

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
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Industrial laminates:

Mtl Dsg	ANSI Type	Color	Build up	Flame Class	R.T.I.		H				Meets 746E Non-HAL	Meets 746E DSR
			Min Thk (mm)		Elec (°C)	Mech (°C)	H W I	H A I	V T R	C T I		
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)FI	No ANSI	NC	1.60	V-0	-	-	-	-	-	-	-	-
			0.80	V-0	-	-	-	-	-	-	-	-
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	50	50	0	0	-	3	Yes	Yes
			0.63	V-0	50	50	0	0	-	-	-	Yes
			0.38	V-0	50	50	0	0	-	-	-	Yes
			0.20	V-0	50	50	0	0	-	-	-	Yes
			0.10	V-0	50	50	0	0	-	-	-	Yes
			0.05	V-0	50	50	0	0	-	-	-	Yes
			0.03	V-0	50	50	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)FI	CEM-1	NC	1.40	V-0	130	140	1	2	-	0	-	Yes

			0.63	V-0	130	140	3	2	-	-	-	Yes
<i>ZD-95(G)F3</i>	CEM-1	NC	1.40	V-0	130	140	1	2	-	3	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
<i>ZD-95(G)F4</i>	CEM-1	NC	1.40	V-0	130	140	1	2	-	0	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
<i>ZD-95(G)F5</i>	CEM-1	NC	1.40	V-0	130	140	1	2	-	3	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
<i>ZD-95(G)F6</i>	CEM-1	NC	1.40	V-0	130	140	1	2	-	0	-	Yes
			0.63	V-0	130	140	3	2	-	-	-	Yes
<i>ZD-9600,ZD-9700</i>	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												
<i>ZD-68(G)F</i>	No ANSI	NC	1.60	V-1	-	-	-	-	-	-	-	-
			1.20	V-1	-	-	-	-	-	-	-	-
			0.80	V-1	-	-	-	-	-	-	-	-
<i>ZD-90, ZD-90Y</i>	XPC	NC	1.60	HB	130	130	3	3	4	-	-	-
			0.71	HB	130	130	4	4	4	-	-	-
<i>ZD-90FA (with adhesive)</i>												
	FR-1	NC	1.45	V-0	130	130	0	0	-	3	-	Yes
			0.71	V-0	130	130	0	0	-	-	-	Yes
<i>ZD-90FA1 (without adhesive)</i>												
	FR-1	NC	1.45	V-0	130	130	3	3	-	4	-	Yes
			0.71	V-0	130	130	3	3	-	-	-	Yes
<i>ZD-95(G)F</i>	CEM-1	NC	1.60	V-0	130	140	1	2	4	3	-	Yes
			0.63	V-0	130	140	3	2	4	-	-	Yes
<i>ZD-98F</i>	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	
<i>ZD-8600,ZD-8700/ZDP-8600,ZDP-8700</i>											
	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	
<i>ZD-8800, ZD-8900</i>											
	No ANSI	0.1	50	50	ZD-8800, ZD-8900	30	50	ZDP-8800, ZDP-8900	30	50	
<i>ZD-9300/ZDP-9300</i>											
	FR-15.0	0.20	150	150	ZD-9300	50	50	ZDP-9300	50	50	
<i>ZD-9400,ZD-9500/ZDP-9400,ZDP-9500</i>											
	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	
<i>ZD-9600,ZD-9700/ZDP-9600,ZDP-9700</i>											
	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:

Metal Clad	Lam-inate	Pre-preg	ANSI	Bld up		Clad Cond Thk			Max Area Dia	Flame	Max Oper Temp	Assembly Solder		Solder Lts	
				Min Thk	Min Ext	Max Ext	Max Int					Process Temp(°C)	Process Cycles	Temp	Time

Dsg	Dsg	Dsg	Type	(mm)	(mic)	(mic)	(mic)	(mm)	Class	(°C)		(°C)	(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													
<i>ZD-3600, HR-3600</i>													
	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													
<i>ZD-8600,ZD-8700/ZDP-8600,ZDP-8700</i>													
	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
<i>ZD-8800, ZD-8900/ZDP-8800, ZDP-8900</i>													
	ZD-8800, ZD-8900	ZDP-8800, ZDP-8900	No ANSI	0.31	17	102	68	50.8	V-0	50	-	-	288 20
<i>ZD-9300/ZDP-9300</i>													
	ZD-9300	ZDP-9300	FR-15.0	0.38	17	102	68	50.8	V-0	130	-	-	288 20
<i>ZD-9400,ZD-9500/ZDP-9400,ZDP-9500</i>													
	ZD-9400,ZD-9500	ZDP-9400,ZDP-9500	FR-4.0	0.38	17	102	68	50.8	V-0	130	-	-	288 20
<i>ZD-9600,ZD-9700/ZDP-9600,ZDP-9700</i>													
	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													
<i>ZD-8600,ZD-8700</i>	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
<i>ZD-8800, ZD-8900</i>													
	ZD-8800, ZD-8900	-	No ANSI	0.05	17	102	-	50.8	V-0	50	-	-	288 20
<i>ZD-9300</i>	ZD-9300	-	FR-15.0	0.10	17	102	-	50.8	V-0	130	-	-	288 20
<i>ZD-9400,ZD-9500</i>	ZD-9400,ZD-9500	-	FR-4.0	0.10	17	102	-	50.8	V-0	130	-	-	288 20
<i>ZD-95(G)F</i>	ZD-95(G)F	-	CEM-1	0.63	34	102	-	25.4	V-0	130	-	-	288 10
<i>ZD-95(G)F3</i>	ZD-95(G)F3	-	CEM-1	0.63	17	102	-	50.8	V-0	130	-	-	288 30
<i>ZD-95(G)F4</i>	ZD-95(G)F4	-	CEM-1	0.63	17	102	-	13.0	V-0	130	-	-	260 10
<i>ZD-95(G)F5</i>	ZD-95(G)F5	-	CEM-1	0.63	17	102	-	50.8	V-0	130	-	-	260 30
<i>ZD-95(G)F6</i>	ZD-95(G)F6	-	CEM-1	0.63	17	102	-	13.0	V-0	130	-	-	288 35
<i>ZD-9600,ZD-9700</i>	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													
<i>ZD-16F</i>	ZD-16F	-	FR-4.0	0.63	34	102	-	50.8	V-0	130	-	-	288 20
<i>ZD-90, ZD-90Y</i>	ZD-90, ZD-90Y	-	XPC	0.71	34	68	-	50.8	HB	130	-	-	260 10
<i>ZD-90F (without Adhesive)</i>													
	ZD-90F	-	FR-1	0.71	34	102	-	50.8	V-0	130	-	-	260 10
<i>ZD-90FA</i>	ZD-90FA	-	FR-1	0.71	34	102	-	50.8	V-0	130	-	-	260 10
<i>ZD-95(G)F</i>	ZD-95(G)F	-	CEM-1	0.63	34	102	-	50.8	V-0	130	-	-	288 10
<i>ZD-95(G)F1</i>	ZD-95(G)F1	-	CEM-1	0.63	17	102	-	50.8	V-0	130	-	-	274 10
<i>ZD-98F</i>	ZD-98F	-	CEM-3.0	0.63	34	102	-	50.8	V-0	130	-	-	260 10

Metal clad industrial laminates (Flammability Only Recognition):

Metal Clad Dsg	Lam- inate Dsg	Pre- preg Dsg	ANSI Type	Bld up	Clad Cond Thk				Max	Flame Class	Max	Assembly Solder		Solder Lts	
				Min Thk (mm)	Min Ext (mic)	Max Ext (mic)	Max Int (mic)	Area Dia (mm)	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															
<i>ZD-68(G)F1</i>	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															
<i>ZD-68(G)F</i>	ZD-68(G)F	-	No ANSI	0.80	-	-	-	-	V-1	-	-	-		260	10

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