

Tube and Tray Packing

TUBE PACKING STANDARDS

Tubes are made from clear, rigid polyvinyl chloride (PVC) or clear polycarbonate (PC). Tubes are dipped in antistatic solution to increase surface resistivity. Tube quantities are specified below.

Table I. Tube Quantities by Package Type

Device Package Type	Number of Leads	Quantity per Tube	Quantity per Tube Box	
			Number of Tubes	Number of Units
300 mil PDIP	8	50	20	1000
	14	25	20	500
	16	25	20	500
	18	20	20	400
	20	18	20	360
	24	15	20	300
	28	13	20	260
600 mil PDIP	24	15	12	180
	28	13	12	156
	40	9	12	108
	44	7	12	84
300 mil Cerdip	8	48	20	960
	14	25	20	500
	16	25	20	500
	18	20	20	400
	20	20	20	400
	24	15	20	300
	28	12	20	240
400 mil Cerdip	22	17	20	340
600 mil Cerdip	24	15	12	180
	28	12	12	144
	40	9	12	108
300 mil Sidebrazed Ceramic	8	48	20	960
	14	25	20	500
	16	23	20	460
	18	20	20	400
	20	18	20	360
	24	15	20	300
400 mil Sidebrazed Ceramic	22	18	20	360
600 mil Sidebrazed Ceramic	24	15	12	180
	28	13	12	156
	40	9	12	108
	48	7	12	84

Table I. Tube Quantities by Package Type (continued)

Device Package Type	Number of Leads	Quantity per Tube	Quantity per Tube Box	
			Number of Tubes	Number of Units
SOIC (Narrow)	8	98	100	9800
	14	56	100	5600
	16	48	100	4800
QSOP	16	98	100	9800
	20	56	100	5600
	24	56	100	5600
SOIC (Wide)	16	47	50	2350
	18	41	50	2050
	20	37	50	1850
	24	31	50	1550
	28	27	50	1350
SSOP	16	77	75	5775
	20	66	75	4950
	24	59	75	4425
	28	47	75	3525
PSOP (300 mil body width)	20	37	20	740
	28	27	20	540
PSOP (11 mm body width)	All	29	15	435
PLCC	20	49	40	1960
	28	39	40	1560
	32	32	40	1280
	44	27	20	540
	68	19	15	285
	84	15	15	225
LCC	16	60	70	4200
	20	54	70	3780
	28	42	60	2520
	44	29	40	1160
	68	20	30	600
JLCC	28	39	32	1248
	44	28	32	896
	68	19	15	285
MSOP	8, 10	50	200	10000
TSSOP (4.4 mm body width)	8	96	100	9600
	14	96	100	9600
	16	96	100	9600
	20	75	100	7500
	24	62	100	6200
	28	50	100	5000
	38	50	100	5000

Table I. Tube Quantities by Package Type (continued)

Device Package Type	Number of Leads	Quantity per Tube	Quantity per Tube Box	
			Number of Tubes	Number of Units
TSSOP (6.1 mm body width)	28	50	100	5000
	48	39	100	3900
SIP	15	24	7	168
LFCSP (4 × 4)	All	75	250	18750
Header in Carrier	All	18	18	324

TRAY PACKING STANDARDS

Devices are packed in trays as shown in Figure 1, so that Pin 1 is closest to the chamfered corner of the tray. Position 1 is the pocket closest to the chamfered corner. Partially full trays are filled, starting at Position 1, with parts placed sequentially left to right, top to bottom, as shown in Figure 1.

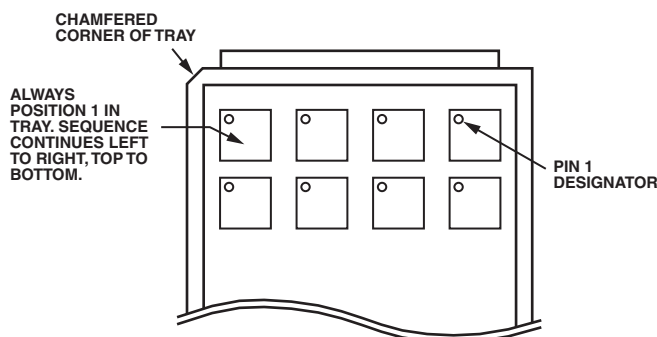


Figure 1. Packing Order for Trays

Tray quantities are specified below.

Table II. Tray Quantities by Package Type

Device Package Type	Body Size (mm)	Number of Leads	Quantity per Tray	Quantity per Tray Box	
				Number of Trays	Number of Units
LPCC	5 × 5	16, 32	640	5	3200
CSP BGA	5 × 5	All	640	5	3200
	7 × 7	All	416	5	2080
	8 × 8	All	348	5	1740
	9 × 9	All	260	5	1300
	10 × 10	All	184	5	920
	12 × 12	All	189	5	945
	13 × 13	All	160	5	800
	15 × 15	All	126	5	630
BGA	17 × 17	All	90	5	450
	13 × 13	144	160	5	800
	14 × 22	119	84	5	420
	17 × 17	225	90	5	450
	19 × 19	225, 324	84	5	420
	23 × 23	225	60	5	300
	27 × 27	400	40	5	200
	31 × 31	304	27	5	135
35 × 35	All	24	5	120	

Table II. Tray Quantities by Package Type (continued)

Device Package Type	Body Size (mm)	Number of Leads	Quantity per Tray	Quantity per Tray Box	
				Number of Trays	Number of Units
BGA (thermally enhanced)	27 × 27	256	40	5	200
	31 × 31	304	27	5	135
	35 × 35	All	24	5	120
	40 × 40	432	21	5	105
TQFP	7 × 7 × 1.0	48	250	5	1250
	10 × 10 × 1.0	All	160	5	800
	12 × 12 × 1.0	All	119	5	595
	14 × 14 × 1.0	100	90	5	450
LQFP	7 × 7 × 1.4	48, 64	250	5	1250
	10 × 10 × 1.4	44, 52, 64	160	5	800
	12 × 12 × 1.4	80	119	5	595
	14 × 14 × 1.4	All	90	5	450
	14 × 20 × 1.4	128	72	5	360
	20 × 20 × 1.4	All	60	5	300
	24 × 24 × 1.4	176	40	5	200
LQFP (thermally enhanced)	7 × 7 × 1.4	All	250	2	500
	10 × 10 × 1.4	All	160	2	320
	14 × 14 × 1.4	All	90	2	180
	20 × 20 × 1.4	144	60	2	120
	24 × 24 × 1.4	176	40	2	80
MQFP	10 × 10 × 2.0	44, 52	96	5	480
	14 × 14 × 2.0	All	84	5	420
	14 × 14 × 2.7	All	84	5	420
	14 × 14 × 2.0	100, 128	66	5	330
	14 × 20 × 2.7	All	66	5	330
	28 × 28 × 3.5	All	24	5	120
	32 × 32 × 3.4	240	24	2	48
	40 × 40	304	12	5	60
	MQFP (thermally enhanced)	28 × 28 × 3.5	160	24	2
32 × 32 × 3.5		240	24	2	48
CQFP	32 × 32	240	10	2	20
PQFP (bumpered)	19 × 19 × 3.5	100	55	4	220
LFCSP	3 × 3	All	714	5	3570
	4 × 4	All	490	5	2450
	5 × 5	All	490	5	2450
	6 × 6	All	490	5	2450
	7 × 7	All	260	5	1300
	8 × 8	All	260	5	1300
	9 × 9	All	260	5	1300
	10 × 10	All	168	5	840
LGA	3.5 × 4.5	24	490	5	2450
	6 × 8	26	128	5	640
	10 × 10	31	184	5	920