Flat Pack Pad Design Requirements
Based on NASA 8739.3 and SSL FANCORT 3339 lead bender
D. Seitz 2011

\[ \geq \text{max body width} + 0.22" \]

\[ \leq \text{min body width} + 0.1" - W \]

\[ W = \text{lead width} \]

\[ \geq 1.5 \times W \]
Complies with NASA 8739.3 spec
Accommodates lead widths of 0.09 to 0.17 inches
(3x to 5.5x lead width)
and thickness =< 0.010 (bend radius = thickness)
D. Seitz 200CT11

FA# 3339
P.O. # PAS086730
FANCORT ORDER # 34985
ENGINEER CONTACT: Dave Curtis
PURCHASING AGENT: James Freeman
APPROVED BY:
INSPECTED BY: B.C. 12/28/98
TECHNICAL INFO: U.C. Berkeley

TEST NUMBER 1

TEST SHEET
8.5.2 Clinched Lead Terminations. The length of the clinched portion of conductors and part leads shall be at least ½ the largest dimension of the solder pad or 0.78mm (0.031 inch), whichever is greater (Requirement). Lead overhang shall not violate minimum electrical spacing requirements (Requirement). The lead shall be bent in the direction of the longest dimension of
used for staking, conformal coating, or encapsulating or where damage from other sources is likely (Requirement). The epoxy material shall not be applied directly to glass (Requirement).

**CAUTION:** WHEN USING HEAT SHRINKABLE SLEEVING, EXTREME CARE SHOULD BE TAKEN TO PREVENT PART DAMAGE DUE TO EXCESSIVE HEAT OR SHRINKAGE OF THE SLEEVING.

8.1.5 Hookup Wire. Hookup wire, solid or stranded, shall be supported by a means other than the solder connections or conformal coating if wire length exceeds 2.54cm (1 inch) (Requirement). Attachment to a surface by staking with resin is considered adequate support.

8.1.6 Lead Bending and Cutting.

a. During bending or cutting, part leads shall be supported on the body side to minimize axial stress and avoid damage to seals or internal bonds (Requirement). The distance from the bend to the end seal shall be approximately equal at each end of the part (Requirement). **The minimum distance from the part body or seal to the start of the bend in a part lead shall be 2 lead diameters for round leads and 0.5mm (0.020 inch) for ribbon leads (Requirement).** The stress relief bend radius shall not be less than the lead diameter or ribbon thickness (Requirement). The direction of the bend should not cause the identification markings on the mounted part to be obscured. Where the lead is welded (as on a tantalum capacitor) the minimum distance is measured from the weld.

b. Part leads shall be formed so that they may be installed into the holes in the PWB without excessive deformation that can stress the part body or end seals (Requirement).

c. All leads should be tinned and formed before mounting the part.

**CAUTION:** WHERE POSSIBLE, PART LEADS THAT ARE SUBJECT TO STRESS CORROSION CRACKING (E.G. KOVAR LEADS), SHALL BE PREFORMED AND TRIMMED PRIOR TO TINNING.

d. Whether formed manually or by machine, part leads shall not be mounted if they show evidence of nicks or deformations (Requirement). Smooth impression marks (base metal not exposed) resulting from tool holding forces shall not be cause for rejection.

e. Tempered leads (sometimes referred to as pins) shall not be bent nor formed for mounting purposes since body seals and connections internal to the part may be damaged (Requirement). Tempered leads or leads with a diameter of 1.27mm (0.05 inch) or more shall not be cut with diagonal cutters or other tools that impart shock to connections internal to the part (Requirement).