

## **AD8522ACPZ-REEL7** Datasheet



DiGi Electronics Part Number

Manufacturer Product Number

Manufacturer Product Numbe

Description

Manufacturer

Detailed Description

Analog Devices Inc.

AD8522ACPZ-REEL7-DG

IC DAC DUAL 12BIT 5V

Bit Digital to Analog Converter

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## Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
AD8522ACPZ-REEL7	Analog Devices Inc.
Series:	Product Status:
-	Obsolete
DiGi-Electronics Programmable:	Base Product Number:
Not Verified	AD8522

## **Environmental & Export classification**

Moisture Sensitivity Level (MSL):	ECCN:
1 (Unlimited)	EAR99
HTSUS:	
8542.39.0001	



# TAPE AND REEL PACKAGING

#### Introduction

The electronics industry is making a tremendous investment in surfacemount technology. The reasons for this investment include cost savings resulting from automated component placement and increased density of PCB layout due to smaller package sizes.

Today's placement machines can pick and place thousands of components per hour with a very high degree of accuracy. To achieve this performance, the component delivery system must be capable of feeding parts at high speeds in a consistent orientation, positively indexed to the demands of the machine. The leads of the components must be protected from damage during shipment, handling, and placement.

The preferred packing material available today for these demands is tape and reel. Analog Devices' tape and reel system is fully compatible with the detaping equipment that is standard in most automated placement equipment.

In the tape and reel format, the components are placed in specifically designed pockets embossed in a plastic carrier tape. The cover tape is sealed to the carrier tape to keep the parts in place in these pockets. A row of sprocket holes is provided along one edge of the embossed tape to facilitate positive indexing. The tape is then wound onto a rigid plastic reel that provides mechanical protection during handling and storage. These reels are dust-free and compatible with a clean environment.

#### Specifications

Analog Devices' tape and reel specifications are in conformance with the EIA Standard 481 "Taping of Surface-Mount Components for Automatic Placement."

#### **ESD** Protection

Analog Devices' tape and reel delivery system is designed to offer a very high degree of protection against electrostatic discharge (ESD). All tape and reel materials are static-dissipative. In addition, drypacked reels are shipped in moisture barrier bags; nondrypacked reels are shipped in a box with ESD conductive coating or in a conductive ESD bag. To retain the benefits of this protection, the bags should be opened only at ESD controlled workstations by trained personnel.

#### Peel Back Strength

The peel back force will be between 10 g and 100 g for 8 mm wide tape and 10 g to 130 g for tapes 12 mm and wider when tested at room temperature and pulled at a 175° to 180° angle with a peel-off speed of  $300 \pm 10$  mm/min.

#### **Direction of Feed**

Direction of feed is defined as the direction in which the end user unreels the tape. The direction of feed for all products is counterclockwise when the reel is held with the round sprocket holes facing the observer.



Figure 1. Direction of feed.

#### Pin 1 Orientation

Devices are reeled so that Pin 1 is oriented properly with the direction of feed and round sprocket holes. Pin 1 orientation is denoted as C1 to C4, or M1, with respect to the direction of feed and round sprocket holes, as illustrated below.



Figure 2. Pin 1 orientation reference.



### Table 1. Standard Package Tape and Reel (See Page 7 for Reel Definitions)

	Package	Body Size	Number	Reel Quantity			Tape Width	Tape Width Tape Pitch	Pin 1
Device Package Type	Designator	(mm)	of Leads	7" Reel	13" Reel (4" Hub)	13" Reel (6" Hub)	(mm)	(mm)	Orientation
PLCC	Р	N/A	20	250	1000	N/A	16	12	M1
PLCC	Р	N/A	28, 32	Not offered	750	N/A	24	16	M1
PLCC	Р	N/A	44	Not offered	500	N/A	32	24	M1
PLCC	Р	N/A	68	Not offered	N/A	250	44	32	M1
PLCC	Р	N/A	84	Not offered	N/A	250	44	36	M1
JLCC	J	N/A	28	Not offered	250	N/A	24	16	M1
JLCC	J	N/A	44	Not offered	500	N/A	32	24	M1
LCC	E	N/A	8	250	3000	N/A	12	8	M1
LCC	E	N/A	14	500	2000	N/A	16	12	C2
LCC_V	EY	9 × 9	All counts	Not offered	500	N/A	24	12	C4
SOIC_N/SOIC_N_EP	R/RD	N/A	8	1000	2500	N/A	12	8	C1
SOIC_N/SOIC_N_EP	R/RD	N/A	14, 16	1000	2500	N/A	16	8	C1
QSOP	RQ/RC	N/A	16	1000	2500	N/A	12	8	C1
QSOP	RQ	N/A	20, 24, 28	1000	2500	N/A	16	8	C1
SOIC_W_FP	RN	N/A	28	400	1000	N/A	16	12	C1
SOIC_W/SOIC_W_BAT	RW/RB	N/A	14, 16	400	1000	N/A	16	12	C1
SOIC_W/SOIC_W_BAT	RW/RB	N/A	18	400	1000	N/A	24	16	C1
SOIC_W/SOIC_W_BAT	RW/RB	N/A	20, 24	400	1000	N/A	24	12	C1
SOIC_W/SOIC_W_BAT	RW/RB	N/A	28	400	1000	N/A	32	12	C1
SOIC_CAV	RG	N/A	16	Not offered	500	N/A	24	16	C1
SOIC_IC	RI	N/A	6	400	1500	N/A	16	12	C1
SOIC_IC	RI	N/A	8	400	1500	N/A	16	12	C1
SOIC_IC	RI	N/A	16	400	1000	N/A	24	12	C1
SOIC_IC	RI	N/A	20	400	1000	N/A	24	12	C1
SSOP	RS	N/A	16, 20, 24	500	1500	N/A	16	12	C1
SSOP	RS	N/A	28	500	1500	N/A	24	12	C1
PS0P2	RP	N/A	20, 28	200	1000	N/A	24	12	C1
PS0P3	RR	N/A	20	Not offered	750	N/A	24	20	C1
S0T-23-3	BT	N/A	3	3000	10.000	N/A	8	4	C4
S0T-231	BJ/BT	N/A	5, 6, 8	3000	10.000	N/A	8	4	C4
SOT-66	RY	N/A	5. 6	3000	N/A	N/A	8	4	C4
S0T-143	RA	N/A	4	3000	10.000	N/A	8	4	C4
TSOT	UJ	N/A	5, 6, 8	3000	10.000	N/A	8	4	C4
S0T-223	KC	N/A	3	500	2500	N/A	16	12	C4
SC70	KS	N/A	3.4.5.6	3000	10.000	N/A	8	4	C4
SOT-89	RK	N/A	3	1000	3000	N/A	12	8	C1
TSSOP_4.4	RU/RE	N/A	8, 14, 16, 20, 24, 28, 38	1000	2500	N/A	16	8	C1
TSSOP 61	RV	N/A	28 48	Not offered	2500	N/A	24	12	C1
MSOP/MINE SO	RM/RH	N/A	8, 10	1000	3000	N/A	12	8	C1
CERPAK	00	N/A	14	Not offered	750	N/A	24	16	C1
TOFP	SU/SV	7 × 7 × 1 0	All counts	500	2000	Not offered	16	12	C.2
TOFP	SU/SV	$10 \times 10 \times 10$	All counts	Not offered	1500	Not offered	24	16	62
TOEP	SII/SV	$10 \times 10 \times 1.0$ $12 \times 12 \times 1.0$		Not offered	1000	Not offered	24	24	C2
	30/31	12 0 12 0 1.0	AILCOUTIES	NOT DITEIED	1000		24	24	62

### Table 1. Standard Package Tape and Reel (Continued) (See Page 7 for Reel Definitions)

Dovice Reekage Type	Package	Body Size	Number	Reel Quantity		Tape Width	Tape Pitch	Pin 1	
Device Package Type	Designator	(mm)	of Leads	7" Reel	13" Reel (4" Hub)	13" Reel (6" Hub)	(mm)	(mm)	Orientation
TQFP	SU/SV	$14 \times 14 \times 1.0$	All counts	Not offered	1000	Not offered	32	24	C2
LQFP	ST	$7 \times 7 \times 1.4$	All counts	500	2000	Not offered	16	12	C2
LQFP	ST/SW	$10 \times 10 \times 1.4$	All counts	Not offered	1500	Not offered	24	16	C2
LQFP	ST	$12 \times 12 \times 1.4$	All counts	Not offered	1000	Not offered	24	24	C2
LQFP	ST/SW	$14 \times 14 \times 1.4$	All counts	Not offered	1000	Not offered	32	24	C2
LQFP	ST	$14\times 20\times 1.4$	All counts	Not offered	1000	Not offered	44	24	C1
LQFP	ST/SW	$20\times 20\times 1.4$	All counts	Not offered	500	Not offered	44	32	C2
LQFP	ST/SW	$24\times24\times1.4$	All counts	Not offered	450	Not offered	44	32	C2
MQFP	S	$10\times10\times2.0$	All counts	Not offered	800	Not offered	24	24	C2
MQFP	S	$14 \times 14 \times 2.0$	All counts	Not offered	600	Not offered	32	24	C2
MQFP <sup>2</sup>	S	$14 \times 14 \times 2.7$	All counts	Not offered	500 <sup>2</sup>	Not offered	32	24	C2
CSP_BGA	BC	$5 \times 5$	All counts	Not offered	4000	Not offered	12	8	C2
CSP_BGA	BC	6 × 6	All counts	Not offered	2500	Not offered	12	8	C2
CSP_BGA	BC	7 × 7	All counts	Not offered	2000	Not offered	16	12	C2
CSP_BGA	BC	8 × 8	All counts	Not offered	2000	Not offered	16	12	C2
CSP_BGA	BC	9 × 9	All counts	500	2000	Not offered	16	12	C2
CSP_BGA	BC	10 × 10	All counts	400	1500	Not offered	24	16	C2
CSP_BGA	BC	11 × 11	All counts	Not offered	1500	Not offered	24	16	C2
CSP_BGA	BC	12 × 12	All counts	Not offered	1500	Not offered	24	16	C2
CSP_BGA	BC	13 × 13	All counts	Not offered	1000	Not offered	24	24	C2
CSP_BGA	BC	15 × 15	All counts	Not offered	1000	Not offered	24	24	C2
CSP_BGA	BC	17 × 17	All counts	Not offered	1000	Not offered	24	24	C2
CSP_BGA	BC	19 × 19	All counts	Not offered	Not offered	700	32	24	C2
CSP_BGA_EM	BE	5 × 5	81	Not offered	4000	Not offered	12	8	C2
WLBGA/eWLB <sup>3</sup>	BF	5 × 5	81,94	Not offered	4000	Not offered	12	8	C2
BGA	В	19 × 19	All counts	Not offered	Not offered	700	32	24	C2
BGA	В	23 × 23	All counts	Not offered	Not offered	450	44	32	C2
BGA	В	27 × 27	All counts	Not offered	Not offered	450	44	32	C2
BGA	В	35 × 35	All counts	Not offered	Not offered	300	56	40	C2
BGA_ED	BP	10 × 10	All counts	Not offered	1500	Not offered	24	16	C2
BGA_ED	BP	12 × 12	196	Not offered	1500	Not offered	24	16	C2
CBGA	BG	7 × 7	32 balls	Not offered	500	Not offered	16	12	C2
LGA	CC	3 × 3	All counts	1500	5000	Not offered	12	8	C2
LGA	CC	3 × 3.25	All counts	1500	5000	Not offered	12	8	C1
LGA	CC	$3 \times 5$	All counts	1500	5000	Not offered	12	8	C1
LGA	CC	3.5 × 4.5	24	1500	5000	Not offered	12	8	C1
LGA	CC	5 × 5	8, 20	1000	4000	Not offered	12	8	C2
LGA	CC	5 × 5	13	1000	4000	Not offered	12	8	C1
LGA	CC	5 × 4	All counts	1000	Not offered	Not offered	12	8	C2
LGA	CC	6 × 8	All counts	1000	4000	Not offered	16	8	C1
LGA	CC	$7 \times 7 \times 0.96$	32	750	2500	Not offered	16	12	C2
LGA	CC	8 × 4	24	1000	5000	Not offered	16	12	C2
LGA	CC	8 × 10	All counts	Not offered	2000	Not offered	24	12	C1
LGA	CC	10 × 10	All counts	Not offered	2000	Not offered	24	12	C2

### Table 1. Standard Package Tape and Reel (Continued) (See Page 7 for Reel Definitions)

Uniced Relational Probability     Designation     Original of Leads     Part Boal (4* Hadd)     152* Read (4* Hadd)     Original Probability     Original Probability       LGA, CW     CE     3.15 × 2.5 × 0.98     3     1000     10000     Net offered     12     4     C3       LGA, CW     CE     3.35 × 2.5 × 0.92     3     1000     10000     Net offered     12     4     C3       LGA, CW     CE     3.35 × 2.5 × 0.92     3     1000     10000     Net offered     12     4     C3       LGA, CW     CE     3.75 × 4.72 × 0.98     9     1000     4500     Net offered     12     8     C3       LGA, CW     CE     3.76 × 4.72 × 0.98     9     1000     4000     Net offered     12     8     C1       LGA, CW     CE     5.82 × 1.45     16     1000     4000     Net offered     12     8     C1       LGA, CW     CE     5.82 × 1.45     14     1000     4000     Net offered     12     4     C1 <t< th=""><th></th><th>Package</th><th>Body Size</th><th>Number</th><th></th><th>Reel Quantity</th><th>y .</th><th>Tape Width</th><th>Tape Pitch</th><th>Pin 1</th></t<>		Package	Body Size	Number		Reel Quantity	y .	Tape Width	Tape Pitch	Pin 1
LAA     CC     11 × 11     All courts     Not offered     150     Not offered     24     16     C2       LGA_CMV     CE     3.35 × 2.5 × 0.8     3     1000     10000     Not offered     12     44     G3       LGA_CMV     CE     3.35 × 2.5 × 0.8     3     1000     10000     Not offered     12     44     G3       LGA_CMV     CE     3.35 × 2.5 × 0.8     3     1000     10000     Not offered     12     44     G3       LGA_CMV     CE     3.76 × 4.72 × 0.8     3     1000     4500     Not offered     12     88     C3       LGA_CMV     CE     3.76 × 4.72 × 0.8     6     500     4000     Not offered     12     88     C1       LGA_CMV     CE     5.72 × 1.45     12     1000     4000     Not offered     12     88     C1       LGA_CMV     CE     5.8 × 4.5 × 1.5     14     1000     4000     Not offered     88     4     C1       LGA_CMV     <	Device Package Type	Designator	(mm)	of Leads	7" Reel	13" Reel (4" Hub)	13" Reel (6" Hub)	(mm)	(mm)	Orientation
LAA_OWCE3.35 × 2.5 × 1.03100010000Not offered1246.3LAA_OWCE3.35 × 2.5 × 0.83100010000Not offered1246.3LGA_CAVCE3.35 × 2.5 × 0.83100010000Not offered1246.3LGA_CAVCE3.76 × 4.72 × 1.0610004500Not offered1286.3LGA_CAVCE3.76 × 4.72 × 3.0610004000Not offered1286.3LGA_CAVCE5.76 × 4.72 × 3.0610004000Not offered1286.3LGA_CAVCE5.8 × 4.72 × 3.01210004000Not offered1286.1LGA_CAVCE5.8 × 4.5 × 1.21210004000Not offered1286.1LGA_CAVCE5.8 × 4.5 × 1.21410004000Not offered1886.1LGA_CAVCE5.8 × 4.5 × 1.21410004000Not offered18846.1LGA_CAVCE5.8 × 5	LGA	CC	11 × 11	All counts	Not offered	1500	Not offered	24	16	C2
LAA_CAVCE3.35 × 2.5 × 0.913100010000Nut offered124C3LBA_CAVCE3.35 × 2.5 × 0.823100010000Nut offered128C3LBA_CAVCE3.76 × 4.72 × 106100044500Nut offered128C3LBA_CAVCE3.76 × 4.72 × 109100044500Nut offered128C3LBA_CAVCE3.76 × 4.72 × 1051604000Nut offered128C3LBA_CAVCE4 × 3 × 1.211610004000Nut offered128C1LBA_CAVCE5 × 2.8 × 1.211410004000Nut offered128C1LBA_CAVCE5 × 2.8 × 1.511410004000Nut offered168C1LGA_CAVCE6.5 × 2.8 × 1.511410004000Nut offered184C2LGA_CAVCE6.5 × 2.8 × 1.5114100010.000Nut offered84C1LGA_CAVCE6.5 × 2.8 × 1.5114100010.000Nut offered84C2LGA_CAVCE6.5 × 2.8 × 1.511100010.000Nut offered84C2LGA_CAVCE6.5 × 2.8 × 1.511100010.000Nut offered184C2LGA_CAVCE6.5 × 2.8 × 1.511100010.000 <td>LGA_CAV</td> <td>CE</td> <td><math>3.35 \times 2.5 \times 1.0</math></td> <td>3</td> <td>1000</td> <td>10000</td> <td>Not offered</td> <td>12</td> <td>4</td> <td>C3</td>	LGA_CAV	CE	$3.35 \times 2.5 \times 1.0$	3	1000	10000	Not offered	12	4	C3
LAA     DE     33 × 2.5 × 0.82     3     1000     10000     Not offered     12     4     C3       L6A_CAV     CE     3.3 × 2.5 × 0.82     3     1000     10000     Not offered     12     8     C3       L6A_CAV     CE     3.76 × 4.72 × 0.8     6     1000     4500     Not offered     12     8     C3       L6A_CAV     CE     3.76 × 4.72 × 0.8     6     500     2000     Not offered     12     8     C3       L6A_CAV     CE     5.7 2.8 × 1.2     16     1000     4000     Not offered     12     8     C1       L6A_CAV     CE     5.8 × 8.5 × 1.2     18     1000     4000     Not offered     12     8     C1       L6A_CAV     CE     6.5 × 2.8 × 1.2     14     1000     4000     Not offered     8     4     C1       L6A_CAV     CE     6.5 × 2.8 × 1.5     14     1000     4000     Not offered     8     4     C1       L6A_CAV     CE	LGA_CAV	CE	$3.35\times2.5\times0.98$	3	1000	10000	Not offered	12	4	C3
LGA_CAVCE3.35 × 2.5 × 0.883100010000Not offered124C3LGA_CAVCE3.76 × 4.72 × 1.0610004500Not offered128C3LGA_CAVCE3.76 × 4.72 × 0.88910004500Not offered128C3LGA_CAVCE5 × 2.8 × 1.21610004000Not offered128C1LGA_CAVCE5 × 2.8 × 1.51210004000Not offered128C1LGA_CAVCE5 × 2.8 × 1.51410004000Not offered168C1LGA_CAVCE6.5 × 2.8 × 1.51410004000Not offered184C2LGA_CAVCE6.5 × 2.8 × 1.514100010.000Not offered184C2LGA_CAVCE6.5 × 2.8 × 1.514100010.000Not offered124C2LGA_CAVCE6.5 × 2.8 × 1.5All courts300010.000Not offered124C2LGA_CAVCE2.1 × 2.1 v.55All courts3000 <t< td=""><td>LGA_CAV</td><td>CE</td><td><math display="block">3.35\times2.5\times0.92</math></td><td>3</td><td>1000</td><td>10000</td><td>Not offered</td><td>12</td><td>4</td><td>C3</td></t<>	LGA_CAV	CE	$3.35\times2.5\times0.92$	3	1000	10000	Not offered	12	4	C3
LGA_CAVCE3.76 × 4.72 × 1.0610004500Not offered128C3LGA_CAVCE3.76 × 4.72 × 0.39910004500Not offered128C3LGA_CAVCE3.76 × 4.72 × 0.39910004500Not offered128C2LGA_CAVCE4 × 3 × 1.21610004000Not offered128C1LGA_CAVCE5 × 2.8 × 1.41210004000Not offered128C1LGA_CAVCE5 × 2.8 × 1.41210004000Not offered168C1LGA_CAVCE6.5 × 2.8 × 1.51410004000Not offered168C1LGA_CAVCE6.5 × 2.8 × 1.551410004000Not offered168C1LGA_CAVCE6.5 × 2.8 × 1.551410004000Not offered168C1LGA_CAVCE6.5 × 2.8 × 1.55All counts300010.000Not offered84C1LFCSPCP1.3 × 1.6 × 0.55All counts300010.000Not offered124C2LFCSPCP2.1 × 2.1 × 0.55All counts300010.000Not offered124C2LFCSPCP2.1 × 2.1 × 0.55All counts300010.000Not offered124C2LFCSPCP2.1 × 2.1 × 0.55All cou	LGA_CAV	CE	$3.35\times2.5\times0.88$	3	1000	10000	Not offered	12	4	C3
LGA_CAVCE3.76 × 4.72 × 3.9910004500Not offered128C3LGA_CAVCE3.76 × 4.72 × 3.565002000Not offered128C3LGA_CAVCE5 × 2.8 × 1.21210004000Not offered128C1LGA_CAVCE5 × 2.8 × 1.451210004000Not offered128C1LGA_CAVCE5 × 2.8 × 1.451210004000Not offered128C1LGA_CAVCE5 × 2.8 × 1.551410004000Not offered168C1LGA_CAVCE6 5 × 2.8 × 1.551410004000Not offered168C1LGA_CAVCE6 5 × 2.8 × 1.551410004000Not offered84C1LGA_CAVCE6 5 × 2.8 × 1.5514100010.000Not offered84C1LFCSPCP1.8 × 1.6 × 0.55All counts300010.000Not offered84C1LFCSPCP2.4 × 3.0 × 5.5All counts300010.000Not offered124C1LFCSPCP2.4 × 3.0 × 5.5All counts300010.000Not offered128C2LFCSPCP2.4 × 3.0 × 5.5All counts15005000Not offered128C2LFCSPCP3.8 × 3.5 × 5.5 × 5.5All count	LGA_CAV	CE	$3.76\times4.72\times1.0$	6	1000	4500	Not offered	12	8	C3
L6A_CAV     CE     3.76 × 4.72 × 3.5     6     500     2000     Not offered     12     8     C3       L6A_CAV     CE     4 × 3 × 1.2     16     1000     4000     Not offered     12     8     C2       L6A_CAV     CE     5 × 2.8 × 1.45     12     1000     4000     Not offered     12     8     C1       L6A_CAV     CE     5 × 2.8 × 1.45     12     18     1000     4000     Not offered     16     8     C1       L6A_CAV     CE     5.8 × 4.5 × 1.2     14     1000     4000     Not offered     16     8     C1       L6A_CAV     CE     6.5 × 2.8 × 1.5     14     1000     4000     Not offered     8     4     C2       L6SP     CP     1.8 × 1.6 × 0.55     6     3000     10,000     Not offered     8     4     C2       LFCSP     CP     2.4 × 2.4 × 0.55     All courts     3000     10,000     Not offered     12     4     C1       LFCSP	LGA_CAV	CE	$3.76\times4.72\times0.98$	9	1000	4500	Not offered	12	8	C3
LGA_CAVCE4 × 3 × 1.2161004000Not offered128C2LGA_CAVCE5 × 2.8 × 1.451210004000Not offered128C1LGA_CAVCE5 × 2.8 × 1.451810004000Not offered128C1LGA_CAVCE6 5 × 2.8 × 1.21410004000Not offered168C1LGA_CAVCE6 5 × 2.8 × 1.551410004000Not offered84C1LGA_CAVCE6 5 × 2.8 × 1.551410004000Not offered84C1LGA_CAVCE6 5 × 2.8 × 1.55Al courts300010,000Not offered84C1LFSPCP2 × 2 × 0.55Al courts300010,000Not offered84C2LFSPCP2 × 3 × 0.55Al courts300010,000Not offered124C2LFSPCP3 × 3 × 0.55Al courts300010,000Not offered124C2LFSPCP3 × 3 × 0.55Al courts300010,000Not offered124C2LFSPCP3 × 3 × 0.55Al courts5000Not offered128C2LFSPCP3 × 3 × 0.55Al courts5000Not offered128C2LFSPCP3 × 3 × 0.55Al courts5000Not offered12<	LGA_CAV	CE	$3.76\times4.72\times3.5$	6	500	2000	Not offered	12	8	C3
LGA_CAV     CE     5 × 2.8 × 1.4     12     1000     4000     Not offered     12     8     C1       LGA_CAV     CE     5 × 2.8 × 1.4     12     1000     4000     Not offered     12     8     C1       LGA_CAV     CE     5.8 × 4.5 × 1.2     14     1000     4000     Not offered     12     8     C1       LGA_CAV     CE     6.5 × 2.8 × 1.2     14     1000     4000     Not offered     16     8     C1       LGA_CAV     CE     6.5 × 2.8 × 1.2     14     1000     4000     Not offered     8     C1       LGA_CAV     CE     6.5 × 2.8 × 1.55     All counts     3000     10.000     Not offered     8     4     C2       LFCSP     CP     2.1 × 2.1 × 0.55     All counts     3000     10.000     Not offered     12     4     C2       LFCSP     CP     2.3 × 0.65     All counts     3000     10.000     Not offered     12     4     C2       LFCSP     CP	LGA_CAV	CE	$4 \times 3 \times 1.2$	16	1000	4000	Not offered	12	8	C2
LGA_CAVCE5 × 2.8 × 1.431210004000Not offered128C1LGA_CAVCE5.8 × 4.5 × 1.21810004000Not offered128C1LGA_CAVCE6.5 × 2.8 × 1.51410004000Not offered168C1LGA_CAVCE6.5 × 2.8 × 1.51410004000Not offered84C1LGA_CAVCE1.3 × 1.6 × 0.55Al courts300010.000Not offered84C1LFCSPCP1.3 × 1.6 × 0.55Al courts300010.000Not offered84C1LFCSPCP2.2 × 0.55Al courts300010.000Not offered84C1LFCSPCP2.2 × 0.55Al courts300010.000Not offered124C2LFCSPCP2.2 × 0.55Al courts300010.000Not offered124C1LFCSPCP3.2 × 0.55Al courts300010.000Not offered124C1LFCSPCP3.2 × 0.55Al courts300010.000Not offered128C2LFCSPCP3.2 × 0.55Al courts15005000Not offered128C2LFCSPCP3.3 × 0.55Al courts15005000Not offered128C2LFCSPCP3.5 × 1.45Al courts1000 <td>LGA_CAV</td> <td>CE</td> <td><math>5 \times 2.8 \times 1.2</math></td> <td>12</td> <td>1000</td> <td>4000</td> <td>Not offered</td> <td>12</td> <td>8</td> <td>C1</td>	LGA_CAV	CE	$5 \times 2.8 \times 1.2$	12	1000	4000	Not offered	12	8	C1
LGA_CAV     CE     5.8 × 4.5 × 1.2     18     1000     4000     Not offered     12     8     C1       LGA_CAV     CE     6.5 × 2.8 × 1.2     14     1000     4000     Not offered     16     8     C1       LGA_CAV     CE     6.5 × 2.8 × 1.5     14     1000     4000     Not offered     16     8     C1       LGA_CAV     CE     6.5 × 2.8 × 1.5     14     1000     4000     Not offered     8     4     C1       LGSP     CP     1.8 × 1.6 × 0.55     6     3000     10,000     Not offered     8     4     C2       LFCSP     CP     2.4 × 1.0 × 0.55     All counts     3000     10,000     Not offered     8     4     C2       LFCSP     CP     2.4 × 0.55     All counts     3000     10,000     Not offered     12     4     C1       LFCSP     CP     3 × 3 × 0.55     All counts     3000     10,000     Not offered     12     8     C2       LFCSP	LGA_CAV	CE	$5 \times 2.8 \times 1.45$	12	1000	4000	Not offered	12	8	C1
LGA_CAVCE6.5 × 2.8 × 1.21410004000Not offered168C1LGA_CAVCE6.5 × 2.8 × 1.51410004000Not offered84C1LFCSPCP1.3 × 1.6 × 0.55All courts300010,000Not offered84C2LFCSPCP2.2 × 0.55All courts300010,000Not offered84C2LFCSPCP2.2 × 0.55All courts300010,000Not offered124C2LFCSPCP2.1 × 1.0 × 55All courts300010,000Not offered124C1LFCSPCP2.3 × 0.75All courts300010,000Not offered124C1LFCSPCP3.8 × 0.85All courts300010,000Not offered124C1LFCSPCP3.8 × 0.85All courts300010,000Not offered128C2LFCSPCP3.8 × 0.85All courts1500S000Not offered128C2LFCSPCP3.8 × 0.85All courts1500S000Not offered128C2LFCSPCP3.8 × 0.85All courts1500S000Not offered128C2LFCSPCP3.8 × 0.85All courts1500S000Not offered128C2LFCSPCP3.8 × 0.85All courts <t< td=""><td>LGA_CAV</td><td>CE</td><td><math>5.8 \times 4.5 \times 1.2</math></td><td>18</td><td>1000</td><td>4000</td><td>Not offered</td><td>12</td><td>8</td><td>C1</td></t<>	LGA_CAV	CE	$5.8 \times 4.5 \times 1.2$	18	1000	4000	Not offered	12	8	C1
LGA_CAVCE6.5 × 2.8 × 1.551410004000Not offered168C1LFCSPCP1.3 × 1.6 × 0.55All counts300010,000Not offered84C1LFCSPCP1.8 × 1.6 × 0.55All counts300010,000Not offered84C2LFCSPCP2.1 × 2.1 × 0.55All counts300010,000Not offered84C2LFCSPCP2.1 × 2.1 × 0.55All counts300010,000Not offered124C2LFCSPCP2.3 × 0.75All counts300010,000Not offered124C2LFCSPCP3 × 2 × 0.75All counts300010,000Not offered124C1LFCSPCP3 × 2 × 0.75All counts500010,000Not offered124C1LFCSPCP3 × 3 × 0.55All counts15005000Not offered128C2LFCSPCP3 × 3 × 0.55All counts15005000Not offered128C2LFCSPCP3 × 3 × 0.55All counts15005000Not offered128C2LFCSPCP3 × 3 × 0.55All counts10005000Not offered128C2LFCSPCP3 × 3 × 0.55All counts10005000Not offered128C2LFCSPCP3 × 3	LGA_CAV	CE	6.5  imes 2.8  imes 1.2	14	1000	4000	Not offered	16	8	C1
LFCSPCP $1.3 \times 1.6 \times 0.55$ All counts300010,000Not offered84C1LFCSPCP $1.6 \times 1.6 \times 0.55$ 6300010,000Not offered84C2LFCSPCP $2.2 \times 2.55$ All counts300010,000Not offered84C2LFCSPCP $2.1 \times 2.1 \times 0.56$ All counts300010,000Not offered84C2LFCSPCP $2.3 \times 0.75$ All counts300010,000Not offered124C2LFCSPCP $3 \times 2 \times 0.75$ All counts300010,000Not offered124C1LFCSPCP $3 \times 2 \times 0.75$ All counts300010,000Not offered124C1LFCSPCP $3 \times 2 \times 0.75$ All counts300010,000Not offered124C1LFCSPCP $3 \times 3 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.75$ All counts10004000Not offered128C2LFCSPCP $3 \times 3 \times 0.75$ All counts10004000Not offered128C2LFCSPCP	LGA_CAV	CE	$6.5\times2.8\times1.55$	14	1000	4000	Not offered	16	8	C1
LFCSP     CP     1.6 × 1.6 × 0.55     G     3000     10,000     Not offered     8     4     C2       LFCSP     CP     2 × 2 × 0.55     All counts     3000     10,000     Not offered     8     4     C2       LFCSP     CP     2 × 3 × 0.65     All counts     3000     10,000     Not offered     12     4     C2       LFCSP     CP     2 × 3 × 0.65     All counts     3000     10,000     Not offered     12     4     C2       LFCSP     CP     2 × 3 × 0.75     All counts     3000     10,000     Not offered     12     4     C1       LFCSP     CP     3 × 2 × 0.75     All counts     3000     10,000     Not offered     12     4     C1       LFCSP     CP     3 × 3 × 0.85     All counts     1500     S000     Not offered     12     8     C2       LFCSP     CP     3 × 3 × 0.85     All counts     1500     S000     Not offered     12     8     C2       LF	LFCSP	СР	1.3 × 1.6 × 0.55	All counts	3000	10,000	Not offered	8	4	C1
LFCSPCP2 × 2 × 0.55All counts300010,000Not offered84C2LFCSPCP2 × 3 × 0.658300010,000Not offered124C2LFCSPCP2 × 3 × 0.75All counts300010,000Not offered124C2LFCSPCP3 × 2 × 0.75All counts300010,000Not offered124C1LFCSPCP3 × 2 × 0.75All counts300010,000Not offered124C1LFCSPCP3 × 2 × 0.85All counts300010,000Not offered124C1LFCSPCP3 × 3 × 0.85All counts1500S5000Not offered128C2LFCSPCP3 × 3 × 0.85All counts1500S5000Not offered128C2LFCSPCP3 × 3 × 0.85All counts1500S5000Not offered128C2LFCSPCP3 × 3 × 0.85All counts1500S000Not offered128C2LFCSPCP4 × 3 × 0.55I4<	LFCSP	CP	$1.6\times1.6\times0.55$	6	3000	10,000	Not offered	8	4	C2
LFGSP     CP     2.1 × 2.1 × 0.55     All counts     3000     10,000     Not offered     8     4     C1       LFGSP     CP     2 × 3 × 0.65     8     3000     10,000     Not offered     12     4     C2       LFGSP     CP     3 × 2 × 0.75     All counts     3000     10,000     Not offered     12     4     C1       LFGSP     CP     3 × 2 × 0.75     All counts     3000     10,000     Not offered     12     4     C1       LFGSP     CP     3 × 2 × 0.85     All counts     1500     5000     Not offered     12     8     C2       LFGSP     CP     3 × 3 × 0.55     All counts     1500     5000     Not offered     12     8     C2       LFGSP     CP     3 × 3 × 0.55     All counts     1500     5000     Not offered     12     8     C2       LFGSP     CP     3 × 3 × 0.55     All counts     1000     4000     Not offered     12     8     C2       LFGSP	LFCSP	СР	$2 \times 2 \times 0.55$	All counts	3000	10,000	Not offered	8	4	C2
LFCSPCP2 × 3 × 0.658300010,000Not offered124C2LFCSPCP2 × 3 × 0.75All counts300010,000Not offered124C1LFCSPCP3 × 2 × 0.75All counts300010,000Not offered124C1LFCSPCP3 × 2 × 0.85All counts300010,000Not offered124C1LFCSPCP3 × 3 × 0.85All counts15005000Not offered128C2LFCSPCP3 × 3 × 0.55All counts10004000Not offered128C2LFCSPCP3 × 3 × 0.55All counts10004000Not offered128C2LFCSPCP3 × 5 × 1.45All counts10004000Not offered128C2LFCSPCP3 × 5 × 1.45All counts10005000Not offered128C2LFCSPCP4 × 3 × 0.55All counts15005000Not offered128C2LFCSPCP4 × 4 × 0.55All count	LFCSP	СР	$2.1\times2.1\times0.55$	All counts	3000	10,000	Not offered	8	4	C1
LFCSP     CP     2 × 3 × 0.75     All counts     3000     10,000     Not offered     12     4     C2       LFCSP     CP     3 × 2 × 0.75     All counts     3000     10,000     Not offered     12     4     C1       LFCSP     CP     3 × 2 × 0.85     All counts     3000     10,000     Not offered     12     4     C1       LFCSP     CP     3 × 3 × 0.85     All counts     1500     5000     Not offered     12     8     C2       LFCSP     CP     3 × 3 × 0.55     All counts     1500     5000     Not offered     12     8     C2       LFCSP     CP     3 × 3 × 0.55     All counts     1500     5000     Not offered     12     8     C2       LFCSP     CP     3 × 3 × 0.55     All counts     1000     5000     Not offered     12     8     C2       LFCSP     CP     3 × 3 × 0.55     All counts     1000     4000     Not offered     12     8     C2       L	LFCSP	CP	$2 \times 3 \times 0.65$	8	3000	10,000	Not offered	12	4	C2
LFCSP     CP     3 × 2 × 0.75     All counts     3000     10,000     Not offered     12     4     C1       LFCSP     CP     3 × 2 × 0.85     All counts     3000     10,000     Not offered     12     4     C1       LFCSP     CP     3 × 3 × 0.85     All counts     1500     S000     Not offered     12     8     C2       LFCSP     CP     3 × 3 × 0.55     All counts     1500     S000     Not offered     12     8     C2       LFCSP     CP     3 × 3 × 0.55     All counts     1500     S000     Not offered     12     8     C2       LFCSP     CP     3 × 3 × 0.55     All counts     1000     S000     Not offered     12     8     C2       LFCSP     CP     3 × 5 × 1.45     All counts     1000     Mot offered     12     8     C2       LFCSP     CP     4 × 3 × 0.65     10     1000     S000     Not offered     12     8     C2       LFCSP     CP	LFCSP	СР	$2 \times 3 \times 0.75$	All counts	3000	10,000	Not offered	12	4	C2
LFGSPCP $3 \times 2 \times 0.85$ All counts $3000$ $10,000$ Not offered $12$ $4$ C1LFGSPCP $3 \times 3 \times 0.85$ All counts $1500$ $5000$ Not offered $12$ $8$ C2LFGSPCP $3 \times 3 \times 0.55$ All counts $1500$ $5000$ Not offered $12$ $8$ C2LFGSPCP $3 \times 3 \times 0.55$ All counts $1500$ $5000$ Not offered $12$ $8$ C2LFGSPCP $3 \times 3 \times 0.55$ All counts $1000$ $5000$ Not offered $12$ $8$ C2LFGSPCP $3 \times 3 \times 0.55$ All counts $1000$ $4000$ Not offered $12$ $8$ C2LFGSPCP $3 \times 3 \times 1.45$ All counts $1000$ $4000$ Not offered $12$ $8$ C2LFGSPCP $3 \times 5 \times 1.5$ All counts $1000$ $4000$ Not offered $12$ $8$ C2LFGSPCP $4 \times 3 \times 0.65$ 10 $1000$ $5000$ Not offered $12$ $8$ C2LFGSPCP $4 \times 3 \times 0.55$ All counts $1500$ $5000$ Not offered $12$ $8$ C2LFGSPCP $4 \times 4 \times 0.55$ All counts $1500$ $5000$ Not offered $12$ $8$ C2LFGSPCP $4 \times 4 \times 0.55$ All counts $1500$ $5000$ Not offered $12$ $8$ C2LFGSPCP $4 \times 4 \times 0.55$ All counts $1500$ $5000$	LFCSP	СР	$3 \times 2 \times 0.75$	All counts	3000	10,000	Not offered	12	4	C1
LFCSPCP $3 \times 3 \times 0.85$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.55$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.65$ All counts10005000Not offered128C2LFCSPCP $3 \times 3 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $3 \times 3 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $3 \times 3 \times 0.75$ 241500Not offered128C2LFCSPCP $3 \times 5 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 3 \times 0.75$ 1415005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.55$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.55$ All counts1500<	LFCSP	СР	$3 \times 2 \times 0.85$	All counts	3000	10,000	Not offered	12	4	C1
LFCSPCP $3 \times 3 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.55$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.65$ 810005000Not offered128C2LFCSPCP $3 \times 3 \times 0.65$ 810004000Not offered128C2LFCSPCP $3 \times 3 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $3 \times 3 \times 1.45$ All counts10005000Not offered128C2LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 3 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.85$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.85$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $4 \times 4 \times 1.45$ <td>LFCSP</td> <td>СР</td> <td><math>3 \times 3 \times 0.85</math></td> <td>All counts</td> <td>1500</td> <td>5000</td> <td>Not offered</td> <td>12</td> <td>8</td> <td>C2</td>	LFCSP	СР	$3 \times 3 \times 0.85$	All counts	1500	5000	Not offered	12	8	C2
LFCSPCP $3 \times 3 \times 0.55$ All counts15005000Not offered128C2LFCSPCP $3 \times 3 \times 0.65$ 810005000Not offered128C2LFCSPCP $3 \times 3 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $3 \times 5 \times 1.55$ All counts10004000Not offered128C2LFCSPCP $3 \times 5 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $3 \times 5 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C1LFCSP/LFCSP_SSCP $4 \times 4 \times$	LFCSP	СР	$3 \times 3 \times 0.75$	All counts	1500	5000	Not offered	12	8	C2
LFCSPCP $3 \times 3 \times 0.65$ 810005000Not offered128C2LFCSPCP $3 \times 3 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $3.5 \times 3.5 \times 0.75$ 241500Not offeredNot offered128C2LFCSPCP $3.5 \times 3.5 \times 0.75$ 241500Not offeredNot offered128C2LFCSPCP $3 \times 5 \times 1.45$ All counts10004000Not offered128C1LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 3 \times 0.75$ 1415005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.55$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.55$ All counts15005000Not offered128C2LFCSPCP $4 \times 5 \times 0.75$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts <td>LFCSP</td> <td>СР</td> <td><math>3 \times 3 \times 0.55</math></td> <td>All counts</td> <td>1500</td> <td>5000</td> <td>Not offered</td> <td>12</td> <td>8</td> <td>C2</td>	LFCSP	СР	$3 \times 3 \times 0.55$	All counts	1500	5000	Not offered	12	8	C2
LFCSPCP $3 \times 3 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $3.5 \times 3.5 \times 0.75$ 241500Not offeredNot offered128C2LFCSPCP $3 \times 5 \times 1.45$ All counts10004000Not offered128C1LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 3 \times 0.75$ 1415005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.85$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $4 \times 4 \times 1.45$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts </td <td>LFCSP</td> <td>CP</td> <td><math>3 \times 3 \times 0.65</math></td> <td>8</td> <td>1000</td> <td>5000</td> <td>Not offered</td> <td>12</td> <td>8</td> <td>C2</td>	LFCSP	CP	$3 \times 3 \times 0.65$	8	1000	5000	Not offered	12	8	C2
LFCSPCP $3.5 \times 3.5 \times 0.75$ 241500Not offeredNot offered128C2LFCSPCP $3 \times 5 \times 1.45$ All counts10004000Not offered128C1LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 3 \times 0.75$ 1415005000Not offered128C1LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $4 \times 4 \times 0.85$ All counts15005000Not offered128C2LFCSPCP $4 \times 5 \times 0.90$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All	LFCSP	СР	3 × 3 × 1.45	All counts	1000	4000	Not offered	12	8	C2
LFCSPCP $3 \times 5 \times 1.45$ All counts10004000Not offered128C1LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 3 \times 0.75$ 1415005000Not offered128C1LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSP_LFCSP_SSCP/CS $4 \times 4 \times 1.45$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts15005000Not offered128C1LFCSP_LFCSP_SSCP/CS $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $5 \times 5$	LFCSP	CP	3.5  imes 3.5  imes 0.75	24	1500	Not offered	Not offered	12	8	C2
LFCSPCP $4 \times 3 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 3 \times 0.75$ 1415005000Not offered128C1LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.85$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $4 \times 4 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $4 \times 5 \times 0.75$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.75$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts15005000Not offered128C1LFCSP_LFCSP_SSCP/CS $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $6 \times 5 \times 0.85$ All counts15005000Not offered128C1LFCSP_LFCSP_SSCP/CS $5 \times 5 \times 0.85$ All counts15005000Not offered128C2LFCSPCP <t< td=""><td>LFCSP</td><td>СР</td><td><math>3 \times 5 \times 1.45</math></td><td>All counts</td><td>1000</td><td>4000</td><td>Not offered</td><td>12</td><td>8</td><td>C1</td></t<>	LFCSP	СР	$3 \times 5 \times 1.45$	All counts	1000	4000	Not offered	12	8	C1
LFCSPCP $4 \times 3 \times 0.75$ 1415005000Not offered128C1LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.85$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $4 \times 4 \times 1.45$ All counts15005000Not offered128C2LFCSPCP $4 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $4 \times 5 \times 0.75$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.75$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.90$ All counts15005000Not offered128C1LFCSP/LFCSP_SSCP/CS $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $5 \times 5 \times 0.85$ All counts15005000Not offered128C2 <td>LFCSP</td> <td>CP</td> <td><math>4 \times 3 \times 0.65</math></td> <td>10</td> <td>1000</td> <td>5000</td> <td>Not offered</td> <td>12</td> <td>8</td> <td>C2</td>	LFCSP	CP	$4 \times 3 \times 0.65$	10	1000	5000	Not offered	12	8	C2
LFCSPCP $4 \times 4 \times 0.65$ 1010005000Not offered128C2LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.85$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $4 \times 4 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $4 \times 5 \times 0.75$ All counts10004000Not offered128C2LFCSPCP $4 \times 5 \times 0.75$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.90$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts15005000Not offered128C1LFCSP/LFCSP_SSCP/CS $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $5 \times 5 \times 0.85$ All counts15005000Not offered128C2 <td>LFCSP</td> <td>СР</td> <td><math>4 \times 3 \times 0.75</math></td> <td>14</td> <td>1500</td> <td>5000</td> <td>Not offered</td> <td>12</td> <td>8</td> <td>C1</td>	LFCSP	СР	$4 \times 3 \times 0.75$	14	1500	5000	Not offered	12	8	C1
LFCSPCP $4 \times 4 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $4 \times 4 \times 0.85$ All counts15005000Not offered128C2LFCSP/LFCSP_SSCP/CS $4 \times 4 \times 1.45$ All counts10004000Not offered128C2LFCSPCP $4 \times 5 \times 0.75$ All counts10004000Not offered128C2LFCSPCP $4 \times 5 \times 0.75$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.90$ All counts15005000Not offered128C1LFCSPCP $4 \times 5 \times 0.95$ All counts15005000Not offered128C1LFCSP/LFCSP_SSCP/CS $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $5 \times 5 \times 0.75$ All counts15005000Not offered128C2LFCSPCP $5 \times 5 \times 0.85$ All counts15005000Not offered128C2	LFCSP	CP	$4 \times 4 \times 0.65$	10	1000	5000	Not offered	12	8	C2
LFCSP     CP $4 \times 4 \times 0.85$ All counts     1500     5000     Not offered     12     8     C2       LFCSP/LFCSP_SS     CP/CS $4 \times 4 \times 1.45$ All counts     1000     4000     Not offered     12     8     C2       LFCSP     CP $4 \times 5 \times 0.75$ All counts     1000     4000     Not offered     12     8     C2       LFCSP     CP $4 \times 5 \times 0.75$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.90$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.95$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.95$ All counts     1500     5000     Not offered     12     8     C2       LFCSP/LFCSP_SS     CP/CS $5 \times 5 \times 0.75$ All counts     1500     5000     Not offered     12     8     C2 <td>LFCSP</td> <td>СР</td> <td><math>4 \times 4 \times 0.75</math></td> <td>All counts</td> <td>1500</td> <td>5000</td> <td>Not offered</td> <td>12</td> <td>8</td> <td>C2</td>	LFCSP	СР	$4 \times 4 \times 0.75$	All counts	1500	5000	Not offered	12	8	C2
LFCSP/LFCSP_SS     CP/CS $4 \times 4 \times 1.45$ All counts     1000     4000     Not offered     12     8     C2       LFCSP     CP $4 \times 5 \times 0.75$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.90$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.90$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.95$ All counts     1500     5000     Not offered     12     8     C1       LFCSP/LFCSP_SS     CP/CS $5 \times 5 \times 0.75$ All counts     1500     5000     Not offered     12     8     C2       LFCSP/LFCSP_SS     CP/CS $5 \times 5 \times 0.75$ All counts     1500     5000     Not offered     12     8     C2       LFCSP     CP $5 \times 5 \times 0.85$ All counts     1500     5000     Not offered     12     8	LFCSP	СР	$4 \times 4 \times 0.85$	All counts	1500	5000	Not offered	12	8	C2
LFCSP     CP $4 \times 5 \times 0.75$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.90$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.90$ All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP $4 \times 5 \times 0.95$ All counts     1500     5000     Not offered     12     8     C1       LFCSP/LFCSP_SS     CP/CS $5 \times 5 \times 0.75$ All counts     1500     5000     Not offered     12     8     C2       LFCSP     CP $5 \times 5 \times 0.85$ All counts     1500     5000     Not offered     12     8     C2	LFCSP/LFCSP_SS	CP/CS	4 × 4 × 1.45	All counts	1000	4000	Not offered	12	8	C2
LFCSP     CP     4 × 5 × 0.90     All counts     1500     5000     Not offered     12     8     C1       LFCSP     CP     4 × 5 × 0.95     All counts     1500     5000     Not offered     12     8     C1       LFCSP/LFCSP_SS     CP/CS     5 × 5 × 0.75     All counts     1500     5000     Not offered     12     8     C2       LFCSP     CP     5 × 5 × 0.85     All counts     1500     5000     Not offered     12     8     C2	LFCSP	СР	$4 \times 5 \times 0.75$	All counts	1500	5000	Not offered	12	8	C1
LFCSP     CP     4 × 5 × 0.95     All counts     1500     5000     Not offered     12     8     C1       LFCSP/LFCSP_SS     CP/CS     5 × 5 × 0.75     All counts     1500     5000     Not offered     12     8     C2       LFCSP     CP     5 × 5 × 0.85     All counts     1500     5000     Not offered     12     8     C2	LFCSP	СР	$4 \times 5 \times 0.90$	All counts	1500	5000	Not offered	12	8	C1
LFCSP/LFCSP_SS     CP/CS     5 × 5 × 0.75     All counts     1500     5000     Not offered     12     8     C2       LFCSP     CP     5 × 5 × 0.85     All counts     1500     5000     Not offered     12     8     C2	LFCSP	CP	$4 \times 5 \times 0.95$	All counts	1500	5000	Not offered	12	8	C1
LFCSP CP 5 × 5 × 0.85 All counts 1500 5000 Not offered 12 8 C2	LFCSP/LFCSP_SS	CP/CS	5 × 5 × 0.75	All counts	1500	5000	Not offered	12	8	C2
	LFCSP	CP	$5 \times 5 \times 0.85$	All counts	1500	5000	Not offered	12	8	C2
LFCSP CP 5 × 5 × 0.90 All counts 1500 5000 Not offered 12 8 C2	LFCSP	СР	$5 \times 5 \times 0.90$	All counts	1500	5000	Not offered	12	8	C2
LFCSP CP 5 × 5 × 0.95 All counts 1500 5000 Not offered 12 8 C2	LFCSP	CP	$5 \times 5 \times 0.95$	All counts	1500	5000	Not offered	12	8	C2
LFCSP CP 5 × 5 × 1.45 All counts 1000 4000 Not offered 12 8 C2	LFCSP	СР	5 × 5 × 1.45	All counts	1000	4000	Not offered	12	8	C2
LFCSP CP 5 × 5 × 1.8 All counts 1000 4000 Not offered 12 8 C2	LFCSP	CP	5 × 5 × 1.8	All counts	1000	4000	Not offered	12	8	C2

#### Table 1. Standard Package Tape and Reel (Continued) (See Page 7 for Reel Definitions)

Device Package Type Packag		Body Size	Number		Reel Quantity			Tape Pitch	Pin 1
Device Fackage Type	Designator	(mm)	of Leads	7" Reel	13" Reel (4" Hub)	13" Reel (6" Hub)	(mm)	(mm)	Orientation
LFCSP	CP	5 ×4 × 0.75	All counts	1500	5000	Not offered	12	8	C2
LFCSP	СР	5  imes 4  imes 0.95	All counts	1500	5000	Not offered	12	8	C2
LFCSP	СР	5  imes 4  imes 1.45	24	1000	5000	Not offered	12	8	C2
LFCSP	СР	$6 \times 6 \times 0.75$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$6 \times 6 \times 0.85$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$6 \times 6 \times 0.95$	All counts	750	2500	Not offered	16	12	C2
LFCSP/LFCSP_SS	CP/CS	$7 \times 7 \times 0.75$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$7 \times 7 \times 0.85$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$7 \times 7 \times 0.95$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$8 \times 7 \times 0.75$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$8 \times 8 \times 0.75$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$8 \times 8 \times 0.85$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$9\times9\times0.75$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$9 \times 9 \times 0.85$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	$9\times9\times0.95$	All counts	750	2500	Not offered	16	12	C2
LFCSP	СР	10  imes 10  imes 0.85	All counts	400	2000	Not offered	24	16	C2
LFCSP	СР	$12 \times 12 \times 0.80$	All counts	400	2000	Not offered	24	16	C2
LFCSP	СР	$12\times12\times0.85$	All counts	400	2000	Not offered	24	16	C2

<sup>1</sup>For SOT-23 packages with greater than three leads, use the RJ designator. <sup>2</sup>Advantek part number Q14X14-HHX52.0P2 is the only approved carrier tape for this package. When boxing this reel, dunnage (crumpled kraft paper) shall be used between the reel. <sup>3</sup>For bumped die or WLCSP packages, see Table 2. Orientation for these devices is as per EIA-783 (bumps facing bottom of carrier cavity; Pin 1 toward sprocket holes).

#### Table 2. Hittite Standard Package Tape and Reel (See Page 7 for Reel Definitions)

Dovico Packago Tupo	Package	Body Size	Number		Reel Quantity	Tape Width	Tape Pitch	Pin 1	
Device rackage type	Designator	(mm)	of Leads	7" Reel	13" Reel (4" Hub)	13" Reel (6" Hub)	(mm)	(mm)	Orientation
LGA	CC	$3 \times 3$	All counts	500	Not offered	Not offered	12	8	C1
LGA	CC	4 × 4	All counts	500	Not offered	Not offered	12	8	C1
LFCSP	СР	$2\times2\times0.90$	All counts	500	Not offered	Not offered	8	4	C1
LFCSP	СР	$3 \times 3 \times 0.90$	All counts	500	Not offered	Not offered	12	4	C1
LFCSP	CP	$4\times 4\times 0.90$	All counts	500	Not offered	Not offered	12	8	C1
LFCSP	СР	$5 \times 5 \times 0.90$	All counts	500	Not offered	Not offered	12	8	C1
LFCSP	CP	$5 \times 5 \times 1.35$	All counts	500	Not offered	Not offered	12	8	C1
LFCSP	СР	$6 \times 6 \times 0.75$	All counts	500	Not offered	Not offered	16	12	C1
LFCSP	CP	$6 \times 6 \times 0.85$	All counts	500	Not offered	Not offered	16	12	C1
LFCSP	CP	$6 \times 6 \times 0.90$	All counts	500	Not offered	Not offered	16	12	C1
LFCSP	CP	$7 \times 7 \times 0.85$	All counts	500	Not offered	Not offered	16	12	C1
LFCSP	CP	$10 \times 10 \times 0.90$	All counts	500	Not offered	Not offered	16	12	C1
LCC_HS	EP	6 × 6 × 1.317	All counts	500	Not offered	Not offered	16	12	C1
LCC_HS	EP	$7 \times 7 \times 1.317$	All counts	500	Not offered	Not offered	16	12	C1
LCC	E	3 × 3	All counts	100/500	Not offered	Not offered	12	4	C1
LCC	E	4 × 4	All counts	100/500	Not offered	Not offered	12	8	C1
LCC	Е	5 × 5	All counts	100/500	Not offered	Not offered	12	8	C1
QSOP	RQ	N/A	All counts	500	Not offered	Not offered	12	8	C1
MSOP	RM	N/A	All counts	500	Not offered	Not offered	12	8	C1
S0T-89	RK	N/A	All counts	500	Not offered	Not offered	12	8	C1
S0T-23	RJ	N/A	All counts	500	Not offered	Not offered	12	8	C1

#### Table 3. WLCSP/Bumped Die Sales Tape and Reel

Douice Deckage Tupe	Package	Body Size	Reel Q	uantity	Tape Width	Tape Pitch	Pin 1	
Device Package Type Designator	(mm)	7" Reel	13" Reel (4" Hub)	(mm)	(mm)	Orientation		
WI COD	CP	NA	2000 (max)	10.000 (max)	8	4		
WLUSP	CB	NA	3000 (IIIax)	10,000 (IIIax)	12	8	01 00 00 07 04	
Dumped ship	(D	NA	2000 (max)	10,000 (max)	8	4	61, 62, 63, 01 64	
Bumped chip CD	CD	NA	3000 (max)	10,000 (max)	12	8		

#### **Table 4. Small Quantity Reel**

Device Package Type	Package Designator	Body Size (mm)	Number of Leads	Reel Quantity 7" Reel	Tape Width (mm)	Tape Pitch (mm)	Pin 1 Orientation
LFCSP	СР	2 × 2 × 0.55	All counts	250	8	4	C2
LFCSP	СР	2 × 3	All counts	500	12	4	C2
LFCSP	СР	3 × 2	All counts	250	12	4	C1
LFCSP	СР	3 × 3	All counts	250	12	8	C2
LFCSP	СР	4 × 4	All counts	250	12	8	C2
LFCSP	СР	4 × 4	16	500	12	8	C2
LFCSP	СР	$5 \times 5$	All counts	250	12	8	C2
MSOP/MINI_SO	RM	N/A	8, 10	250	12	8	C1
QSOP	RQ	150_MIL	16	500	12	8	C1
SC70	KS	N/A	3, 4, 5, 6	250	8	4	C4
S0T-23-3	RT	N/A	3	250	8	4	C4
S0T-231	RJ/RT	N/A	5, 6, 8	250	8	4	C4
S0T-143	RA	N/A	4	250	8	4	C4
TSOT	UJ	N/A	5, 6, 8	250	8	4	C4
TSSOP_4.4	RU/RE	N/A	16, 20, 24	500	16	8	C1
WLCSP <sup>2</sup>	CB	N/A	All counts	250	See Table 2	See Table 2	See Table 2

1For SOT-23 packages prior to Rev. W, all products and lead counts use RT. For SOT-23 packages from Rev. W, all new products with greater than three leads use the RJ designator.

<sup>2</sup>For actual WLCSP products available in small quantity reels, please cross reference with "7" reel (small quantity)" column of Table 2.

#### Glossary

#### REEL7 (aka R7 or RL7)

This is a 7" reel. Quantities vary based on package size.

#### Reel (aka RL or R)

This is a 13" reel. Quantities vary based on package size.

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