	
	LF....	Coverlay Acr. Adhesive	DuPont	DuPont	LF....		N		60		N				3.6		N/A	N			IPC-4203/1		No UL rating	
	Nikalflex	Coverlay ??? Adhesive	DuPont	DuPont			N		130		N						V0	N			IPC-4203		Epoxy adhesive	
Flex (PI)	Espanex SPC....	Coverlay Poly Adhesive	Holders	Nippon		SPC....	N		120	N	<300					V0	Y	5 or 6		N		Use if UL marking is required		
	FR....	Bond Ply Acr. Adhesive	DuPont	DuPont	FR....		N		?		N				3.5	0.020	VTM-94V0	N			IPC-4203/1		UL rated but we cannot mark	
	LF....	Bond Ply Acr. Adhesive	DuPont	DuPont	LF....		N		60		N				3.6		N/A	N			IPC-4203/1		No UL rating	
	Espanex SPB....	Bond Ply Poly Adhesive	Holders	Nippon	SPB....		N		120		N				3.4		V0	Y	5 or 6		N		Use if UL marking is required	
	G1910	Film dielectric	Sheldahl	Sheldahl			N		120		N				3.0		V0	Y						
Flex (PEN) Buried Resistor		Laminate	Ohmega	Ohmega																				
		Photoimageable Solder resist	Ohmega	Ohmega																				
Solder resist	XV501T-4	Liquid Photoimageable Solder resist	Sun Chemicals	Sun Chemicals													V0	Y	As above					
Legend	XV501T-4	Legend	Sun Chemicals	Sun Chemicals													V0	Y	As above					
Resin via fill	THP 100DX1	Epoxy resin via fill	Taiyo	Taiyo													V0	Y	As above					

Note UL ratings:

SCL UL File number: E107779

Highest V0 or VTM-94V0
V1
HB
Least None

For UL marking:

- 1) No mixing of families is permitted except for Flex and FRs which can mix "FR4", "FR406N", "AP....", "SB....", "SPC....", "SPB...." together
- 2) We must use Sun Chemicals (Coates) SIR (our standard) on rigid material (rigid or flex-rigid)
- 3) We must use SPC Coverlay or NPR80 (flex brown resist) on flex material (flexis or flex-rigid)

Finishes in house: Ni / Au

Finishes (Tru-Lon): Immersion Silver, Electroplated Hard / Soft Gold

Finishes (sub-contract): HASL, Ni / Pd / Au, Immersion Tin, Entek