PREPARED BY:	***Multiband Imaging Photometer for SIRTF***	NUMBER M22I75	
C. DAVIDSON		TYPE INSPECTION	
APPROVALS			
ENGINEERING	University of Arizona Steward Observatory, IR Group	DATE 04/27/98	
QUALITY	**SPECIFICATION**	SUPERSEDES SPEC. DATED	
PI/DEPUTY PI		REV.	PAGE 1 of 5

TITLE

INCOMING INSPECTION OF160µ FPA THERMAL ISOLATOR (MIPSD–0263), PROCEDURE FOR

1.0 SCOPE

This specification defines the equipment, materials and procedures for incoming inspection of the thermal isolators, P/N MIPSD-0263, used in the build of MIPS 2x20 stressed Ge: Ga focal plane array.

2.0 PURPOSE

The incoming inspection is to verify that the requirements of the purchase order have been satisfied and that the thermal isolators meet the specifications of drawings MIPSD-0263.

3.0 APPLICABLE DOCUMENTS

The following documents form a part of this inspection procedure to the extent specified herein. In the event of conflict between the requirements of this document and the requirements of the engineering drawings called out, the requirements of the drawings shall take precedence. Unless otherwise specified, the most recent revision of the documents identified herein shall apply.

Non-Government Documents
Manual
University of Arizona Safety Manual

Drawings
University of Arizona, Steward Observatory, IR Group
MIPSD-0263 Thermal Isolator

4.0 REQUIREMENTS

4.1 Equipment

Acceptable results are contingent upon the use of the recommended equipment listed below or equivalent equipment. Equivalent equipment may be substituted for the recommended equipment if and only if effectiveness and accuracy are not decreased by its use.

Item	Quantity	Description
1	1 each	Microscope, stereozoom, Bausch and Lomb
2	1 each	Microscope, measuring, x, y, and z-axes, Nikon
3	1 each	Measurement system, Nikon Digimicro System
4	1 each	Gun, blow

4.2 Materials

Item	Quantity	Description
1	as received	Thermal isolator, P/N MIPSD-0263
2	as required	Isopropanol, electronic grade
3	as required	Nitrogen, gaseous (dry) or air (dry)
4	1 each	Tweezers, Teflon
5	as required	Wipes, cleanroom

5.0 PROCEDURAL REQUIREMENTS

Incoming inspection of thermal isolators is performed and tracked on a lot basis. The lot number to be recorded on the inspection summary sheet, document no. M22I75-A is to be the lot number which is designated by the vendor on the shipper accompanying the parts or on other vendor supplied documentation. If the vendor does not provide a lot number, then the purchase order number and the date of receipt will be used as the lot number.

Individual parts are not to be assigned unique serial numbers or other distinguishing identifiers. Rather, hardware of a given configuration, which meet acceptance requirements are to be stored only with hardware of the same configuration, which also meet acceptance requirements. For FPA build, acceptable parts of a given configuration will be indistinguishable one from another.

Parts which fail to meet the acceptance requirements, will be stored separately from acceptable parts.

For each lot, the results of visual examination and dimensional measurement are to be summarized on one inspection sheet.

6.0 PROCEDURE

Notes:

- Handling, storage and disposal of chemicals is to be in accordance with the University of Arizona Safety Manual.
- Cleanroom gloves or finger cots are to be worn when handling hardware and equipment.
- Removal of outer wrappings and packaging material is to be done outside of the cleanroom.

6.1 Verify Receipt of Requested Paperwork and Quantity

6.1.1 Inspect the outer packaging for signs of damage incurred during transport. Record the results on the inspection sheet, document no. M22I75-A.

6.1.2 Carefully remove outer packaging and remove contents and paperwork. With a cleanroom wipe dampened with isopropanol, clean the outer packaging, taking care not to obscure label information. Place the paperwork in cleanroom bags. Transport the parts and paperwork to the cleanroom.

6.1.3 Verify that the quantity identified on the paperwork is in agreement with the quantity received. Report any deficiencies or overages in quantity to the lead engineer for resolution.

6.2 Inspect for Contamination and Defects

6.2.1 Using tweezers or vacuum pickup tool, place a representative specimen onto a clean microscope stage or a clean glass slide on the stage. Under microscope magnification, verify to drawing MIPSD-0263 that the configuration is as identified on the packaging/container label.

6.2.2 Inspect for contamination. Using dry N_2 or air from a blow gun, blow particulates from the surface. If gross contamination is present, clean by flushing surfaces for a minimum of 20 seconds each with isopropanol. Blow dry with dry N_2 or air.

Note: To prevent redistribution of contaminating materials, or possible solvent residue from remaining on the wafer, keep the wafer wet with solvents until it is blown dry.

6.2.3 Under microscope magnification, verify the surface is free of contamination. Examine the part for damage and deterioration.

If visual examination indicates defects which would render the part unusable, place the part in a storage container, label the container 'reject' and store in the appropriate area of the storage desiccator.

6.3 Verify Dimensions

Note: If a contact measuring system (i.e., a Nikon Digimicro system or a surface profilometer) is used to measure the thickness, take care not to damage the surface.

6.3.1 Using a 3-axis measuring microscope, measure the length, width and thickness of the part. Each parameter is to be measured at three different locations, and a minimum of three measurements is to be made at each location. For acceptance, the average of the measurements for a parameter must fall within the specification range identified on the drawing and on the inspection sheet.

6.4 Storage

Place acceptable parts into a clean storage container. Cover the container and label: 'MIPS 160μ Thermal Isolator, PIN MIPSD-0263', 'Lot No. xxxx, Acceptable.' For lot number identification, reference paragraph 5.0. Store container on appropriate shelf of N_2-purged desiccator.

In a similar manner label and store rejects. On label record the word 'reject'.

6.5 Summarize on the Inspection Sheet the Thermal Isolator Lot Status

6.5.1 Complete an M22I75-A Inspection Sheet to summarize the results of the visual examination and dimensional measurement performed on the lot of thermal isolators.

6.5.2 Advise the process lead engineer of the status of the lot. Place all vendor-supplied paperwork and the inspection sheet in the process files.

MIPS Thermal Isolator (P/N MIPSD-0263) Incoming Inspection Sheet
Document No. MS22I75-A

Lot ID: _____ Operator: _____ Date: _____

Supplier (Vendor): _____ Lot Number: _____

1. Outer Packaging: No damage noted ☐ Comments:
   Damage noted ☐

2. Quantity of Thermal Isolators Ordered: _____
   Quantity of Thermal Isolators Received: _____

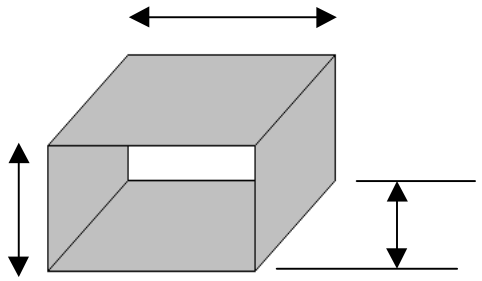
3. Visual Examination: Instrument Used _____
   Calibration Date _____

4. Dimensional Measurement:
   Length & Width: Instrument Used _____
   Calibration Date _____

   Board Thickness: Instrument Used _____
   Calibration Date _____

SPECIFICATIONS:

PARAMETER	REQUIREMENT	MEASURED
LENGTH (L) (Inch)	1.000 ± 0.002”	
WIDTH (W) (Inch)	0.500 ± 0.002”	
HEIGHT (h) (Inch)	0.396 ± 0.002”	
WALL (Inch)	0.010 (TYP)	



Inspection Summary

Qty. Acceptable _____
Qty. Reject _____

Primary cause for rejection:
- a. out of spec dimension ☐
- b. damage or deterioration ☐
- c. other