

**SECTION I**  
**LIST OF MANUFACTURERS' QUALIFIED CAPABILITIES FOR EACH TECHNOLOGY**

<b>MANUFACTURER INFORMATION:</b> <b>FTG Circuits Fredericksburg Inc.</b> 1026 Warrenton Road, Fredericksburg, VA, 22406-6200 US	<b>PLANT LOCATION:</b> Same Address as Manufacturer	<b>CAGE Code:</b> 6T499 <b>Phone:</b> 540-753-5511, x177 <b>Fax:</b> 540-752-2109 <b>EMail:</b> quality@colonialcircuits.com
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**CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION**

Specification: MIL-PRF-31032/3, MIL-PRF-31032/4  
 Qualification Letters: VQ(VQE-23-038137)  
 Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant  
 Flex Base Material: Copper Clad Adhesiveless Polyimide  
 Max. Panel Size: 18" x 24"  
 Max. Number of Layers: 6  
 Max. Board Thickness: .065"  
 Min. Hole Size: .0138" Drilled Plated-Through Hole Before Plating  
 Aspect Ratio: 4.9:1 Through-Hole  
 Min. Conductor Width/Space: .005"/.007"  
 Hole Preparation: Plasma Desmear  
 Hole Wall Conductive Coating: Carbon-based  
 Copper Plating: Direct Current Plate, Pulse Plate  
 Solder Resist: Liquid Photoimageable  
 Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb, ImmAg  
 Flex Usage: Use A (Flex During Installation)

**CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION**

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2  
 Qualification Letters: VQ(VQE-21-035719), VQE-04-6002  
 Composition: S - Homogenous thermosetting base material printed boards  
 Rigid Base Material: GI: Glass Base, Woven, Polyimide Resin, Heat Resistant  
 Max. Panel Size: 18" x 24"  
 Max. Number of Layers: 14  
 Max. Board Thickness: .088"  
 Min. Hole Size: .021" Drilled Plated-Through Hole Before Plating  
 Aspect Ratio: 4.2:1 Through-Hole  
 Min. Conductor Width/Space: .006"/.005"  
 Hole Preparation: Plasma Desmear, Plasma Etchback  
 Hole Wall Conductive Coating: Carbon-based  
 Copper Plating: Direct Current Plate  
 Solder Resist: Liquid Photoimageable  
 Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb  
 Additional Fab Capabilities: Foil Lamination

**CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION**

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2  
 Qualification Letters: VQ(VQE-21-035719), VQE-04-6002, VQE-20-034719  
 Composition: S - Homogenous thermosetting base material printed boards  
 Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant  
 Max. Panel Size: 18" x 24"  
 Max. Number of Layers: 16  
 Max. Board Thickness: .127"  
 Min. Hole Size: .015"  
 Aspect Ratio: 8.5:1 Through-Hole  
 Min. Conductor Width/Space: .005"/.004"  
 Hole Preparation: Plasma Desmear, Plasma Etchback  
 Hole Wall Conductive Coating: Carbon-based  
 Copper Plating: Direct Current Plate  
 Solder Resist: Liquid Photoimageable  
 Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb  
 Additional Fab Capabilities: Foil Lamination

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**CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION**

Specification: MIL-PRF-31032/3, MIL-PRF-31032/4  
 Qualification Letters: VQE-04-6002  
 Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant; GI: Glass Base, Woven, Polyimide Resin, Heat Resistant  
 Flex Base Material: Copper Clad Polyimide with Acrylic Adhesive  
 Max. Panel Size: 12" x 18"  
 Max. Number of Layers: 10  
 Max. Board Thickness: .093"  
 Min. Hole Size: .025" Drilled Plated-Through Hole Before Plating  
 Aspect Ratio: 3.7:1 Through-Hole  
 Min. Conductor Width/Space: .005"/.005"  
 Hole Preparation: Plasma Desmear, Plasma Etchback  
 Hole Wall Conductive Coating: Carbon-based  
 Copper Plating: Direct Current Plate, Pulse Plate  
 Solder Resist: Liquid Photoimageable  
 Finish System: ENIG, HASL, ImmAg  
 Flex Usage: Use A (Flex During Installation),