AMD

CHAPTER 7 TRAYS

Introduction

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INTRODUCTION

Trays are used instead of tubes to protect higher pin count packages from electrical and mechanical damage during handling and shipment. Trays are also suitable for product presentation board assembly equipment. As standard practice, the following AMD packages are shipped in trays: CCGA, CPGA, uCPGA, OBGA, OPGA, uOPGA, and PBGA.

DESIGN AND MATERIALS

All trays are uniformly sized, in compliance with standard JEDEC outlines. As much as possible, AMD

Figure 7.1 Trays protect product during shipping and handling and are suitable for product presentation to a pick-and-place system.

procures trays that are made of 25 percent recycled material (see page 7-5 for a listing of AMD's tray suppliers). The fiber tray material is either carbon-filled or antistatically coated to provide ESD protection. AMD's trays are made of static dissipative polysulfone material, or equivalent.

The temperature at which each tray can withstand continuous operation varies. See the notes section of each tray dimensions drawing for specific information.

Pin One Orientation. Packages are placed in the trays so that the device pin one is oriented to the notched corner of the tray, enabling pick-and-place equipment setups to be compatible for all packages and pincounts.

DEVICE COUNT PER TRAY AND BOX

The quantity of devices per tray are standardized across all AMD products by the package family and pin/ballcount. Thest standard quantities are listed in the table beginning on page 7-3. For definitions of AMD's package codes, see Chapter 1 Codes and Carrier Options.

For shipment, a stack of six trays is secured with straps; five containing parts and the sixth serving as a cover. The diagrams and tables that follow show tray dimensions per package and the quantities of parts per tray.   See Chapter 13 Packing Methods and Labels for details on how trays are packed in boxes for shipment.
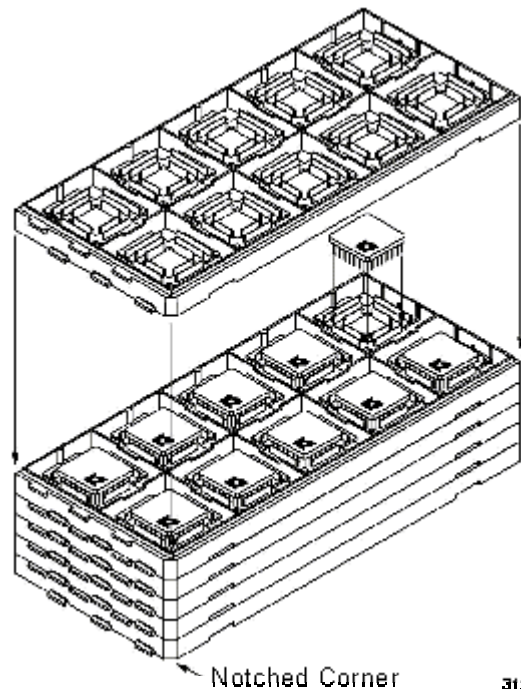

Figure 7.2 Five trays of product are stacked for shipment, with a sixth tray serving as a cover.

Device Count per Tray and Box

Package	Ball count/Pin count	Devices Per Tray	Devices per Box[1]
Ceramic Column Grid Array (CCF, C2F)	575 CCF	27	135
	949 C2F	12	60
Ceramic Micro Pin Grid Array (UCG)	UCG 940	12	60
Ceramic Pin Grid Array (CGF)	321 CGF	10	50
	453 CGF	10	50
Organic Ball grid Array (OBF, OLF)	349 OBF	44	220
	564 OLF	27	135
	829 OLF	21	105
Organic Micro Pin Grid Array (UOG)	563 UOG	24	120
	638 UOG	24	120
	754 UOG	12	60
Organic Pin Grid Array (OGF)	453 OGF	10	50
Plastic Ball Grid Array (BGA)	492 BGA (35 mm x 35 mm)	24	120
	569 BGA (37.5 mm x 37.5 mm)	21	105

Notes:
1. In all cases, there are six trays per box, with the top tray being empty and serving as a cover.

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Tray Suppliers per Package Type

Package	Ball count/Pin count	Supplier's P/N	Tray Supplier
Ceramic Column Grid Array (CCF, C2F)	575 CCF	CX 761-10	Camtex
	949 C2F	CX 787-10	Camtex
Ceramic Micro Pin Grid Array (UCG)	940 UCG	CX 812-10	Camtex
Ceramic Pin Grid Array (CGF)	321 CGF[1]	D 771 ABS	Dae Won Semiconductor Packaging Co.
		M 771 PS	Mardec Industrial Plastics
	453 CGF[1]	D 771 ABS	DaeWon Semiconductor Packaging Co.
		M 771 PS	Mardec Industrial Plastics
Organic Ball grid Array (OBF, OLF)	349 OBF	CX 799-10	Camtex
	564 OLF	CX 810-10	Camtex
	829 OLF	CX 822-10	Camtex
Organic Micro Pin Grid Array (UOG)	563 UOG	D 1F4-3333-126	DawWon Semiconductor Packaging Co.
	638 UOG	CX 833-02	Camtex
	754 UOG	CX 811-10	Camtex
Organic Pin Grid Array (OGF)	453 OGF[2]	D 771	Dae Won Semiconductor Packaging Co.
		M 771	Mardec Industrial Plastics
Plastic Ball Grid Array (BGA)	492	CX 744-10	Camtex

Notes:

1. Both Daewon Semiconductor Packaging Co. and Mardec Industrial Plastics are primary source tray supplier for packages 321 CGF and 453 CGF.
2. Both Daewon Semiconductor Packaging Co. and Mardec Industrial Plastics are primary soiurce tray supplier for 453 OGF.

Contact information for AMD's Tray Suppliers. The following table provides contact information for AMD's tray suppliers.

Supplier	Address	Telephone/Fax #
Camtex	Fremont, CA	P: (510) 490-5888 F: (510) 661-0612
DaeWon Semiconductor Packaging Co.	Seoul, Korea (Through branch in San Jose, CA)	P: (408) 562-6172 F: (408) 562-6173
Kostat	San Jose, CA	P: (408) 261-0885 F: (408) 261-0985
Mardec Industrial Plastics	Penang, Malaysia	P: 604-641-4302 F: 604-643-8784
Precision Connector Tooling (PCT)	Singapore	P: 65-741-9148 F: 65-741-9142

TRAY DIMENSIONS
The dimensional drawings show the dimensions of the tray for each package and ball/pin/lead count.

"Ceramic Column Grid Array" on page 7-8

"Ceramic Micro Pin Grid Array" on page 7-12

"Ceramic Pin Grid Array" on page 7-14

"Organic Ball Grid Array" on page 7-28

"Organic Micro Pin Grid Array" on page 7-34

"Organic Pin Grid Array" on page 7-40

"Plastic Ball Grid Array" (BGA)