

## Plastic IC Package Information

### Tape & Reel

Tape and Reel packing system protects Diodes' products from mechanical and electrical damage and is designed for automatic pick-and-place equipment. Diodes' tape and reel specifications are in compliance with Electronics Industries Association standards for embossed carrier taping of surface mount components for Automatic Handling EIA-481, current version. It consists of a Pocket Carrier Tape sealed with a protective Cover Tape that holds devices in place.

The conductive Carrier Tape and antistatic coated Transparent Cover Tape and Reel provide ESD protection. Products are supplied either on 7-inch or 13-inch diameter reels.

Devices are loaded with leads down into the carrier pockets. For shipping, tape is wound onto a plastic reel for labeling and packing. Barcode labels are placed on each reel. Transparent Cover Tape allows device verification and brand inspection without having to remove or handle components.

PKG. CODE	PKG. TYPE	REEL DIAMETER (inch)	TAPE WIDTH (mm)	TAPE PITCH (mm)	PIN 1 LOCATION	TAPE TRAILER LENGTH (Min # Pockets)	QTY PER REEL	TAPE LEADER LENGTH (Min # Pockets)	QTY PER TUBE	QTY PER TRAY
A48	TSSOP-48	13"	24	12	Top Left Corner	26 (12")	1500	43 (20")	39	N/A
A56	TSSOP-56	13"	24	12	Top Left Corner	26 (12")	1500	43 (20")	35	N/A
A64	TSSOP-64	13"	24	12	Top Left Corner	26 (12")	1500	43 (20")	28	N/A
B40	BQSOP-40	13"	16	8	Top Left Corner	39 (12")	3000	64 (20")	49	N/A
B48	BQSOP-48	13"	16	8	Top Left Corner	39 (12")	3000	64 (20")	49	N/A
B80	BQSOP-80	13"	32	12	Top Left Corner	26 (12")	2000	43 (20")	24	N/A
C3	SC70-3	7"	8	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
C4	SC70-4	7"	8	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
C5	SC70-5	7"	8	4	Bottom Left Corner	77 (12")	3000	127 (20")	N/A(canister)	N/A(canister)
C6	SC70-6	7"	8	4	Bottom Left Corner	77 (12")	3000	127 (20")	N/A(canister)	N/A(canister)
FA100	TQFP-100	13"	24	20	Top Right Corner	13 (12")	1000	22 (20")	N/A	90
FA32	TQFP-32	13"	16	12	Top Right Corner	26 (12")	2000	43 (20")	N/A	250
FAE100	EP-TQFP-100	13"	24	20	Top Right Corner	13 (12")	1000	22 (20")	N/A	90
FAE32	EP-TQFP-32	13"	16	12	Top Right Corner	26 (12")	2000	43 (20")	N/A	250
FB44	LQFP-44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	160
FB48	LQFP-48	13"	16	12	Top Right Corner	26 (12")	2000	43 (20")	N/A	250
FB64	LQFP64	13"	16	12	Top Right Corner	26 (12")	2000	43 (20")	N/A	250
FBE48	EP-LQFP-48	13"	16	12	Top Right Corner	26 (12")	2000	43 (20")	N/A	250
FC64	LQFP-64	13"	24	16	Top Right Corner	20 (12")	1000	32 (20")	N/A	160
FC80	LQFP-80	13"	24	16	Top Right Corner	20 (12")	1000	32 (20")	N/A	160
FCA144	FC LFBGA	13"	24	12	Top Left Corner	15 (6.3")	3000	35 (15.7")	N/A	N/A
FCB105	FC-VFBGA6060-105	13"	16	12	Top Left Corner	35 / (15.7")	3500	15 / (6.3")	N/A	N/A
FCE80	LQFP-80	13"	24	16	Top Right Corner	20 (12")	1000	32 (20")	N/A	160
FD128	LQFP-128	13"	24	20	Top Right Corner	16 (12")	1000	26 (20")	N/A	90
FDE128	EP-LQFP-128	13"	24	20	Top Right Corner	16 (12")	1000	26 (20")	N/A	90
FF80	LQFP-80	13"	24	24	Top Left Corner**	13 (12")	1000	22 (20")	N/A	119
FH144	LQFP-144	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60
FHE176	EP-TQFP-176	13"	44	28	Top Right Corner	7 (7")	500	11 (16")	N/A	60
FIA32	W-LGA4528-32	7"	12	8	Top Left Corner	51 / (6.3")	1500	21 / (15.75")	N/A	N/A
GA10	CSP-10	7"	8	4	Top Right Corner	77 (12")	3000	127 (20")	N/A	N/A
GA12	CSP-12	7"	8	4	Top Left Corner	77 (12")	3000	127 (20")	N/A	N/A
GA8	CSP-8	7"	8	4	Top Left Corner	77 (12")	3000	127 (20")	N/A	N/A
GAA12	CSP-12	7"	8	4	Top Right corner	77 (12")	3000	127 (20")	N/A	N/A
GB08	CSP-8	7"	8	4	Top Left Corner	77 (12")	3000	127 (20")	N/A	N/A

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PKG. CODE	PKG. TYPE	REEL DIAMETER (inch)	TAPE WIDTH (mm)	TAPE PITCH (mm)	PIN 1 LOCATION	TAPE TRAILER LENGTH (Min # Pockets)	QTY PER REEL	TAPE LEADER LENGTH (Min # Pockets)	QTY PER TUBE	QTY PER TRAY
GBA8	CSP-8	7"	8	4	Top Left Corner	77 (12")	3000	127 (20")	N/A	N/A
GE15	CSP-15	7"	8	4	Top Left Corner	77 (12")	3000	127 (20")	N/A	N/A
GE36	CSP-36	7"	8	4	Top Left corner	77 (12")	3000	127 (20")	N/A	N/A
GEA20	CSP-20	7"	8	4	Top Left corner	77 (12")	3000	127 (20")	N/A	N/A
GEA36	CSP-36	7"	8	4	Top Left corner	77 (12")	3000	127 (20")	N/A	N/A
GF20	CSP-20	7"	8	4	Top Left corner	77 (12")	3000	127 (20")	N/A	N/A
GH12	CSP-12	7"	8	4	Top Left corner	77 (12")	3000	127 (20")	N/A	N/A
GH36	CSP-36	7"	8	4	Top Left Corner	77 (12")	3000	127 (20")	N/A	N/A
H20	SSOP-20	13"	16	12	Top Left Corner	26 (12")	2000	43 (20")	66	N/A
H24	SSOP-24	13"	16	12	Top Left Corner	14 (6.3")	2000	34 (15.7")	60	N/A
H28	SSOP-28	13"	24	12	Top Left Corner	26 (12")	2000	43 (20")	47	N/A
HFC196	HFCBGA	13"	24	20	Top Left Corner	9 (6.3")	800	21 (15.7")	N/A	119
HFC324	HFCBGA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	84
HFC676	HFCBGA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40
HK8	X1DFN-8	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
HSB324	HSBGA-324	13"	32	24	Top Left Corner	13 (12")	500	22 (20")	N/A	84
J32	PLCC-32	13"	24	16	Sprocket Hole Side	20 (12")	750	32 (20")	32	N/A
J44	PLCC-44	13"	32	24	Sprocket Hole Side	13 (12")	500	22 (20")	28	N/A
L08	TSSOP-8	13"	12	8	Top Left Corner	39 (12")	2500	64 (20")	100	N/A
L14	TSSOP-14	13"	12	8	Top Left Corner	39 (12")	2500	64 (20")	96	N/A
L16	TSSOP-16	13"	12	8	Top Left Corner	39 (12")	2500	64 (20")	96	N/A
L20	TSSOP-20	13"	16	8	Top Left Corner	39 (12")	3000	64 (20")	74	N/A
L24	TSSOP-24	13"	16	8	Top Left Corner	39 (12")	3000	64 (20")	62	N/A
L28	TSSOP-28	13"	16	8	Top Left Corner	39 (12")	3000	64 (20")	50	N/A
MA128	QFP-128	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	66
MA160	MQFP-160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24
MA208	FQFP-208	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24
N4	TO94-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A (Bag)	N/A (Bag)
NA272	PBGA-272	13"	44	32	Top Left Corner	10 (12")	360	16 (20")	N/A	40
NA304	PBGA-304	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27
NB160	LBGA-160	13"	24	16	Top Left Corner	20 (12")	1000	32 (20")	N/A	189
NB3	TO92-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A (Bag)	N/A (Bag)
NB84	LBGA-84	13"	16	12	Top Left Corner	39 (12")	2000	64 (20")	N/A	260
NC48	TFBGA-48	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	540
NC64	TFBGA-64	13"	16	12	Top Left Corner	26 (12")	2000	43 (20")	N/A	416
ND256	PBGA-256	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	90
NE48	TFBGA-48	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
NE50	TFBGA-50	13"	12	8	Top Left Corner	47 (15")	2500	64 (20")	N/A	490
NF52	VFBGA-52	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	364
NFA42	VFBGA-42	13"	12	8	Top Left Corner	21 (6.3")	6000	51 (15.7")	N/A	N/A
NH304	LBGA-304	13"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27
NU100	LBGA-100	13"	24	16	Top Left Corner	20 (12")	1000	32 (20")	N/A	176
NU160	LBGA-160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	126
NU196	LBGA-196	13"	24	20	Top Left Corner	16 (12")	1000	26 (20")	N/A	126
NK115	TFBGA-115	13"	16	12	Top Left Corner	25 (11.8")	2000	42 (20")	N/A	260
NM48	LBGA-48	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	364
NN150	TFBGA-150	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
P14	DIP14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	N/A
P16	DIP16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	N/A
P18	DIP18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20	N/A

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P20	DIP20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18	N/A
P22	DIP22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18	N/A
P24	DIP24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16	N/A
P8	DIP8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A
Q16	QSOP-16	13"	12	8	Top Left Corner	39 (12")	2500	64 (20")	97	N/A
Q20	QSOP-20	13"	16	8	Top Left Corner	39 (12")	2500	64 (20")	55	N/A
Q24	QSOP-24	13"	16	8	Top Left Corner	39 (12")	3000	64 (20")	55	N/A
Q28	QSOP-28	13"	16	8	Top Left Corner	39 (12")	3000	64 (20")	48	N/A
S16	SOIC-16	13"	16	12	Top Left Corner	26 (12")	1000	43 (20")	46	N/A
S20	SOIC-20	13"	24	12	Top Left Corner	26 (12")	1000	43 (20")	38	N/A
S24	SOIC-24	13"	24	12	Top Left Corner	26 (12")	1000	43 (20")	31	N/A
S28	SOIC-28	13"	24	12	Top Left Corner	26 (12")	1000	43 (20")	27	N/A
SS8	SSOP8	7"	12	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
T03	SOT23-3	7"	8	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
T05	SOT23-5	7"	8	4	Bottom Left Corner	77 (12")	3000	127 (20")	N/A(canister)	N/A(canister)
T06	SOT23-6	7"	8	4	Bottom Left Corner	77 (12")	3000	127 (20")	N/A(canister)	N/A(canister)
TA03	SOT23-3	7"	8	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
TA05	SOT23-5	7"	8	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
TA06	SOT23-6	7"	8	4	Top Right Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
TB4	SOT143-4	7"	8	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
TC3	SOT223-3	13"	12	8	Bottom Left Corner	20 (6.3")	2500	50 (15.7")	N/A	N/A
TD3	SOT89-3	7"	12	8	Bottom Right Corner	20 (6.3")	1000	50 (15.7")	N/A	N/A
TD5	SOT89-5	7"	12	8	Bottom Right Corner	20 (6.3")	1000	50 (15.7")	N/A	N/A
TT6	TSOT23-6	7"	8	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
U08	MSOP-8	13"	12	8	Top Left Corner	39 (12")	2500	64 (20")	N/A	N/A
U10	MSOP-10	13"	12	8	Top Left Corner	20 (6.3")	2500	50 (15.7")	100	N/A
UA10	USOP-10	13"	12	8	Top Left Corner	20 (6.3")	4000	50 (15.7")	N/A	N/A
UA8	USOP-8	13"	12	8	Top Left corner	20 (6.3")	4000	50 (15.7")	N/A	N/A
UE8	EP-MSOP-8	13"	12	8	Top Left Corner	20 (6.3")	2500	50 (15.7")	100	N/A
V8	VSSOP8	7"	8	4	Bottom Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
V48	SSOP-48	13"	32	16	Top Left Corner	20 (12")	1000	32 (20")	30	N/A
W08	SOIC-8	13"	12	8	Top Left Corner	39 (12")	2500	64 (20")	97	N/A
W14	SOIC-14	13"	16	8	Top Left Corner	39 (12")	2500	64 (20")	55	N/A
W16	SOIC-16	13"	16	8	Top Left Corner	39 (12")	2500	64 (20")	48	N/A
WA8	EP-SOIC-8	13"	12	8	Top Left Corner	20 (6.3")	3000	50 (15.7")	100	N/A
XA08	TLLGA-8	7"	8	4	Top Right Corner	77 (12")	3500	127 (20")	N/A	N/A
XA10	TLLGA-10	7"	8	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
XB24	X1LGA	7"	12	4	Top Left Corner	41 (6.3")	5000	101 (15.7")	N/A	N/A
XDB6	X2DFN-6	7"	8	2	Bottom Left Corner	80 (6.3")	5000	200 (15.7")	N/A	N/A
XEA10	X1QFN-10	7"	8	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
XEA24	X1QFN-24	7"	12	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
XEA32	X1QFN-32	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	N/A
XEB24	X1QFN-24	7"	8	4	Top Right Corner	77 (12")	3500	127 (20")	N/A	N/A
XEC8	X1DFN-8	7"	8	4	Top Right Corner	77 (12")	3500	127 (20")	N/A	N/A
XT8	UQFN-8	7"	8	4	Top Right Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
XUA12	X2QFN-12	7"	8	4	Top Left Corner**	77 (12")	3500	127 (20")	N/A	N/A
XUA18	X2QFN-18	7"	8	4	Top Right Corner	77 (12")	3500	127 (20")	N/A	N/A
XUA32	X2QFN-32	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	N/A
XUB18	X2QFN-18	7"	8	4	Top Right Corner	77 (12")	3500	127 (20")	N/A	N/A
XUC10	X2QFN-10	7"	8	4	Top Left Corner	40 (6.3")	3500	100 (15.7")	N/A	N/A

## Plastic IC Package Information

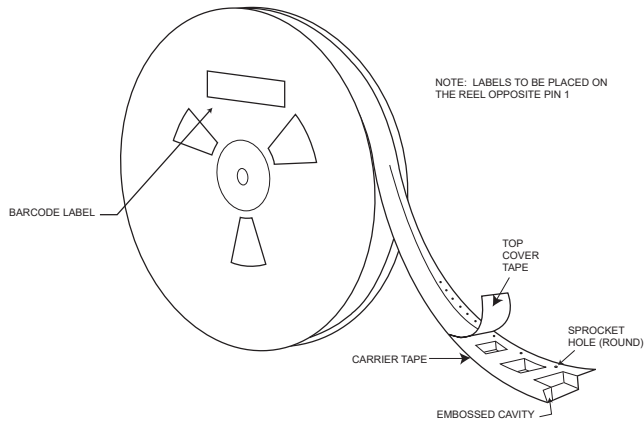
PKG. CODE	PKG. TYPE	REEL DIAMETER (inch)	TAPE WIDTH (mm)	TAPE PITCH (mm)	PIN 1 LOCATION	TAPE TRAILER LENGTH (Min # Pockets)	QTY PER REEL	TAPE LEADER LENGTH (Min # Pockets)	QTY PER TUBE	QTY PER TRAY
XV4	UDFN-4	7"	8	4	Top Right Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
XV8	UDFN-8	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
XW20	UQFN-20	13"	12	8	Top Left Corner	20 (6.3")	5000	50 (15.7")	N/A	N/A
XY4	UDFN-4	7"	8	4	Top Right Corner	40 (6.3")	5000	100 (15.7")	N/A	N/A
XZ4	UDFN-4	7"	8	4	Top Right Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZA06	TDFN-6	7"	8	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
ZA08	TDFN-8	7"	8	4	Top Right Corner	77 (12")	3500	127 (20")	N/A	N/A
ZA12	TDFN-12	7"	8	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
ZAB8	TDFN-8	13"	12	8	Top Right Corner	20 (6.3")	5000	50 (15.7")	N/A	N/A
ZB14	TQFN-14	13"	12	8	Top Right Corner	20 (6.3")	5000	50 (15.7")	N/A	N/A
ZB20	TQFN-20	7"	12	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
ZB48	TQFN-48	13"	16	12	Top Left Corner**	26 (12")	3000	43 (20")	N/A	260
ZB56	TQFN-56	13"	16	12	Top Right Corner	26 (12")	2000	43 (20")	46	348 / 260
ZBA20	VQFN-20	13"	12	4	Top Left Corner	40 (6.3")	2500	100 (15.7")	N/A	N/A
ZBB20	TQFN-20	7"	12	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
ZBB56	TQFN-56	13"	16	12	Top Right Corner	26 (12")	2000	43 (20")	N/A	348
ZBS20	TQFN-20	7"	12	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
ZC6	TDFN-6	7"	8	4	Top Right Corner	40 (6.3")	3500	100 (15.7")	N/A	N/A
ZC8	TDFN-8	7"	8	4	Top Right Corner	40 (6.3")	3500	100 (15.7")	N/A	N/A
ZD20	TQFN-20	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	490
ZD24	TQFN-24	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	490
ZD24 (-13R)	TQFN-24	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZD28	TQFN-28	13"	12	8	Top Right Corner	20 (6.3")	3500	50 (15.7")	N/A	N/A
ZD40	TQFN-40	13"	16	12	Top Right Corner	26 (12")	3000	43 (20")	N/A	490
ZD48	TQFN-48	13"	16	12	Top Left Corner**	26 (12")	3000	43 (20")	N/A	260
ZD64	TQFN-64	13"	16	12	Top Right Corner	26 (12")	3000	43 (20")	N/A	260
ZD72	TQFN-72	13"	24	16	Top Left Corner**	20/ (12")	2500	32/(20")	N/A	N/A
ZDA24	TQFN-24	13"	12	8	Top Left Corner	20 (6.3")	3000	50 (15.7")	N/A	N/A
ZDB14	TQFN-10	13"	12	8	Top Left Corner	20 (6.3")	3000	50 (15.7")	N/A	N/A
ZDQ24	TQFN-24	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	490
ZDW24	TQFN-24	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	490
ZE10	TDFN-10	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	N/A
ZE12	TDFN-12	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	N/A
ZE8	TDFN-8	7"	8	4	Top Left Corner	77 (12")	3000	127 (20")	N/A	N/A
ZF36	TQFN-36	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZF54	TQFN-54	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	288
ZF56	TQFN-56	13"	24	12	Top Left Corner	26 (12")	2000	43 (20")	N/A	294
ZG6	TDFN-6	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZH16	TQFN-16	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	N/A
ZH20	TQFN-20	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	96	N/A
ZH28	TQFN-28	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZH32	TQFN-32	13"	12	8	Top Right Corner	47 (15")	2500	64 (20")	73	490
ZH42	TQFN-42	13"	24	8	Top Left Corner	39 (12")	3500	64 (20")	41	400
ZHD16	UQFN-16	13"	12	8	Top Right Corner	20 (6.3")	3500	50 (15.7")	N/A	N/A
ZI14	TDFN-14	7"	8	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
ZI16	TDFN-16	7"	12	4	Top Left Corner	77 (12")	3500	127 (20")	TBD	TBD
ZK12	TQFN-12	7"	8	4	Top Left Corner	77 (12")	3500	127 (20")	TBD	TBD
ZL10	TQFN-10	7"	8	4	Top Left Corner	77 (12")	3500	127 (20")	N/A(canister)	N/A(canister)
ZL16	TQFN-16	7"	8	4	Top Left Corner**	77 (12")	3500	127 (20")	N/A(canister)	N/A(canister)
ZL24	TQFN-24	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	N/A

## Plastic IC Package Information

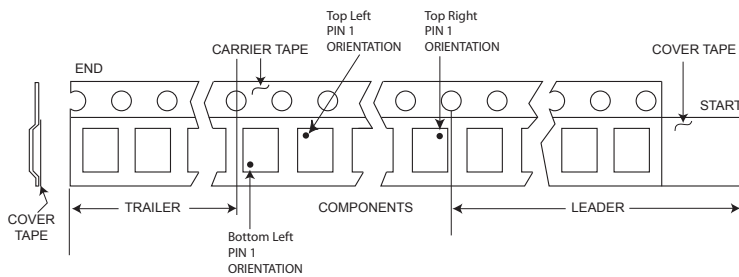
PKG. CODE	PKG. TYPE	REEL DIAMETER (inch)	TAPE WIDTH (mm)	TAPE PITCH (mm)	PIN 1 LOCATION	TAPE TRAILER LENGTH (Min # Pockets)	QTY PER REEL	TAPE LEADER LENGTH (Min # Pockets)	QTY PER TUBE	QTY PER TRAY
ZL30	TQFN-30	7"	12	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
ZL32	TQFN-32	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	60	490
ZL40	TQFN-40	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZL48	TQFN-48	13"	16	12	Top Right Corner	26 (12")	3000	43 (20")	N/A	490
ZL52	TQFN-52	13"	24	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	400
ZL56	TQFN-56	13"	16	12	Top Right Corner	26 (12")	3000	43 (20")	N/A	260
ZL60	TQFN-60	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	364
ZL64	TQFN-64	13"	16	12	Top Left Corner**	26 (12")	2000	43 (20")	N/A	260
ZL72	TQFN-72	13"	24	12	Top Left Corner	26 (12")	2000	43 (20")	33	294
ZLA40	TQFN-40	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	490
ZLB40	TQFN-40	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	740
ZLC40	TQFN-40	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZLD40	TQFN-40	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZLS32	TQFN-32	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZLW46	TQFN-46	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	N/A
ZLW48	V-QFN6060-48 (SWP)	13"	16	12	Top Right Corner	26 (12")	3000	43 (20")	N/A	490
ZM10	UQFN-10	7"	8	4	Top Left Corner	77 (12")	3000	127 (20")	N/A	N/A
ZM12	UQFN-12	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZN20	TQFN-20	13"	12	8	Top Right Corner	20 (6.3")	5000	50 (15.7")	160	N/A
ZNA20	TQFN-20	13"	12	8	Top Right Corner	39 (12")	3500	64 (20")	N/A	N/A
ZP132	TQFN-132	13"	24	12	Top Right Corner	26 (12")	2000	43 (20")	N/A	168
ZP80	TQFN-80	13"	24	12	Top Left Corner	26 (12")	2000	43 (20")	33	294
ZR24	TQFN-24	7"	8	4	Top Left Corner**	77 (12")	3500	127 (20")	N/A	N/A
ZR46	W-QFN3063-46	13"	16	8	Top Left Corner	39 (12")	3500	64 (20")	NA	NA
ZR62	WQFN-62	13"	24	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	N/A
ZSA8	DFN-8	13"	12	8	Top Right Corner	20 (6.3")	5000	50 (15.7")	N/A	N/A
ZT12	UQFN-12	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZT16	UQFN-16	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZTA12	U-QFN2020-12	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZTA16	UQFN-16	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZTF32	U-QFN2048-32	7"	12	4	Top Left Corner	77 (12")	3500	127 (20")	N/A	N/A
ZTF34	UQFN-34	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZTF40	UQFN-40	13"	12	8	Top Left Corner	39 (12")	3500	64 (20")	N/A	490
ZU6	UDFN-6	7"	8	4	Top Right Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZUA8	UQFN	7"	8	4	Top Right Corner	77 (12")	3500	127 (20")	N/A	N/A
ZUA10	UQFN-10	7"	8	4	Top Left Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZUA20	UQFN-20	13"	12	8	Top Left Corner	20 (6.3")	3000	50 (15.7")	N/A	N/A
ZUA32	UQFN-32	13"	12	8	Top Left Corner	20 (6.3")	3000	50 (15.7")	N/A	N/A
ZUD100	UQFN-100	13"	16	12	Top Right Corner	26 (12")	3000	43 (20")	N/A	N/A
ZV10	UDFN-10	7"	8	4	Top Right Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZW10	UDFN-10	13"	12	8	Top Left Corner	20 (6.3")	3000	50 (15.7")	N/A	N/A
ZW8	UDFN-8	7"	8	4	Top right Corner	40 (6.3")	3000	100 (15.7")	N/A	N/A
ZX136	aQFN-136	13"	16	12	Top Right Corner	26 (12")	3000	43 (20")	N/A	260
ZXA136	aQFN-136	13"	24	16	Top Right Corner	20 (12")	1000	32 (20")	N/A	168
ZXB80	aQFN-80	13"	16	12	Top Right Corner	26/(12")	3000	43/(20")	N/A	N/A
ZXC116	V-QFN70135-116	13"	24	12	Top Left Corner	15 (6.3")	4000	35 (15.7")	N/A	N/A
ZXD100	UQFN-100	13"	16	12	Top Right Corner	26 (12")	3000	43 (20")	N/A	N/A
ZXD100 (-13R)	UQFN-100	13"	16	12	Top Left Corner	26 (12")	3000	43 (20")	N/A	N/A
ZY16	TQFN-16	13"	12	8	Top Right Corner	20 (6.3")	5000	50 (15.7")	N/A	N/A

\*\*NOTE: Pin 1 is located on Top Left Corner (Quadrant 1) instead of Top Right Corner (Quadrant 2) per EIA-481 rev. D.

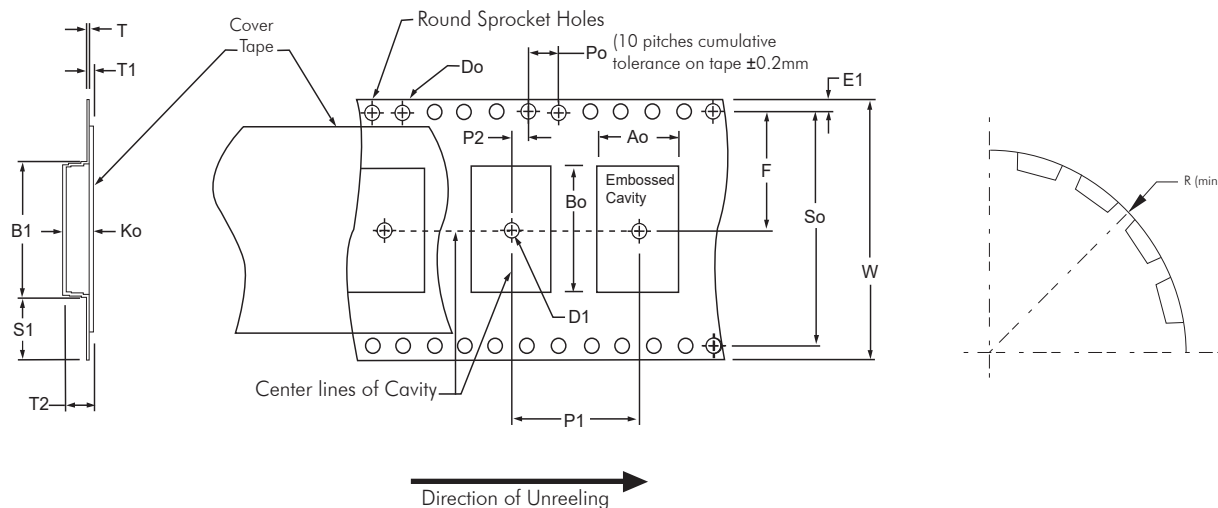
## Tape & Reel Materials and Design



**Figure 1: TAPE & REEL LABEL INFORMATION**



**Figure 2: TAPE LEADER AND TRAILER PIN 1 ORIENTATIONS**



**Figure 3: STANDARD EMBOSSED CARRIER TAPE DIMENSIONS**

### Carrier Tape

The Pocketed Carrier Tape is made of Conductive Polystyrene plus Carbon material (or equivalent). The surface resistivity is  $10^6\text{Ohm/sq.}$  maximum. Pocket tapes are designed so that the component remains in position for automatic handling after cover tape is removed. Each pocket has a hole in the center for automated sensing if the pocket is occupied or not, thus facilitating device removal. Sprocket holes along the edge of the center tape enable direct feeding into automated board assembly equipment. See Figures 3 and 4 for carrier tape dimensions.

### Cover Tape

Cover tape is made of Anti-static Transparent Polyester film. The surface resistivity is  $10^7\text{Ohm/Sq.}$  Minimum to  $10^{11}\text{Ohm sq.}$  maximum. The cover tape is heat-sealed to the edges of the carrier tape to encase the devices in the pockets. The force to peel back the cover tape from the carrier tape shall be a MEAN value of 20 to 80gm (2N to 0.8N).

### Reel

The device loading orientation is in compliance with EIA-481, current version (Figure 2). The loaded carrier tape is wound onto either a 13-inch reel, (Figure 4) or 7-inch reel. The reel is made of Antistatic High-Impact Polystyrene. The surface resistivity  $10^7\text{Ohm/sq.}$  minimum to  $10^{11}\text{Ohm/sq.}$  max.

# Tape & Reel Dimensions

## STANDARD EMBOSSED CARRIER TAPE DIMENSIONS

### Constant Dimensions

Tape Size	D <sub>0</sub>	D <sub>1</sub> (Min)	E <sub>1</sub>	P <sub>0</sub>	P <sub>2</sub>	R (See Note 2)	S <sub>1</sub> (Min)	T (Max)	T <sub>1</sub> (Max)	
8mm	1.5 ±0.1 -0.0	1.0	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	25	0.6	0.6	0.1	
12mm		1.5			2.0 ± 0.1	30				
16mm										
24mm		2.0			2.0 ± 0.15	50				N/A (See Note 3)
32mm										
44mm										

### Variable Dimensions

Tape Size	P <sub>1</sub>	B <sub>1</sub> (Max)	E <sub>2</sub> (Min)	F	S <sub>0</sub>	T <sub>2</sub> (Max.)	W (Max)	A <sub>0</sub> , B <sub>0</sub> , & K <sub>0</sub>
8mm	Specific per package type. Refer to FR-0221 (Tape and Reel Packing Information) or visit <a href="http://www.diodes.com/assets/MediaList-Attachments/Diodes-Packaging-Information.pdf">www.diodes.com/assets/MediaList-Attachments/Diodes-Packaging-Information.pdf</a>	4.35	6.25	3.5 ± 0.05	N/A (see note 4)	2.5	8.3	See Note 1
12mm		8.2	10.25	5.5 ± 0.05		6.5	12.3	
16mm		12.1	14.25	7.5 ± 0.1		8.0	16.3	
24mm		20.1	22.25	11.5 ± 0.1		12.0	24.3	
32mm		23.0	N/A	14.2 ± 0.1	28.4 ± 0.1		32.3	
44mm		35.0	N/A	20.2 ± 0.15	40.4 ± 0.1	16.0	44.3	

NOTES:

- A<sub>0</sub>, B<sub>0</sub>, and K<sub>0</sub> are determined by component size. The cavity must restrict lateral movement of component to 0.5mm maximum for 8mm and 12mm wide tape and to 1.0mm maximum for 16,24,32, and 44mm wide carrier. The maximum component rotation within the cavity must be limited to 20° maximum for 8 and 12 mm carrier tapes and 10° maximum for 16 through 44mm.
- Tape and components will pass around reel with radius "R" without damage.
- S<sub>1</sub> does not apply to carrier width ≥32mm because carrier has sprocket holes on both sides of carrier where D<sub>2</sub>≥S<sub>1</sub>.
- S<sub>0</sub> does not exist for carrier ≤32mm because carrier does not have sprocket hole on both side of carrier.

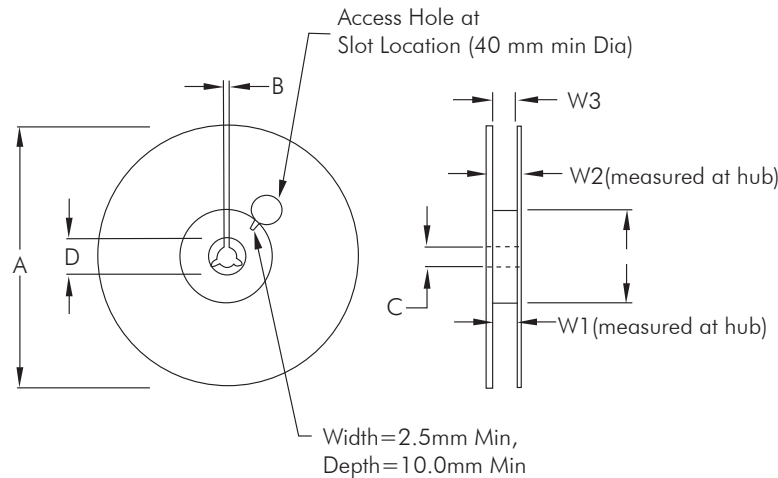


Figure 4: REEL DIMENSIONS BY TAPE SIZE

Tape Size	A	N (Min) See Note A	W <sub>1</sub>	W <sub>2</sub> (Max)	W <sub>3</sub>	B (Min)	C	D (Min)
8mm	178 ±2.0mm or 330±2.0mm	60 ±2.0mm or 100±2.0mm	8.4 +1.5/-0.0 mm	14.4 mm	Shall Accommodate Tape Width Without Interference	1.5mm	13.0 +0.5/-0.2 mm	20.2mm
12mm			12.4 +2.0/-0.0 mm	18.4 mm				
16mm	330 ±2.0mm	100 ±2.0mm	16.4 +2.0/-0.0 mm	22.4 mm				
24mm			24.4 +2.0/-0.0 mm	30.4 mm				
32mm			32.4 +2.0/-0.0 mm	38.4 mm				
44mm			44.4 +2.0/-0.0 mm	50.4 mm				

NOTE:

A. If reel diameter A=178 ±2.0mm, then the corresponding hub diameter (N(min)) will be 60 ±2.0mm. If reel diameter A=330±2.0mm, then the corresponding hub diameter (N(min)) will be 100±2.0mm.