

1.0 PURPOSE/SCOPE

- 1.1 This document defines the design rules for the polyimide bridges.
- 1.2 This policy applies to all polyimide bridges manufactured by Applied Thin-Film Products.

2.0 BRIDGE DESIGN RULES

- 2.1 The minimum contact area (the area where the bridge attaches to the conductor) should be 1.0 mil (645 microns). *See Figure 1*
- 2.2 All bridges are plated to a minimum thickness of 160 microinches (4 microns).
- 2.3 The bridge length should be pulled back a minimum of 0.05 mil (1.27 microns) from the conductor edge. *See Figure 1*
- 2.4 Minimum bridge width is 1.0 mil (25.4 microns).
- 2.5 Unsupported areas of the bridge (the areas of the bridge that are not located on either the conductor or polyimide layer) should be kept to a minimum. *See Figure 1*

3.0 POLYIMIDE DESIGN RULES

- 3.1 The polyimide pad width should be three times (3X) as wide as the bridge width. *See Figure 1*
- 3.2 The length of the pad should be pulled back a minimum of 0.2 mil (5.08 microns) away from the area where the conductor contacts the bridge. Typical pullback is 50% of the gap (where applicable). *See figure 1*
- 3.3 The typical thickness of the polyimide is 160-200 microinches (4-5 microns)
- 3.4 The properties for the polyimide can be found in *Table A*.

THE DATA CONTAINED HEREIN CONSTITUTES PROPRIETARY INFORMATION OF APPLIED THIN-FILM PRODUCTS AND SHALL NOT BE USED,



SIZE	CAGE CODE	DRAWING NUMBER	REV
A	04ZMO	50031	-
SCALE		SHEET 2 OF 4	

Polyimide Properties

Tensile Strength	Mpa	215
Young's Modulus	Gpa	2.5
Tensile Elongation	%	85
Glass Transition Temperature	°C	285
Thermal Decomposition Temperature	°C	525
Coefficient of Thermal Expansion	ppm/°C	55
Coating Stress (100 silicon)	MPa	33
Dielectric Constant 1MHz; 0%/50% RH		3.2/3.3
Dissipation Factor 1 MHz; 0%/50% RH		0.003/0.008
Dielectric Strength	V/μm	345
Moisture Absorption @ 50% RH	%	1.08
Density	g/cc	1.39
Refractive Index @ 633nm		1.69

Table A

THE DATA CONTAINED HEREIN CONSTITUTES PROPRIETARY INFORMATION OF APPLIED THIN-FILM PRODUCTS AND SHALL NOT BE USED,



SIZE	CAGE CODE	DRAWING NUMBER	REV
A	04ZMO	50031	-
SCALE		SHEET 3 OF 4	

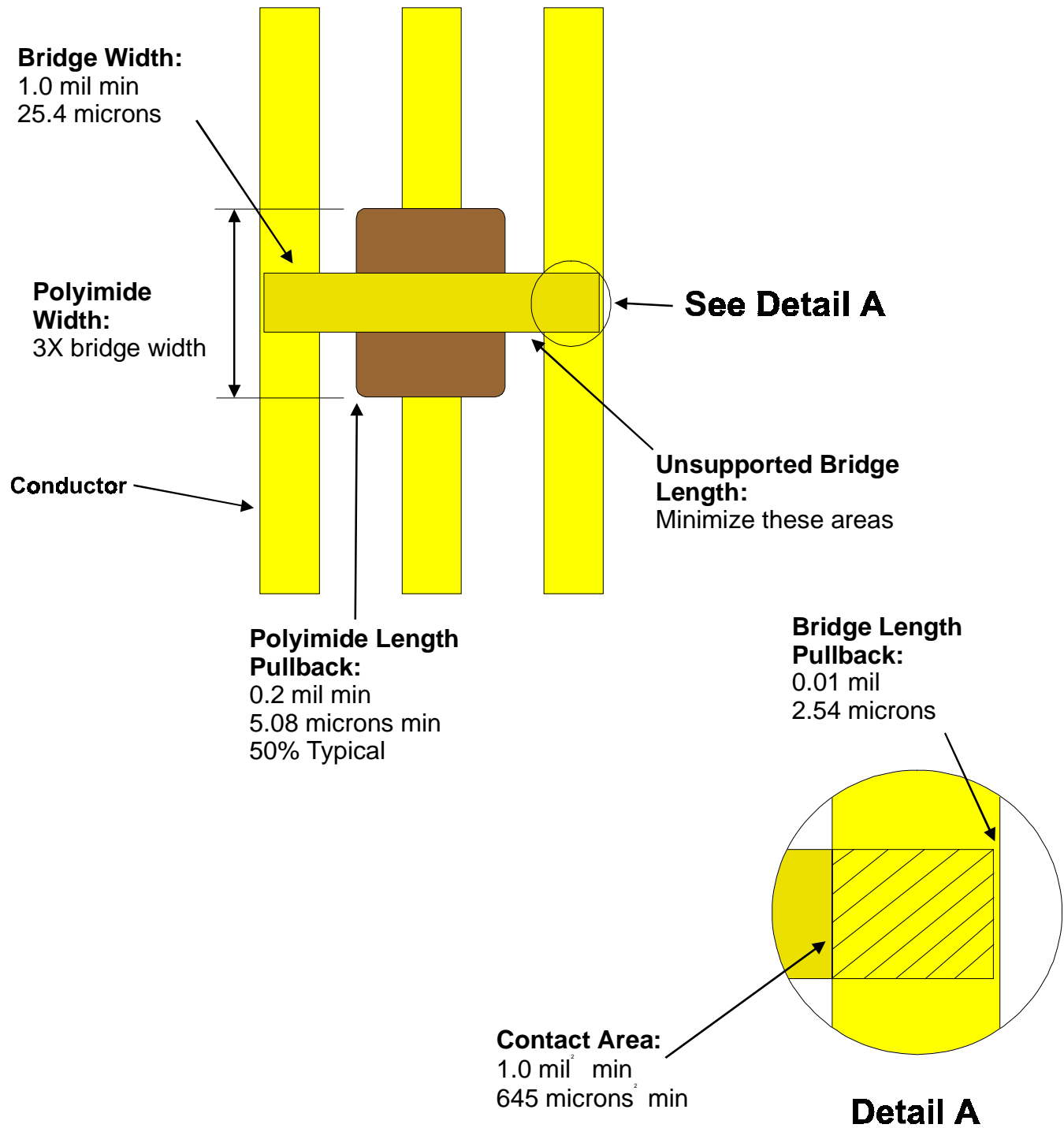


Figure 1

THE DATA CONTAINED HEREIN CONSTITUTES PROPRIETARY INFORMATION OF APPLIED THIN-FILM PRODUCTS AND SHALL NOT BE USED,



SIZE A	CAGE CODE 04ZMO	DRAWING NUMBER 50031	REV -
SCALE		SHEET 4 OF 4	