UL Solutions Product iQ®

Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

COMPANY
SHANDONG JINBAO ELECTRONICS CO LTD
ZHAOYUAN 268
GUO DA ROAD
YANTAI, Shandong 265406 China

E141940

Industrial laminates:

Mtl Dsg	ANSI Type	Color	Build up Min Thk (mm)	Flame Class	R.T.I. Elec (°C)	R.T.I. Mech (°C)	H W I	H A I	H V T R	H C T I	Meets 746E Non-HAL	Meets 746E DSR
Epoxy (EP) Industrial laminates furnished as sheets												
ZD-3600, HR-3600												
	No ANSI	NC	1.63	V-0	90	90	0	0	-	0	-	Yes
			0.63	V-0	90	90	0	0	-	-	-	Yes
Industrial laminates furnished as sheets												
ZD-16F	FR-4.0	NC	1.40	V-0	130	140	0	2	-	4	-	Yes
			0.63	V-0	130	140	0	3	-	-	-	Yes
ZD-68(G)F1	No ANSI	NC	1.60	V-0	-	-	-	-	-	-	-	-
			0.80	V-0	-	-	-	-	-	-	-	-
ZD-8190	FR-4.1	NC	1.40	V-0	130	140	0	0	-	3	Yes	Yes
			0.63	V-0	130	140	0	0	-	-	-	Yes
			0.38	V-0	130	130	0	0	-	-	-	Yes
			0.20	V-0	130	130	0	0	-	-	-	Yes
			0.10	V-0	125	130	0	0	-	-	-	Yes
			0.05	V-0	120	130	0	0	-	-	-	Yes
			0.03	V-0	120	130	0	0	-	-	-	Yes
ZD-8200	FR-15.1	NC	1.40	V-0	150	150	0	0	-	3	Yes	Yes
			0.63	V-0	150	150	0	0	-	-	-	Yes
			0.38	V-0	150	150	0	0	-	-	-	Yes
			0.20	V-0	140	150	0	0	-	-	-	Yes
			0.10	V-0	125	150	0	0	-	-	-	Yes
			0.05	V-0	120	140	0	0	-	-	-	Yes
			0.03	V-0	120	140	0	0	-	-	-	Yes
ZD-8600, ZD-8700												
	No ANSI	NC	0.10	V-0	85	130	0	1	-	-	Yes	Yes
			0.20	V-0	90	130	0	0	-	-	-	Yes
			0.38	V-0	90	140	0	0	-	-	-	Yes
			0.63	V-0	100	155	0	0	-	-	-	Yes
			1.50	V-0	105	155	0	0	-	3	-	Yes
ZD-8800, ZD-8900												
	No ANSI	NC	1.40	V-0	150	180	0	0	-	3	Yes	Yes
			0.63	V-0	150	180	0	0	-	-	-	Yes
			0.38	V-0	150	180	0	0	-	-	-	Yes
			0.20	V-0	140	180	0	0	-	-	-	Yes
			0.10	V-0	125	170	0	0	-	-	-	Yes
			0.05	V-0	120	140	0	0	-	-	-	Yes
			0.03	V-0	120	140	0	0	-	-	-	Yes
ZD-90F (without Adhesive)												
	FR-1	NC	0.71	V-0	130	130	3	3	-	-	-	Yes

			1.45	V-0	130	130	3	3	-	4	-	Yes
ZD-9300	FR-15.0	NC	1.40	V-0	150	150	0	0	-	2	-	Yes
			0.63	V-0	150	150	0	0	-	-	-	Yes
			0.38	V-0	150	150	0	0	-	-	-	Yes
			0.20	V-0	150	150	0	0	-	-	-	Yes
			0.10	V-0	140	130	0	0	-	-	-	Yes
ZD-9400,ZD-9500	FR-4.0	NC	1.40	V-0	130	140	0	0	-	2	-	Yes
			0.63	V-0	130	140	0	0	-	-	-	Yes
			0.38	V-0	130	130	0	0	-	-	-	Yes
			0.20	V-0	130	130	0	0	-	-	-	Yes
			0.10	V-0	130	130	0	0	-	-	-	Yes
ZD-95(G)F1	CEM-1	NC	1.40	V-0	130	140	1	2	-	0	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
ZD-95(G)F3	CEM-1	NC	1.40	V-0	130	140	1	2	-	3	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
ZD-95(G)F4	CEM-1	NC	1.40	V-0	130	140	1	2	-	0	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
ZD-95(G)F5	CEM-1	NC	1.40	V-0	130	140	1	2	-	3	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
ZD-95(G)F6	CEM-1	NC	1.40	V-0	130	140	1	2	-	0	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
ZD-9600,ZD-9700	No ANSI	NC	1.45	V-0	180	160	0	0	-	3	-	Yes
			0.75	V-0	180	160	0	0	-	-	-	Yes
			0.40	V-0	180	150	0	0	-	-	-	Yes
			0.20	V-0	160	140	0	0	-	-	-	Yes
			0.10	V-0	140	125	0	0	-	-	-	Yes
Industrial laminates furnished as sheets, rods or tubes												
ZD-68(G)F	No ANSI	NC	1.60	V-1	-	-	-	-	-	-	-	-
			1.20	V-1	-	-	-	-	-	-	-	-
			0.80	V-1	-	-	-	-	-	-	-	-
ZD-90, ZD-90Y	XPC	NC	1.60	HB	130	130	3	3	4	-	-	-
			0.71	HB	130	130	4	4	4	-	-	-
ZD-90FA (with adhesive)												
	FR-1	NC	1.45	V-0	130	130	0	0	-	3	-	Yes
			0.71	V-0	130	130	0	0	-	-	-	Yes
ZD-90FA1 (without adhesive)												
	FR-1	NC	1.45	V-0	130	130	3	3	-	4	-	Yes
			0.71	V-0	130	130	3	3	-	-	-	Yes
ZD-95(G)F	CEM-1	NC	1.60	V-0	130	140	1	2	4	3	-	Yes
			0.63	V-0	130	140	3	2	4	-	-	Yes
ZD-98F	CEM-3.0	NC	0.63	V-0	130	140	0	2	4	-	-	Yes
			1.60	V-0	130	140	0	2	4	3	-	Yes

Ultrathin build ups:

Build Up					Laminate			Prepreg		
Mtl Dsg	ANSI Type	Min Thk (mm)	TI Elec	TI Mech	Mtl Dsg	Thk (mic)	TI Elec	Mtl Dsg	Thk (mic)	TI Elec
ZD-8190/ZDP-8190										
	FR-4.1	0.63	130	140	ZD-8190	30	120	ZDP-8190	30	120
		0.20	130	130	ZD-8190	30	120	ZDP-8190	30	120
		0.10	125	130	ZD-8190	30	120	ZDP-8190	30	120
ZD-8200/ZDP-8200										
	FR-15.1	0.38	150	150	ZD-8200	30	120	ZDP-8200	30	120
		0.20	140	150	ZD-8200	30	120	ZDP-8200	30	120
		0.10	125	150	ZD-8200	30	120	ZDP-8200	30	120
ZD-8600,ZD-8700/ZDP-8600,ZDP-8700										

	No ANSI	0.10	85	130	ZD-8600,ZD-8700	50	50	ZDP-8600,ZDP-8700	50	50
		0.20	90	130	ZD-8600,ZD-8700	50	50	ZDP-8600,ZDP-8700	50	50
		0.38	90	140	ZD-8600,ZD-8700	50	50	ZDP-8600,ZDP-8700	50	50
		0.63	100	155	ZD-8600,ZD-8700	50	50	ZDP-8600,ZDP-8700	50	50
		1.50	105	155	ZD-8600,ZD-8700	50	50	ZDP-8600,ZDP-8700	50	50
ZD-8800, ZD-8900/ZDP-8800, ZDP-8900										
	No ANSI	0.38	150	180	ZD-8800, ZD-8900	30	120	ZDP-8800, ZDP-8900	30	120
		0.20	140	180	ZD-8800, ZD-8900	30	120	ZDP-8800, ZDP-8900	30	120
		0.10	125	170	ZD-8800, ZD-8900	30	120	ZDP-8800, ZDP-8900	30	120
ZD-9300/ZDP-9300										
	FR-15.0	0.20	150	150	ZD-9300	50	50	ZDP-9300	50	50
ZD-9400,ZD-9500/ZDP-9400,ZDP-9500										
	FR-4.0	0.20	130	130	ZD-9400,ZD-9500	50	50	ZDP-9400,ZDP-9500	50	50
		0.63	130	140	ZD-9400,ZD-9500	50	50	ZDP-9400,ZDP-9500	50	50
ZD-9600,ZD-9700/ZDP-9600,ZDP-9700										
	No ANSI	0.20	160	140	ZD-9600,ZD-9700	35	50	ZDP-9600,ZDP-9700	35	50
		0.40	180	150	ZD-9600,ZD-9700	35	50	ZDP-9600,ZDP-9700	35	50
		0.75	180	160	ZD-9600,ZD-9700	35	50	ZDP-9600,ZDP-9700	35	50

Metal clad industrial laminates:

				Bld up	Clad Cond Thk			Max		Max	Assembly Solder		Solder Lts	
Metal Clad Dsg	Lam-inate Dsg	Pre-preg Dsg	ANSI Type	Min Thk (mm)	Min Ext (mic)	Max Ext (mic)	Max Int (mic)	Area Dia (mm)	Flame Class	Oper Temp (°C)	Process Temp(°C)	Process Cycles	Temp (°C)	Time (sec)
Epoxy (EP) Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets														
ZD-3600, HR-3600														
	ZD-3600, HR-3600	-	No ANSI	0.63	17	102	-	25	V-0	90	-	-	288	20
Metal clad industrial laminates for use in multilayer printed wiring boards with copper on one or both sides, furnished as sheets														
ZD-8190/ZDP-8190														
	ZD-8190	ZDP-8190	FR-4.1	0.31	17	102	68	50.8	V-0	130	-	-	288	20
ZD-8200/ZDP-8200														
	ZD-8200	ZDP-8200	FR-15.1	0.31	17	102	68	50.8	V-0	130	-	-	288	20
ZD-8600,ZD-8700/ZDP-8600,ZDP-8700														
	ZD-8600,ZD-8700	ZDP-8600,ZDP-8700	No ANSI	0.38	17	102	68	50.8	V-0	90	-	-	288	20
				0.63	17	102	68	50.8	V-0	100	-	-	288	20
				1.50	17	102	68	50.8	V-0	105	-	-	288	20
ZD-8800, ZD-8900/ZDP-8800, ZDP-8900														
	ZD-8800, ZD-8900	ZDP-8800, ZDP-8900	No ANSI	0.31	17	102	68	50.8	V-0	130	-	-	288	20
ZD-9300/ZDP-9300														
	ZD-9300	ZDP-9300	FR-15.0	0.38	17	102	68	50.8	V-0	130	-	-	288	20
ZD-9400,ZD-9500/ZDP-9400,ZDP-9500														
	ZD-9400,ZD-9500	ZDP-9400,ZDP-9500	FR-4.0	0.38	17	102	68	50.8	V-0	130	-	-	288	20
ZD-9600,ZD-9700/ZDP-9600,ZDP-9700														
	ZD-9600,ZD-9700	ZDP-9600,ZDP-9700	No ANSI	0.40	17	102	68	50.8	V-0	130	-	-	288	20
Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets														
ZD-8190	ZD-8190	-	FR-4.1	0.20	17	102	-	50.8	V-0	130	-	-	288	20
				0.10	17	102	-	50.8	V-0	125	-	-	288	20
				0.05	17	102	-	50.8	V-0	120	-	-	288	20
ZD-8200	ZD-8200	-	FR-15.1	0.20	17	102	-	50.8	V-0	130	-	-	288	20
				0.10	17	102	-	50.8	V-0	125	-	-	288	20
				0.05	17	102	-	50.8	V-0	120	-	-	288	20
ZD-8600,ZD-8700	ZD-8600,ZD-8700	-	No ANSI	0.10	17	102	-	50.8	V-0	85	-	-	288	20
				0.20	17	102	-	50.8	V-0	90	-	-	288	20
				0.63	17	102	-	50.8	V-0	100	-	-	288	20
				1.50	17	102	-	50.8	V-0	105	-	-	288	20
ZD-8800, ZD-8900														
	ZD-8800, ZD-8900	-	No ANSI	0.20	17	102	-	50.8	V-0	130	-	-	288	20

				0.10	17	102	-	50.8	V-0	125	-	-	288	20
				0.05	17	102	-	50.8	V-0	120	-	-	288	20
ZD-9300	ZD-9300	-	FR-15.0	0.10	17	102	-	50.8	V-0	130	-	-	288	20
ZD-9400,ZD-9500	ZD-9400,ZD-9500	-	FR-4.0	0.10	17	102	-	50.8	V-0	130	-	-	288	20
ZD-95(G)F	ZD-95(G)F	-	CEM-1	0.63	34	102	-	25.4	V-0	130	-	-	288	10
ZD-95(G)F3	ZD-95(G)F3	-	CEM-1	0.63	17	102	-	50.8	V-0	130	-	-	288	30
ZD-95(G)F4	ZD-95(G)F4	-	CEM-1	0.63	17	102	-	13.0	V-0	130	-	-	260	10
ZD-95(G)F5	ZD-95(G)F5	-	CEM-1	0.63	17	102	-	50.8	V-0	130	-	-	260	30
ZD-95(G)F6	ZD-95(G)F6	-	CEM-1	0.63	17	102	-	13.0	V-0	130	-	-	288	35
ZD-9600,ZD-9700	ZD-9600,ZD-9700	-	No ANSI	0.10	12	102	-	50.8	V-0	125	-	-	288	20
Metal clad industrial laminates for use in single layer printed wiring boards with copper on one side only, furnished as sheets														
ZD-16F	ZD-16F	-	FR-4.0	0.63	34	102	-	50.8	V-0	130	-	-	288	20
ZD-90, ZD-90Y	ZD-90, ZD-90Y	-	XPC	0.71	34	68	-	50.8	HB	130	-	-	260	10
ZD-90F (without Adhesive)														
	ZD-90F	-	FR-1	0.71	34	102	-	50.8	V-0	130	-	-	260	10
ZD-90FA	ZD-90FA	-	FR-1	0.71	34	102	-	50.8	V-0	130	-	-	260	10
ZD-95(G)F	ZD-95(G)F	-	CEM-1	0.63	34	102	-	50.8	V-0	130	-	-	288	10
ZD-95(G)F1	ZD-95(G)F1	-	CEM-1	0.63	17	102	-	50.8	V-0	130	-	-	274	10
ZD-98F	ZD-98F	-	CEM-3.0	0.63	34	102	-	50.8	V-0	130	-	-	260	10

Metal clad industrial laminates (Flammability Only Recognition):

				Bld up	Clad Cond Thk			Max		Max	Assembly Solder		Solder Lts	
Metal Clad Dsg	Lam-inate Dsg	Pre-preg Dsg	ANSI Type	Min Thk (mm)	Min Ext (mic)	Max Ext (mic)	Max Int (mic)	Area Dia (mm)	Flame Class	Oper Temp (°C)	Process Temp(°C)	Process Cycles	Temp (°C)	Time (sec)
Epoxy (EP) Metal clad industrial laminates for use in single layer printed wiring boards with copper on one side only, furnished as sheets														
ZD-68(G)F1	ZD-68(G)F1	-	No ANSI	0.80	-	-	-	-	V-0	-	-	-	260	10
Metal clad industrial laminates for use in single layer printed wiring boards with copper on one side only, furnished as sheets, rods or tubes														
ZD-68(G)F	ZD-68(G)F	-	No ANSI	0.80	-	-	-	-	V-1	-	-	-	260	10

Marking: Company name, material designation on container or wrapper.

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