



Chapter 11 Processor in a Box (PIB)

Introduction

Definitions

Section A

Section B

INTRODUCTION

To define multipack and PIB Line packing methodology for microprocessors which includes. Materials to be used, serialization, orientation, quantity per container and labeling.

DEFINITIONS

Microprocessors (Packages)

A group of two or more physically joined and formed as one thru assembly process.

Tray

A first level container which is used for packing and transporting of microprocessors.

Shielding Bag.

Shielding bag is the second level container with conductive buried layer to provide faraday shield around the tray and microprocessors

Inner box.

A third level container which is used for packing the trays with microprocessors in shielding bag and literatures in plastic bag.

Corrugated Nest.

Corrugated card board nest to accommodate the heat sinks and provide protection during transportation.

Shipping box.

A container used for packing, storage and shipping .

Q-Pack Label

Q-pack label is the inventory label which consist of human readable and barcoded characters providing all the information related to the microprocessors and the quantity packed in the shipping box.

AMD shipping container label

Label which consist of human readable and barcoded characters providing all the information related to the microprocessors, customer required information and the quantity.

Chip Clam shell

A container to pack the Microprocessor (Package)

Clam Shell

A container which accommodates the chip clam shell, literatures and other items.

Paperfoam Tray

A first level container used to contain microprocessors & heat sink fan.

SECTIONS

Section A



Chapter 11 Processor in a Box (PIB)

This section shall specify packing requirements for multipack.

Section B

This section shall specify packing requirements for Processor-In-Box (PIB).

Manufacturing supervisor is responsible to ensure the procedures are followed.

Process or Equipment engineer is responsible to update any changes in the procedure.

Manufacturing operators are responsible to ensure instruments or equipment used are within valid calibration & PM date and inform the manufacturing supervisors if any discrepancy found.

GENERAL REQUIREMENTS

When performing the job, ESD protection and prevention must be carried out as per specification <00-016>.

ESD Finger cots or ESD gloves must be used when handling units to avoid leaving any contamination on the die, package or lid.

Refer to specification <01-006> and <01-006.5> for the Procedure for Filling out Process Specifications.

Refer to <03-001> for Approved Suppliers for material used for MultiPack/PIB.

Test Floor Environmental and Soft Handling Procedures should be followed per <607-60035> & <607-60035.1> and <607-60275>.

Refer to <02-028> for MultiPack/PIB control plan.

Refer to <02-028.15> for MultiPack/PIB flow.

Bill of Material (BOM) list will reflect the materials & quantity of each of the material required for the lot to be processed. Sample of BOM list is shown in <607-60859>.

In-line Pack and Paperwork review after MultiPack/PIB operations is to be carried out per specifications <01-006.5>, <06-027> & <607-60089>.

At shipping, <06-001> has to be followed.

At any one time, only one lot is allowed at Multi-Pack/PIB operations. Manufacturing operators shall process "One Lot A Time".

Before a lot starts, operators have to ensure the lot processing area does not have any residual Bill of Materials (speed label, hologram, art card, poster) left behind from the previous lot.

Likewise after a lot has completed Multi-Pack/PIB, operators have to ensure that materials are removed from the processing area and kept at a specified location. At the discretion of the supervisor, line leader or engineering personnel (engineer/EA), re-inspection of the processed lot might be carried out.

In case of any defects observed during the operation, supervisor or line leader or engineering personnel (engineer / EA) will determine whether the packed box required to be dismantled, reviewed and repack.

All damaged BOM (e.g. torn speed label, serialization label that cannot be scanned, broken hologram, etc) has to be attached to the BOM list as shown in Fig A8. Otherwise, they should be handed over to the supervisor or line leader for scrapping.

Chapter 11 Processor in a Box (PIB)

Section A

PACKING MATERIALS & QTY FOR MULTIPACK

Table 1: Materials for Multipack

<u>Packages</u>	<u>04-Spec #</u>	<u>Qty per Multi Pack</u>
CGF/OGF453	16-038.8	10
<u>Boxes / Nest</u>		
Shipping Box	28041	1
Inner Box	28042	1
Nest	28043	1
<u>Dunnage</u>		
Bubble Sheet	28039	3
Bubble Pack Bag	23829 / 28131	1
<u>Bags</u>		
Shielding Bag	28040	1
* Plastic Bag for Literature	28047	1
<u>Trays</u>		
Tray for OPGA/CPGA	26712	2
<u>Straps</u>		
Black Strap	24445	Not applicable
<u>Label/Literature</u>		
K7 Serialization Label	27923	10
ESD Label (not applicable if shielding bag is with ESD printing)	24150	1
Speed Label	27700	1
Q-Pack Label	26331	1
Shipping Label	NA	1
Generic RTF for K8/K7	28051	1
Fan Hologram	28124	1

<u>* Items inside Plastic Bag</u>	<u>04-Spec #</u>	<u>Qty per Multi Pack</u>
Certificate of Authenticity	27704	10
K7 Poster (XP/MP)	27921	1
K7 Athlon XP Bezel Sticker	28049	10

Chapter 11 Processor in a Box (PIB)

Table 2: Heat Sink for Multipack

<u>Heat Sink</u>	<u>04-Spec #</u>	<u>Qty per Multi Pack</u>
Ajigo A3	27812	10 refer to heat sink selection table**
Ajigo A4	27811	
AVC A2	27813	
AVC A3	27814	
AVC A4	27913	
Coolermaster A1	27712	
Coolermaster A2	27820	
Coolermaster A3	27819	

**Heatsink Selection Table

A2	XP2100+
A3	XP/MP2800+
A4	XP/MP3200+

GENERIC MULTIPACK PACKING PROCEDURE

The multipack packing methodology is shown in Figure A1 Strap the trays loaded with packages (Packages are serialized, refer to para 9.0). Refer to <607-60363> for strapping operating procedure.

Place the trays into bubble bag and into shielding bag. Heat seal the shielding bag according to equipment setting below:

Table 3: Program for Vacuum and Sealing Time (H-3000 Sealer Machine)

PROGRAM	PACKAGE	VACUUM	SEALING TIME
7	Multi-Pack (1 Full Tray)	1 to2	1.3 to 1.7

After sealing, inspect the shielding bag for complete seal.

Paste the ESD label (if ESD symbol is not pre-printed on the shielding bag), Speed/Performance label & IMF (Important Message Flyer) or RTF (Read This First Flyer) onto the shielding bag. No missing, torn, misplaced (reverse) or incorrect speed label is allowed.

Place the shielding bag (with trays & packages) & plastic bag (with poster, certificates of authenticity and bezel stickers) into the inner box.

Place fan hologram on hub of each fan. No missing, torn or misplaced Fan Hologram on the fan hub is allowed. Fan hologram surface must be smooth and flush with the surface.

Place bubble sheets & nest into the shipping box.

Place the heat sinks into the nest. (refer to Figure A2 for heat sink orientation.) Fan wire should be coiled properly & no loose wiring is allowed per <16-408>

Place the inner box on top of the nest and seal with tape. Refer to <607-60860> for carton sealing procedure.

Paste the Q-Pack label. Refer to <16-050.3>, <16-054>, <607-60490> and <607-60491> for Q-Pack label printing. Sample of Q-pack label is shown in Figure A3.

Shipping boxes shall stack in alternate directions in a pallet & with a maximum height of 8 boxes. (Typical example as shown in Figure A4 & A5).

At shipping, place the shipping label and the CPS label per Figure B7. Sample of shipping label is shown in Figure A7



Chapter 11 Processor in a Box (PIB)

Note: Damaged (e.g. torn, serial barcode that cannot be scanned) label, Fan Hologram, speed label, serialized label shall be attached to the BOM list per <607-60859> (Figure A8).

SERIALIZATION LABEL ON K7 CGF/OFG 453 PACKAGES (MULTIPACK AND PIB LINE).

Serialization label for Multipack must be 13 characters running number starts from 500098765432A, ending with suffix A(means assembled in SGP AMD).

Paste serialization label on each unit. It shall be done while the units are in tray. Air ioniser shall be "ON" during serialization.

Labeling position shall use AMD Logo/CTP as a guide (Figure A9).

Label surface must be smooth and flush with the substrate.

Wrinkles, creases, tears, bubbles and dog-eared edges are not allowed.

There shall be no stray adhesive, label particles, or any other foreign material related to labels on the package.

Labeling shall not touch any of the topside marking, thermal pad attachment or laser elements.

ESD plastic tweezer shall be used for re-working the label & it must look as good as an original.

There must not be any cosmetic rejects (e.g. exposed internal metallurgy, scratches etc) or residual material left on the unit after rework. Quality specifications to be referenced are <16-038> & <16-049.3> whichever applicable .

Capture the serial numbers into the database by using barcode scanner & print Q Pack label.

Operator to verify first box Q Pack label with respect to processing sheet & serialization label before proceed with subsequent units.

Pack units per Section 8 & Figure A1.

The Q Pack label shall follow the respective trays of units wherever it goes. (Q Pack label can be pasted using scotch tape on the bubble bag, shielding bag, inner box or outer box as shown in Figure A10 & A11).

Chapter 11 Processor in a Box (PIB)

Section B

PACKING MATERIALS & QTY FOR K8 PIB

PIB - Clam Shell

Table 4: Materials For K8 Clam Shell PIB

Materials	Packages			Qty
	Opteron	Athlon 64	Athlon 64 FX	
Art Card	28263	28127	28126	1
Poster	28400	28128	28129	1
Bezel Sticker	28262	28122	28123	1
Cert of Authenticity	27704			1
*Important Message Insert	27918	N/A	N/A	1
Special Flyer	N/A	N/A	N/A	1
Conductive Foam	27914			1
Chip Clam	28048			1
Clam Shell	27818			1
Hologram Fan	28412			1
Hologram for Art Card	28252			1
**Barcode Label for Speed	Various			1
K8 Serialization Label	27924			1
Generic RTF	28051			1
***Heatsink BI		27910	Foxconn	1
		27911	Ajigo	
		27912	Thermaltake	
B1 (low cost)		28257	Coolermaster	
B1 (low cost)		28261	Ajigo	
Shipping Box	28130	28413	28130	1
End Cap	NA	28414	NA	4
Q-Pack Label	26331			1

Note:

* Important Message Insert for Opteron is used for speed 200 & above.

** Barcode label for speed- refer to individual 04-specifications for the correct label against the OPN requirement.

*** Either of the above qualified heat sink suppliers can be used.

**Chapter 11 Processor in a Box (PIB)
PIB - Organic Box**

Table 4: Materials For K8 Organic PIB

Materials	Packages			Qty
	Opteron	Athlon 64	Athlon 64 FX	
K8 Serialization Label		27924		2
Chip Clam		28048		1
Conductive Foam		27914		1
Plastic Bag for Literature		28047		1
Bezel Sticker	28262	28122	28123	1
Poster	28400	28128	28129	1
Generic RTF		28051		1
Certification of Authenticity		27704		1
Organic Box	Tbd	28506	28501	1
*Barcode Label for Speed		Various		1
Hologram for Art Card		28252		1
Fan Hologram		28412		1
Strap to Secure Heat Sink		28511		1
Paperfoam Tray		28505		1
Security Sticker		28510		2
				1
**Heatsink BI		27910	Foxconn	1
		27911	Ajigo	
		27912	Thermaltake	
B1 (low cost)		28257	Coolermaster	
B1 (low cost)		28261	Ajigo	
Shipping Box	28508	28507	28508	1
Q-Pack Label		26331		1

* Barcode label for speed - refer to individual 04-specifications for the correct label against the OPN requirement.

** Either of the above qualified heat sink suppliers can be used.

K8 Serial barcode label

The 2D on the package shall be scanned and the serial barcode label will be printed on the label. Ref to <607-60575> for operating & maintenance procedure for 2D matrix system. The placement of serial barcode shall be on the heatsink fan surface per illustration in Figure B1. Barcode label format shall use code 39. Barcode label must be readable when scanned. Refer to <16-414> for labeling acceptance criteria.

Chapter 11 Processor in a Box (PIB)

Pack Methodology

Clam Shell PIB

Place package & conductive foam in chip clam, and into clam shell, along with the necessary items as shown in Figure B2.

Heat seal the clam shell per procedure in <607-60864>. Check to ensure that the sealing is secure.

Place the correct quantity of clam shell (with packages) into the shipping box.

Athlon 64 shall be packed in quantity of 10 per box, & labeled. Refer to Figure B3 current method and refer Figure B6 for new packing with end caps.

Athlon 64 FX and Opteron shall be packed in quantity of 5 per box, & labeled. (refer to Figure B4 & B5).

The Q-pack label format is shown in Figure A3.

The shipping label format is shown in Figure A7.

Organic PIB

Place package & conductive foam in chip clam, and into organic box, along with the necessary items as shown in Figure B8.

Serialization labels should be pasted on the heat sink fan as well as the organic box as shown in Figure B8.

Security seal sticker to be placed at the top & bottom of the box as shown in note 5 of Figure B8.

Place the correct quantity of Organic PIB into the shipping box.

Athlon 64 shall be packed in quantity of 10 per box, & labeled. (refer to Figure B7 & B9)

Athlon 64FX shall be packed in quantity of 5 per box, & labeled. (refer to Fig B5 & B10)

The Q-Pack label format & the shipping label format are shown in Figure A3 & A7 respectively.

MULTIPACK PACKING METHODOLOGY FOR K7

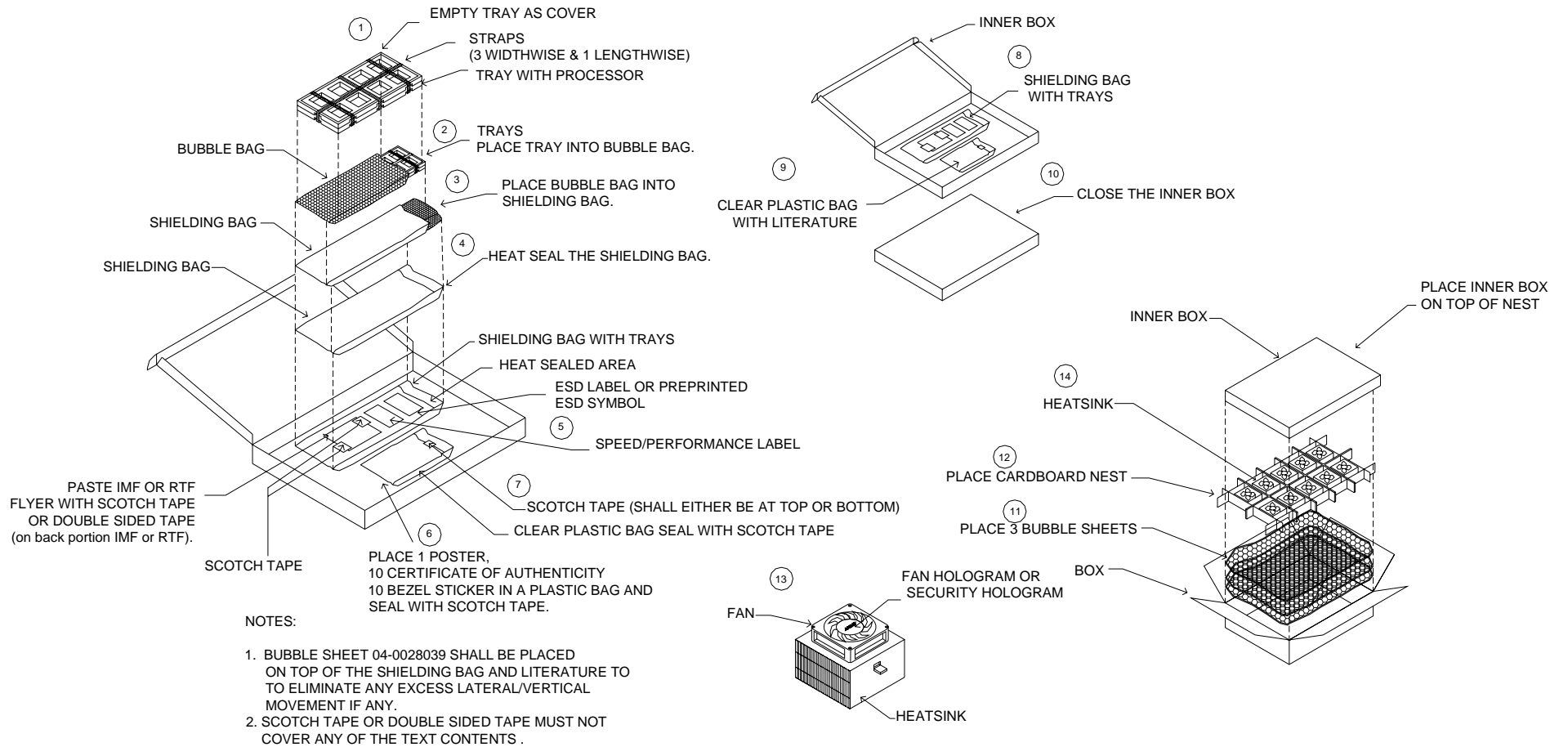


Figure A1

K7 HEATSINK ORIENTATION IN NEST

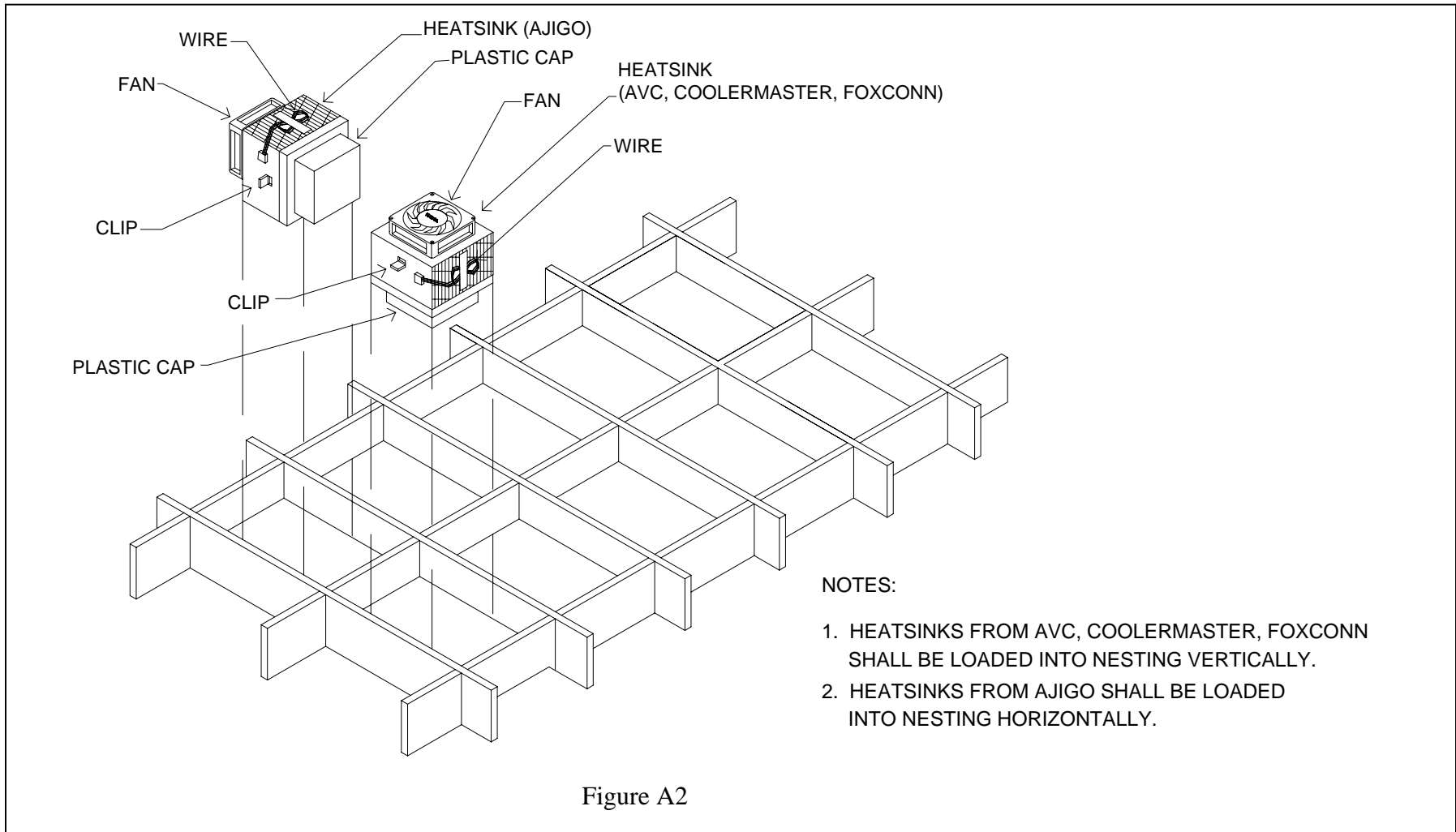


Figure A2

AMD Q-PACK LABEL FOR MULTIPACK / PIB

SPEC. #		1465124			
IDV	7351ALS	PC	FULL CONTAINER	123	
PKG	OGF453	12	QTY 1234	CNTRS	
(1P) MFR#					
(P) OPN					
<hr/> BOX ID					
(1Z) LN	1234567		000		
HU		123	BOX OF	123	
		DATE CODE (9d) 1234	TTL QTY (a) 234		
SEAL 12345678	12	F2706AE-CBR			
ASSEMBLED IN: MALAYSIA					
Serial No:					
880983100034U		880983100040U			
880983100034U		880983100040U			
880983100034U		880983100040U			
880983100034U		880983100040U			
880983100034U		880983100040U			

FOLDING LINE

ALIGN TO EDGE OF BOX

TYPICAL EXAMPLE
Figure A3



Figure A4: Stack shipping boxes in height of maximum 8 boxes (Typical Example)

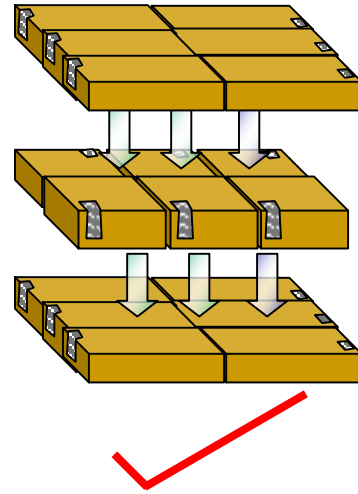


Figure A5: Stack shipping boxes in alternate directions (Typical Example)

MULTIPACK PACKING BOX LABELING

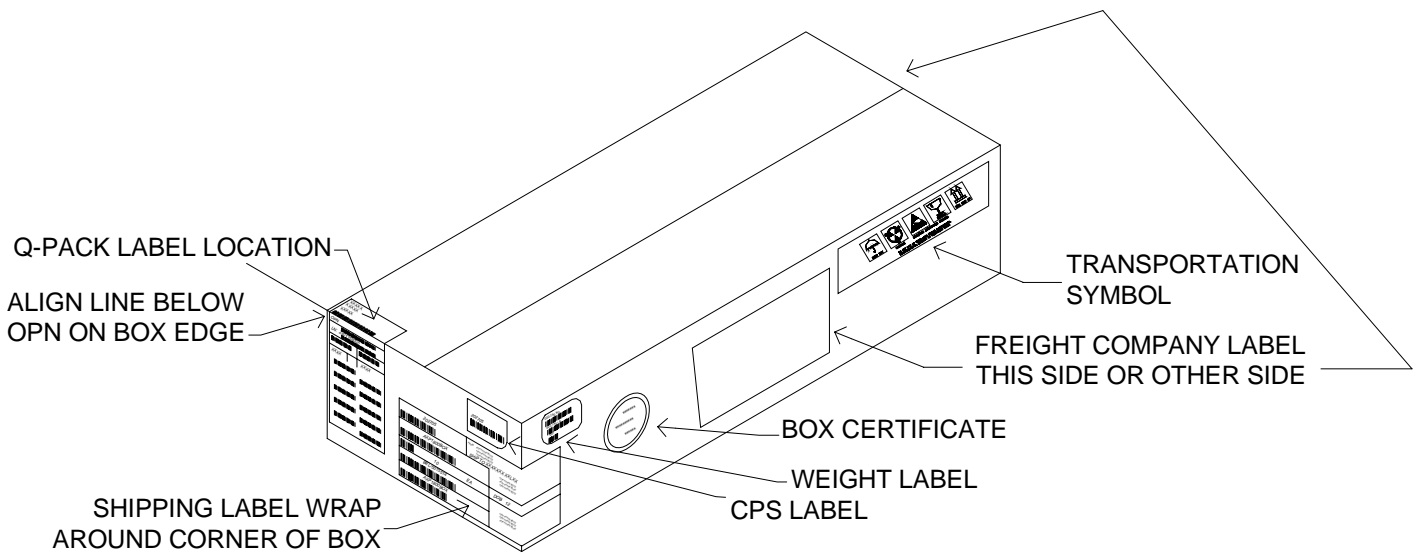


Figure A6

AMD SHIPPING CONTAINER LABEL

(35) PKG ID: 202705 [Barcode]		FROM: AMD, INC. ONE AMD PLACE P.O. BOX 3455 SUNNYVALE, CA. 94088		SHIP TO: MICROTRONICA SWEDEN AB	
(1P) MFR P/N: AXP1800BOX [Barcode]		DOMNARVSGATAN 20 S-16363 SPANGA SWEDEN S-16363 SPANGA		SWEDEN	
(Q) QUANTITY [Barcode]		10 EA		PACKAGE COUNT: 008 of 12	
(K) TRANS ID: BEL/5010514 [Barcode]		PACKAGE WEIGHT LB		ENTRY OF DIFFUSION GERMANY	
(P) CLST PROD ID: AXP1800BOX [Barcode]		DESC: I.C. D/C QTY 0149TFLW 120		ASSEMBLED IN: MALAYSIA	
				CPS NO. 202705 [Barcode]	

Figure A7
TYPICAL EXAMPLE

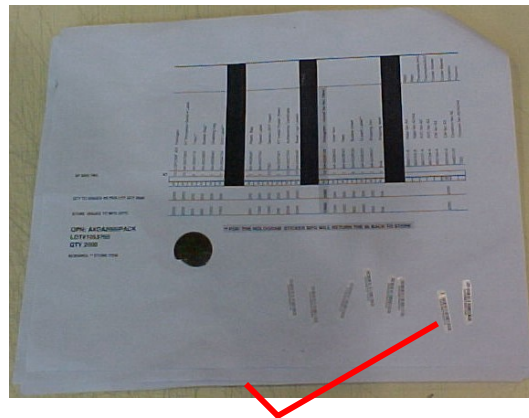


Figure A8:
Attach damaged serial label/hologram/speed
label on BOM list
(Typical Example)

Serialization for K7

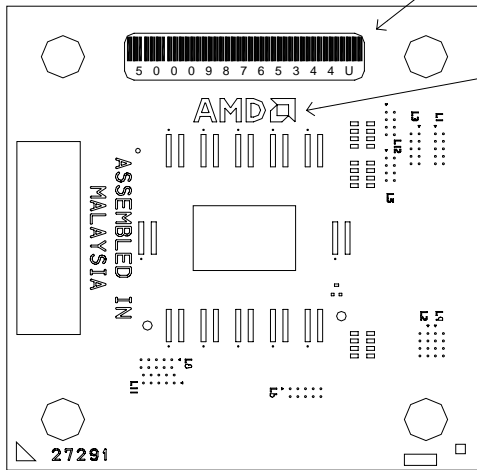
TYPICAL EXAMPLE FOR BAR CODE LABELING

LABELING APPLIES TO K7 OGF 453
WITH DIFFERENT TOP SURFACE DESIGN

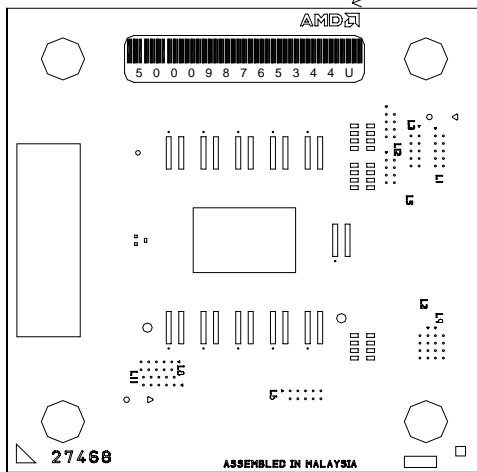
BARCODE LABELING
DIMENSION: 5mm X 25mm

BOTTOM LOGO

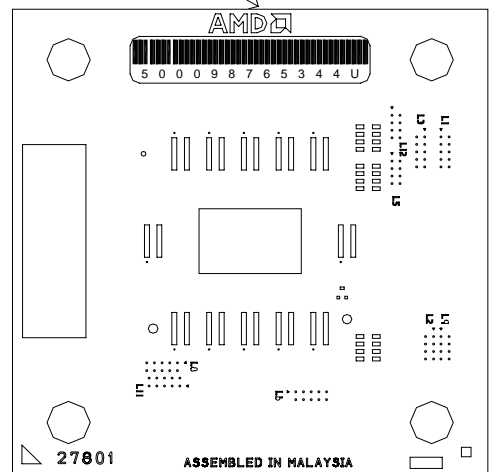
TOP LOGO'S



OGF453 - GREEN SUBSTRATE



OGF453 - BROWN SUBSTRATE



OGF453 - BROWN SUBSTRATE

Figure A9

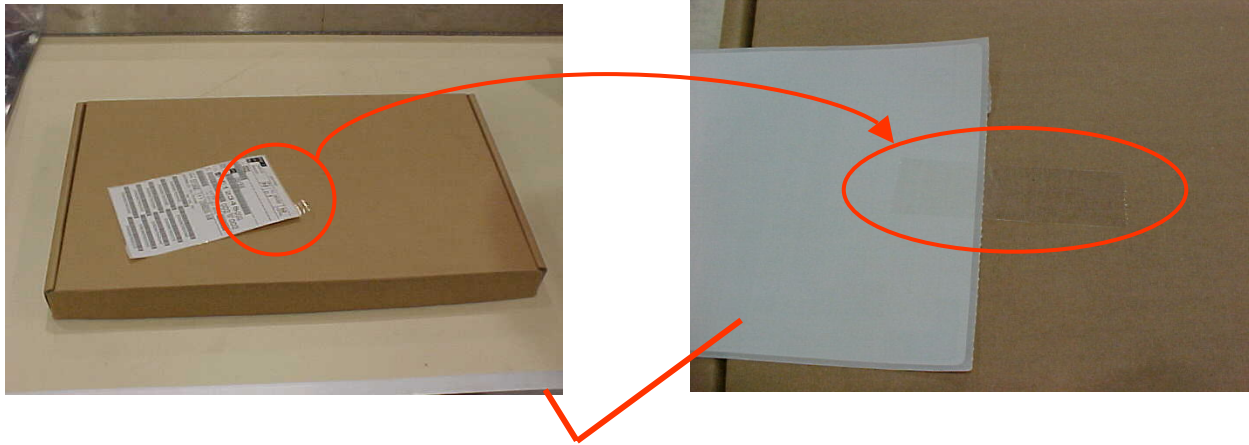
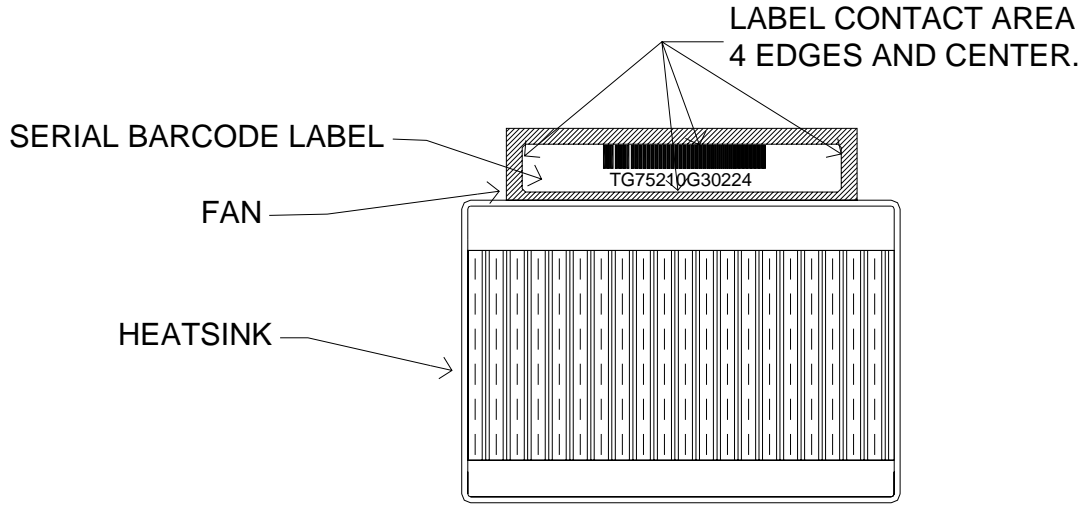


Figure A10: Paste scotch tape at the back side of Q Pack

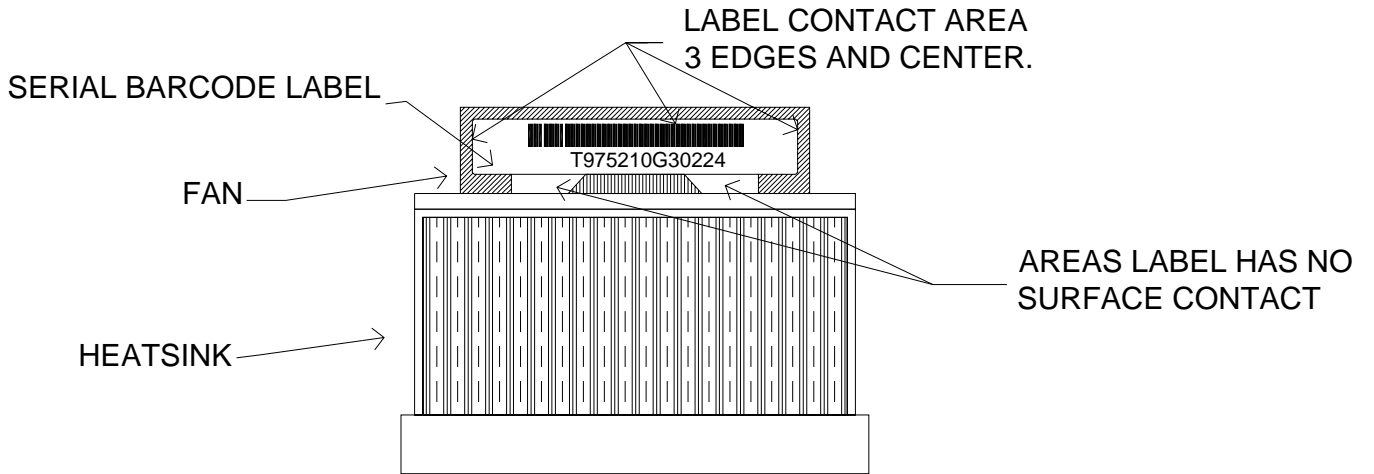


Figure A11: Do not paste scotch tape on the front side of Q Pack

SERIAL BARCODE LABEL PLACEMENT FOR K8



LABEL PLACEMENT FOR SUPPLIERS:
AJIGO, FOXCONN, THERMALTAKE



LABEL PLACEMENT FOR SUPPLIER: AVC

FIGURE B1

**K8 (Generic example)
(TYPICAL EXAMPLE)**

PACKING OF COMPONENTS IN CLAM SHELL

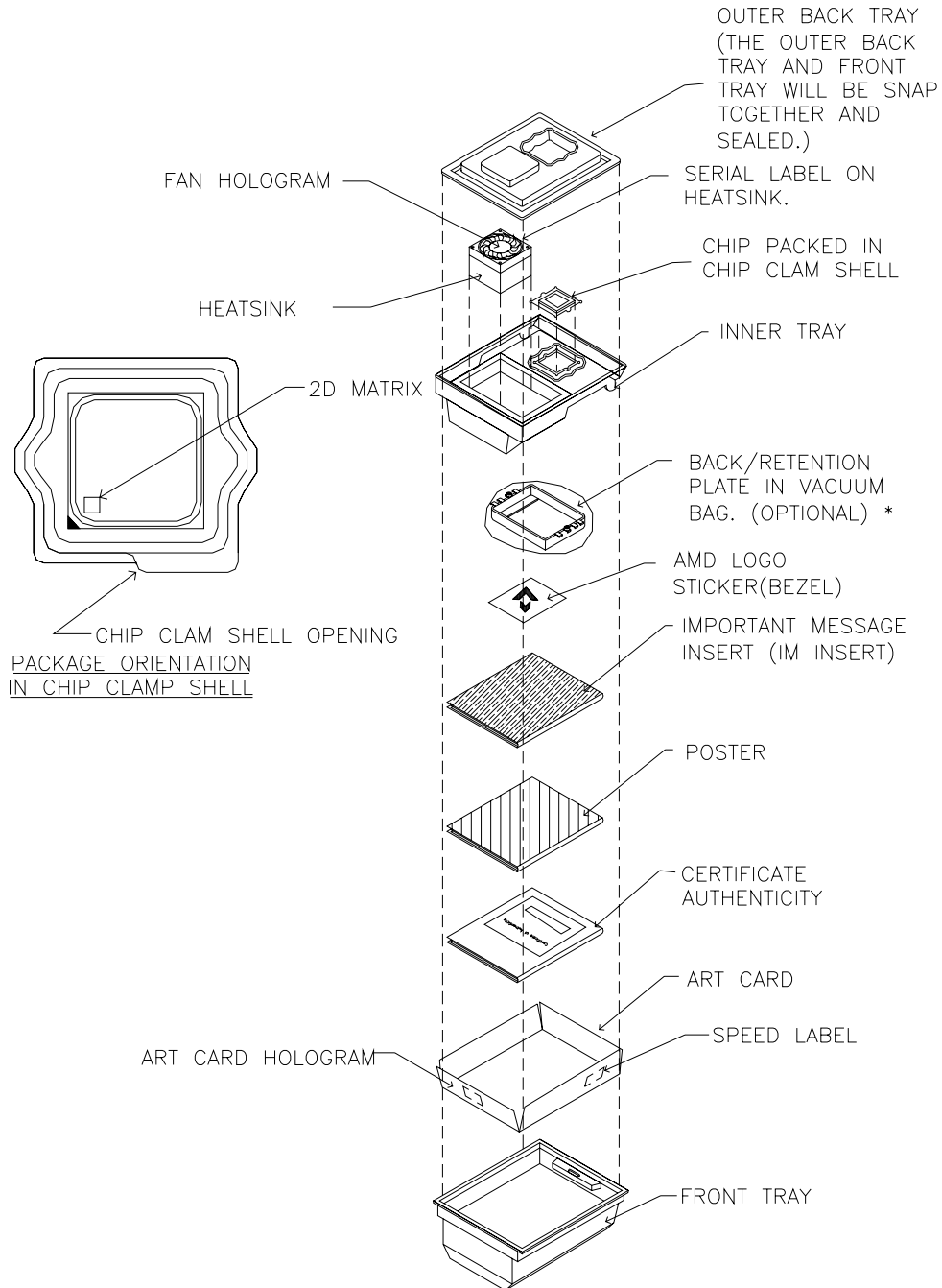


Figure B2

PIB AND LABELING (10 PACK) *

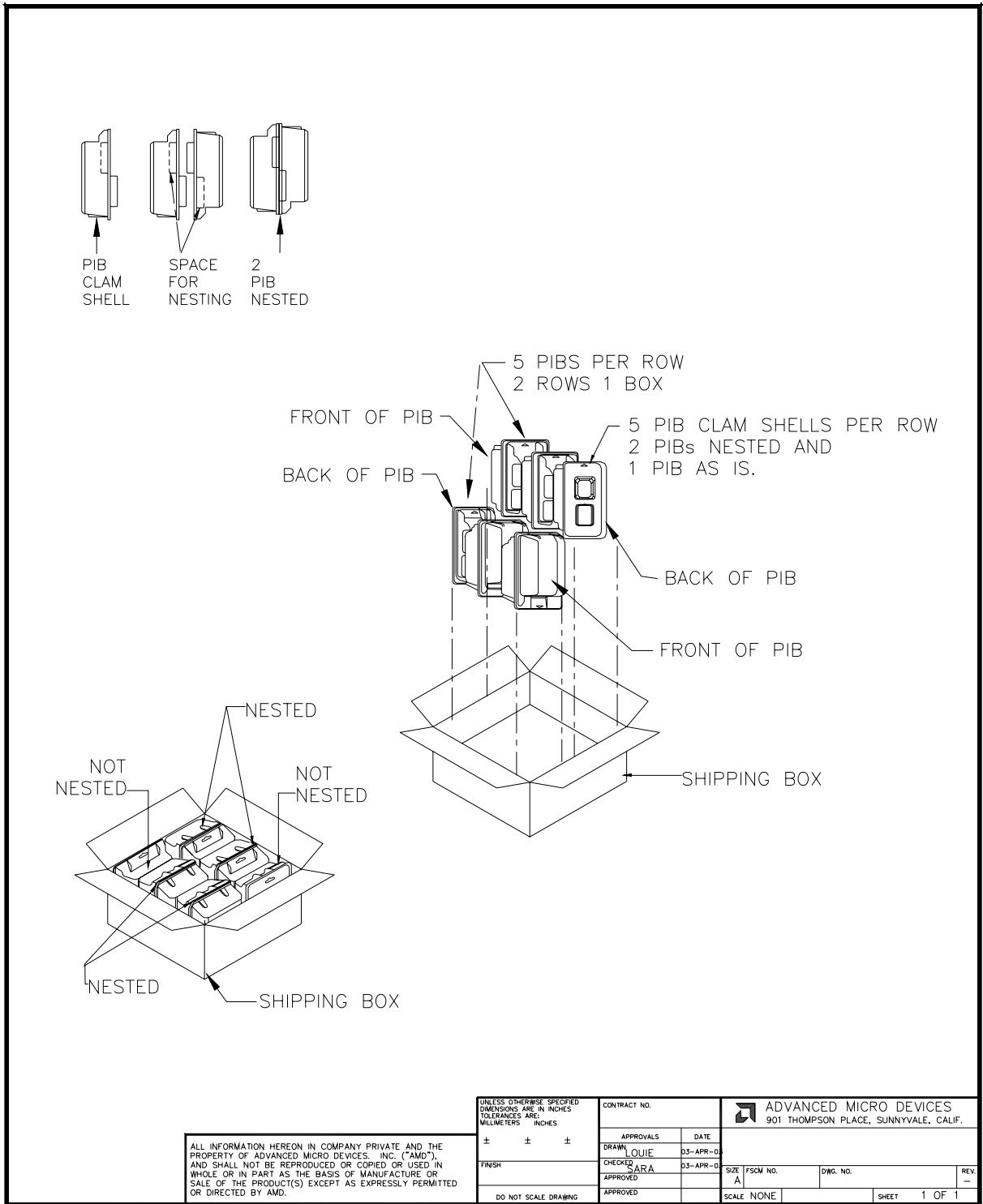


FIGURE B3

5 PACK PACKING SHIPPING BOX

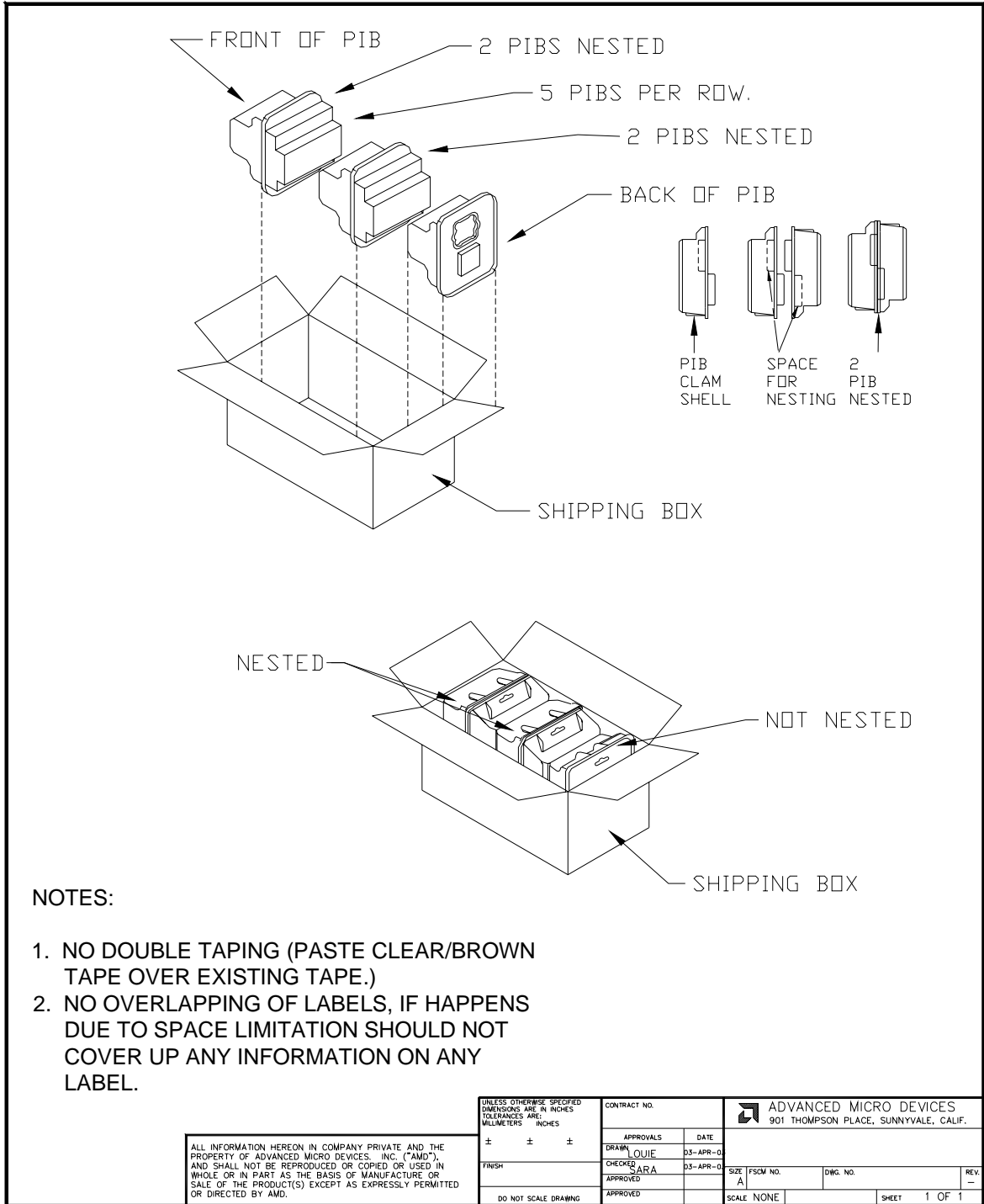
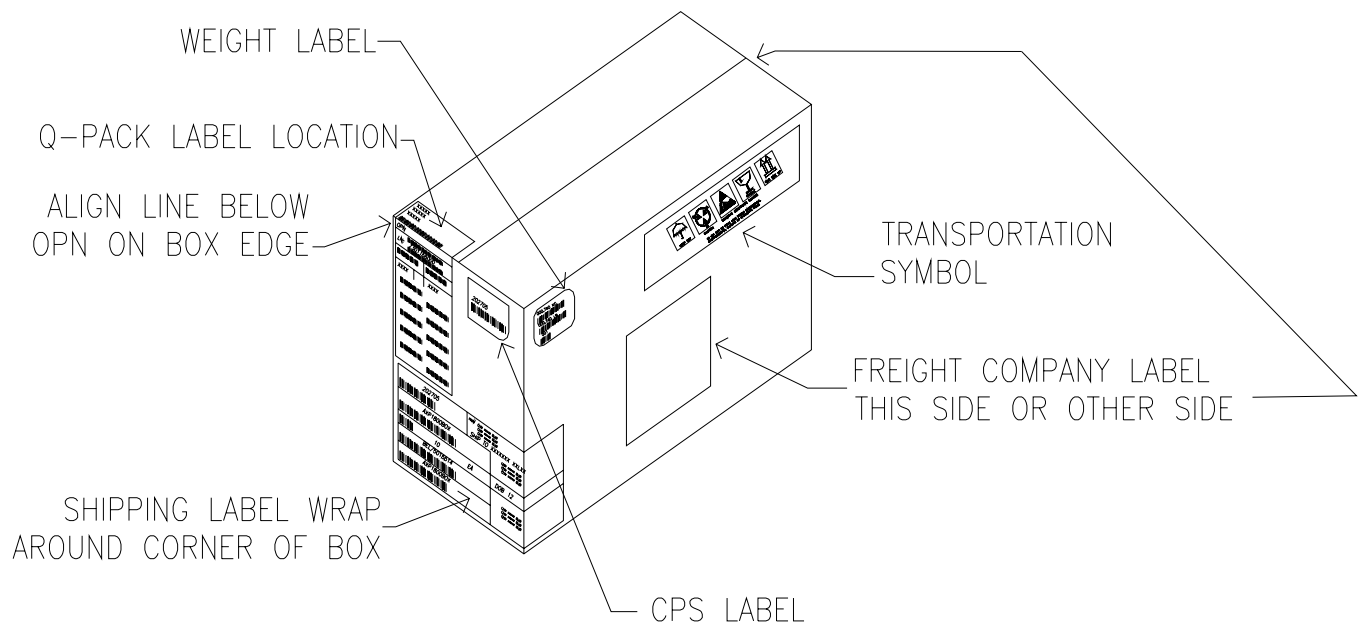


Figure B4

5 PACK BOX LABELING



NOTES:

1. NO DOUBLE TAPING (PASTING OF CLEAR/BROWN TAPE OVER EXISTING TAPE.)
2. NO OVERLAPPING OF LABELS, IF HAPPENS DUE TO SPACE LIMITATION SHOULD NOT COVER UP ANY INFORMATION ON ANY LABEL.

Figure B5

PIB AND LABELING (10 PACK) WITH END CAPS *

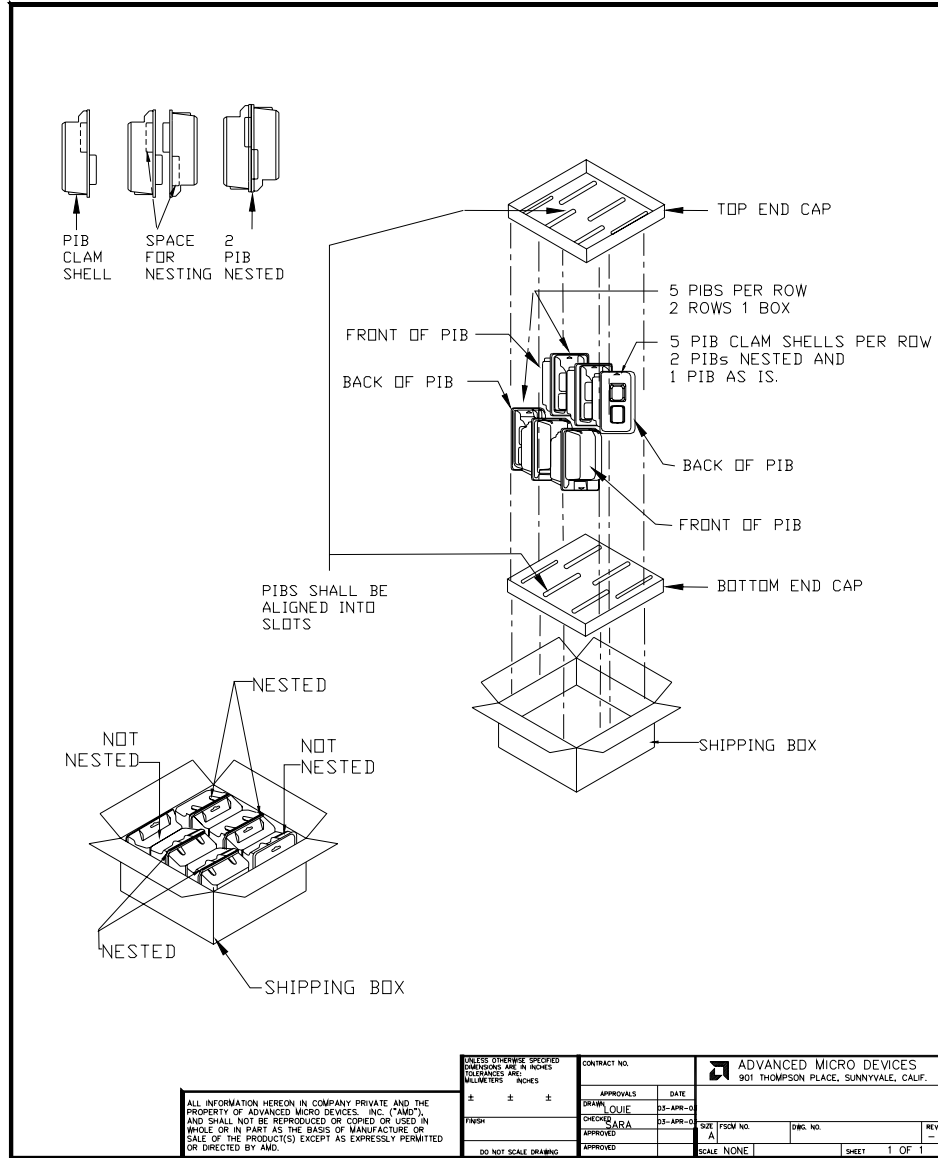
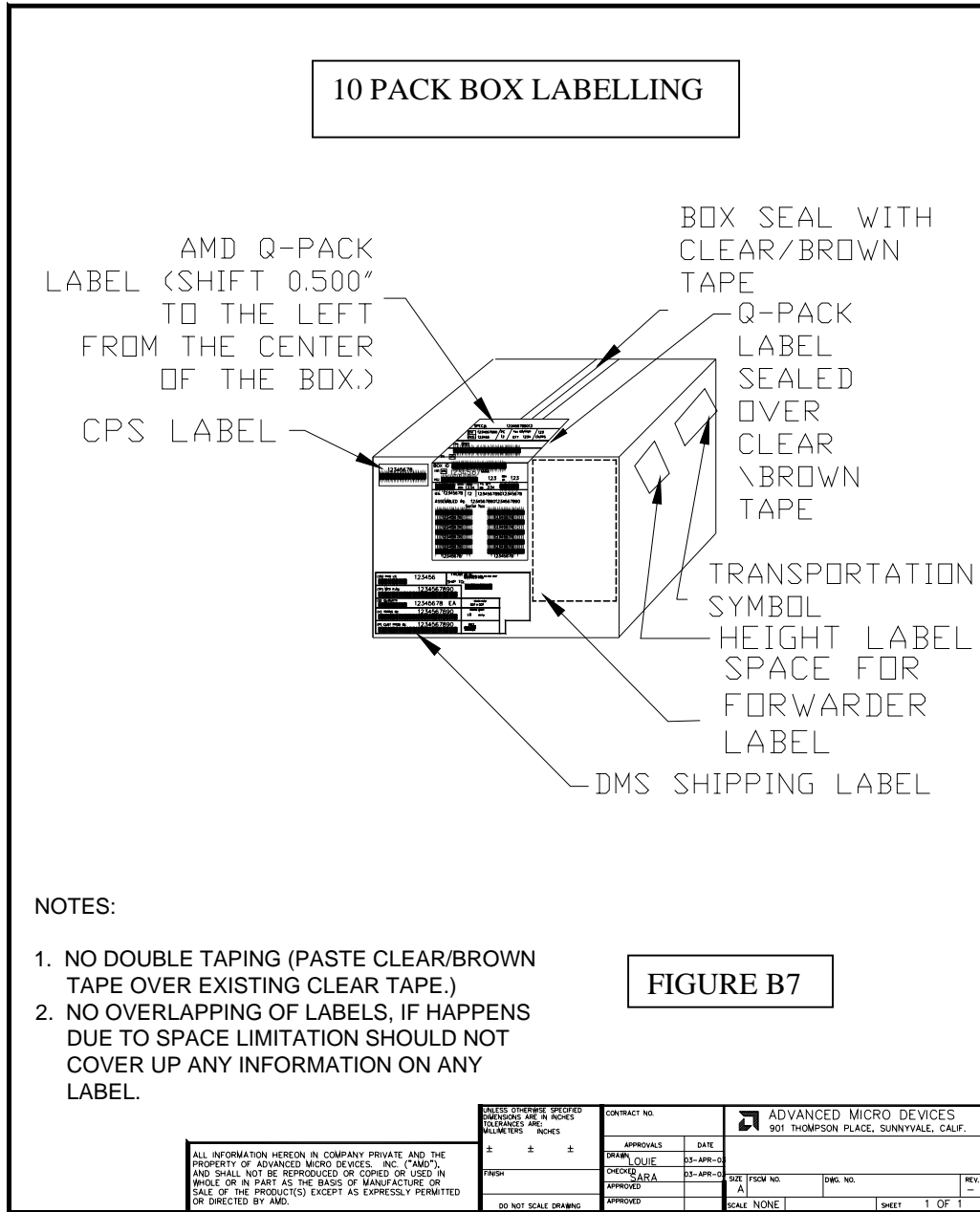
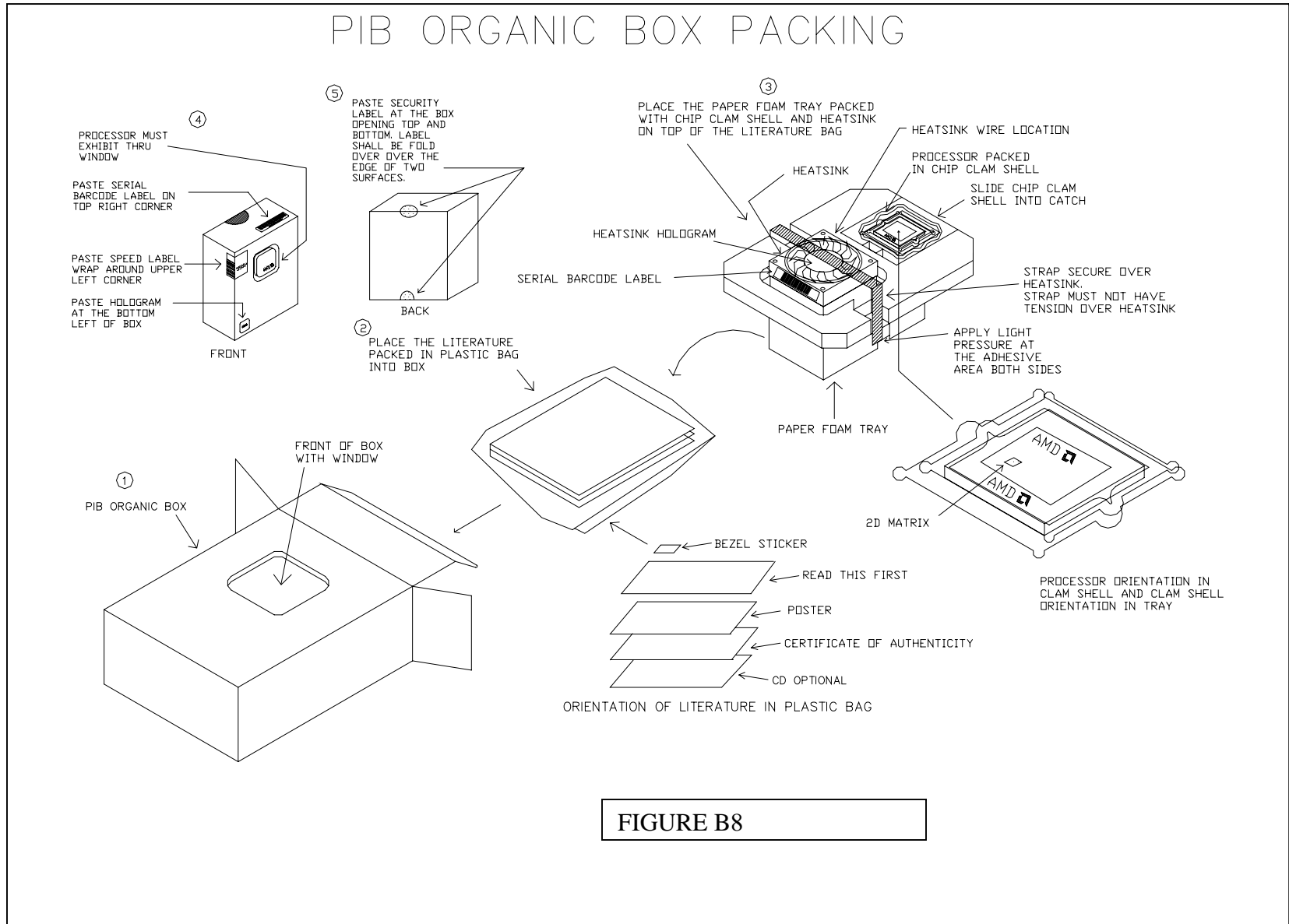


FIGURE B6

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PIB ORGANIC BOXES PACKED IN SHIPPING BOX

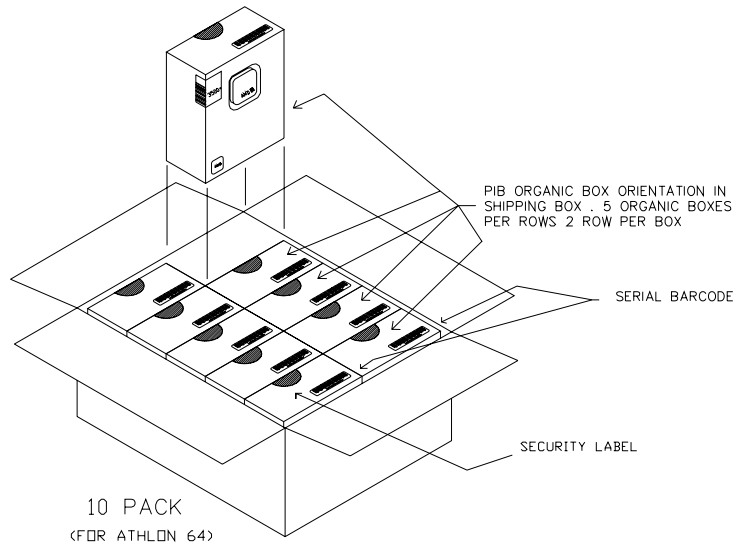


FIGURE B9

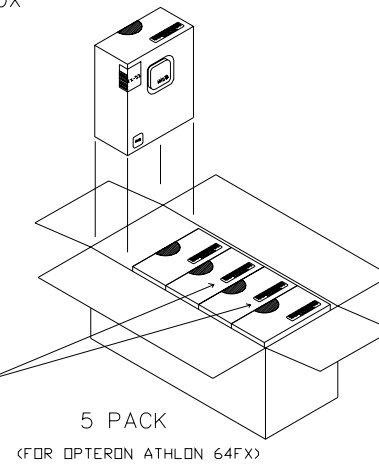


FIGURE B10