

SECTION I

LIST OF MANUFACTURERS' QUALIFIED CAPABILITIES FOR EACH TECHNOLOGY

MANUFACTURER INFORMATION: Firan Technology Group 250 Finchdene Square, Scarborough, M1X 1A5, Ontario Canada	PLANT LOCATION: Same Address as Manufacturer	CAGE Code: L2665 Phone: 416-299-4000 Fax: 416-292-4308 E-Mail: info@ftgcorp.com
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CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
 Qualification Letters: VQE-05-009339, VQE-06-010764, VQE-06-010889, VQE-15-028987, VQE-16-030295, VQE-17-031083, VQE-17-031084
 Rigid Base Material: BI: Aramid Fabric, Nonwoven, Polyimide Resin
 Max. Panel Size: 18" x 24"
 Max. Number of Layers: 14
 Max. Board Thickness: .106"
 Min. Hole Size: .02" Drilled Plated-Through Hole Before Plating
 Aspect Ratio: 5.1:1 Through-Hole
 Min. Conductor Width/Space: .004"/.004"
 Hole Preparation: Permanganate Desmear, Plasma Etchback
 Hole Wall Conductive Coating: Electroless Copper
 Copper Plating: Direct Current Plate, Pulse Plate
 Solder Resist: Dry Film, Liquid Photoimageable
 Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb, ImmAg
 Additional Fab Capabilities: Foil Lamination
 Controlled Impedance: Differential, Single-Ended

CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
 Qualification Letters: VQE-05-009339, VQE-06-010764, VQE-06-010889, VQE-15-028987, VQE-16-030295, VQE-17-031083
 Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant
 Max. Panel Size: 18" x 24"
 Max. Number of Layers: 30
 Max. Board Thickness: .245"
 Min. Hole Size: .005" Laser Ablated Plated Hole Size Before Plating, .008" Drilled Plated-Through Hole Before Plating
 Aspect Ratio: 1.01:1 Microvia, 15.9:1 Through-Hole
 Min. Conductor Width/Space: .004"/.003"
 Hole Preparation: Permanganate Desmear, Plasma Etchback
 Hole Wall Conductive Coating: Electroless Copper
 Copper Plating: Direct Current Plate, Pulse Plate
 Hole Fill/Via Plug: Non-Conductive
 Solder Resist: Dry Film, Liquid Photoimageable
 Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb, ImmAg
 Additional Fab Capabilities: Blind Vias, Buried Vias, Foil Lamination, Sequential Lamination
 Controlled Impedance: Differential, Single-Ended

CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
 Qualification Letters: VQE-05-009339, VQE-06-010764, VQE-06-010889, VQE-15-028987, VQE-16-030295, VQE-17-031083
 Rigid Base Material: GI: Glass Base, Woven, Polyimide Resin, Heat Resistant
 Max. Panel Size: 21" x 24"
 Max. Number of Layers: 20
 Max. Board Thickness: .17"
 Min. Hole Size: .0059" Laser Ablated Plated Hole Size Before Plating, .01" Drilled Plated-Through Hole Before Plating
 Aspect Ratio: 0.6:1 Microvia, 9.6:1 Through-Hole
 Min. Conductor Width/Space: .0035"/.003"
 Hole Preparation: Permanganate Desmear, Plasma Etchback
 Hole Wall Conductive Coating: Electroless Copper
 Copper Plating: Direct Current Plate, Pulse Plate
 Hole Fill/Via Plug: Non-Conductive
 Solder Resist: Dry Film, Liquid Photoimageable
 Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb, ImmAg
 Additional Fab Capabilities: Blind Vias, Foil Lamination, Sequential Lamination
 Controlled Impedance: Differential, Single-Ended

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CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
 Qualification Letters: VQE-05-009339, VQE-06-010764, VQE-06-010889, VQE-15-028987, VQE-16-030295, VQE-17-031083
 Rigid Base Material: GM: Glass Base, Woven, Triazine and/or Bismaleimide Modified Epoxy Resin, Flame Resistant
 Max. Panel Size: 21" x 24"
 Max. Number of Layers: 24
 Max. Board Thickness: .137"
 Min. Hole Size: .01" Drilled Plated-Through Hole Before Plating
 Aspect Ratio: 9.3:1 Through-Hole
 Min. Conductor Width/Space: .004"/.0037"
 Hole Preparation: Permanganate Desmear, Plasma Etchback
 Hole Wall Conductive Coating: Electroless Copper
 Copper Plating: Direct Current Plate, Pulse Plate
 Hole Fill/Via Plug: Non-Conductive
 Solder Resist: Dry Film, Liquid Photoimageable
 Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb, ImmAg
 Additional Fab Capabilities: Blind Vias, Foil Lamination, Sequential Lamination

CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/3, MIL-PRF-31032/4
 Qualification Letters: VQE-15-029018, VQE-16-030295
 Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant
 Flex Base Material: Copper Clad Adhesiveless Polyimide
 Max. Panel Size: 12" x 18"
 Max. Number of Layers: 12
 Max. Board Thickness: .086"
 Min. Hole Size: .008" Drilled Plated-Through Hole Before Plating
 Aspect Ratio: 10:1
 Min. Conductor Width/Space: .004"/.004"
 Hole Preparation: Plasma Desmear
 Hole Wall Conductive Coating: Electroless Copper
 Copper Plating: Direct Current Plate
 Solder Resist: Liquid Photoimageable
 Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb, ImmAg
 Flex Usage: Use A (Flex During Installation)