



Product Tape and Reel Specifications

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ISBN: 978-1-61341-675-4

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Product Tape and Reel Specifications

FIGURE 1: 8, 12, 16 AND 24mm EMBOSSED CARRIER TAPE DIMENSIONS

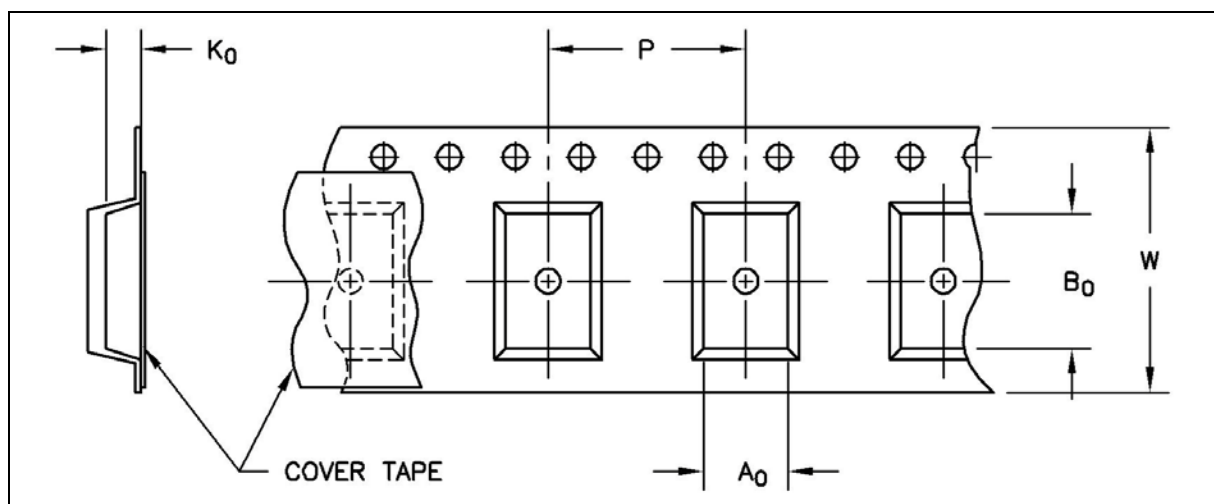


TABLE 1: 8, 12, 16 AND 24mm CARRIER TAPE AND CAVITY DIMENSIONS

Pkg Style Code	Package			Carrier Dimensions		Cavity Dimensions			Units per Reel	Reel Diameter mm
	Type	Width/Size	Leads	W mm	P mm	A ₀ mm	B ₀ mm	K ₀ mm		
VB	DDPAK		3	16	8	N/A	N/A	N/A	2500	330
EB	DDPAK		3	24	16	10.6	15.8	4.9	750	330
ET	DDPAK		5	24	16	10.6	15.8	4.9	750	330
EK	DDPAK		7	24	16	10.6	15.8	4.9	750	330
MC	DFN	2x3x0.9 mm		12	8	2.2	3.2	1.1	3300	330
				8	4	2.30	3.20	1.00	3300	330
MF	DFN	3x3x0.9 mm		12	8	3.3	3.3	1.1	3300	330
				12	8	3.3	3.3	1.0	3300	330
MD	DFN	4x4x0.9 mm		12	8	4.35	4.35	1.1	3300	330
MF	DFN-S	5x6x0.9 mm		16	12	5.3	6.3	1.3	3300	330
				12	8	5.3	6.3	1.2	3300	330
PQ	MQFP	10X10X2 mm	44	24	24	14.2	14.2	2.8	900	330
KW	MQFP	10X10X2 mm	44	24	24	14.2	14.2	2.8	900	330
MS	MSOP	10X10X2 mm	8	12	8	5.3	3.4	1.4	2500	330
UA	MSOP	10X10X2 mm	8	12	8	5.3	3.4	1.4	2500	330
MS	MSOP	10X10X2 mm	10	12	8	5.3	3.4	1.4	2500	330
UN	MSOP	10X10X2 mm	10	12	8	5.3	3.4	1.4	2500	330
L	PLCC		28	24	16	13.0	13.0	4.9	750	330
L	PLCC		32	24	16	13.1	15.5	3.9	900	330
ML	QFN	4x4x0.9mm		12	8	4.35	4.35	1.1	3300	330

Product Tape and Reel Specifications

TABLE 1: 8, 12, 16 AND 24mm CARRIER TAPE AND CAVITY DIMENSIONS

Pkg Style Code	Package			Carrier Dimensions		Cavity Dimensions			Units per Reel	Reel Diameter mm
	Type	Width/Size	Leads	W mm	P mm	A ₀ mm	B ₀ mm	K ₀ mm		
MP MQ	QFN	5x5x0.9mm		12	8	5.25	5.25	1.1	3300	330
				12	8	5.50	5.50	1.30	3300	330
ML	QFN	6x6x0.9mm		16	12	6.3	6.3	1.1	1600	330
ML	QFN	8x8x0.9mm		16	12	8.3	8.3	1.1	1600	330
MR	QFN	9x9x0.9mm		16	12	9.30	9.30	1.10	3300	330
MM	QFN-S	6x6x0.9mm		16	12	6.3	6.3	1.1	1600	330
QR	QSOP		16	12	8	6.23	5.4	2.12	2500	330
				12	8	6.4	5.2	2.1	2500	330
				12	8	6.5	5.2	2.1	2500	330
RM	RF MODULE			44	24	18.20	28.35	2.50	350	330
LB	SC-70		3	8	4	2.4	2.4	1.19	3000	180
LT	SC-70		5 & 6	8	4	2.24	2.34	1.22	3000	180
SN	SOIC	.150"	8	12	8	6.4	5.2	2.1	3300	330
				12	8	6.5	5.2	2.1	3300	330
OA	SOIC	.150"	8	12	8	6.4	5.2	2.1	3300	330
				12	8	6.5	5.2	2.1	3300	330
SL	SOIC	.150"	14	16	8	6.4	9.05	2.1	2600	330
				16	8	6.5	9.5	2.1	2600	330
OD	SOIC	.150"	14	16	8	6.4	9.05	2.1	2600	330
				16	8	6.5	9.5	2.1	2600	330
SL	SOIC	.150"	16	16	8	6.5	10.3	2.0	2600	330
				16	8	6.5	10.3	2.1	2600	330
SO	SOIC	.300"	16	16	12	10.9	10.7	3.0	1000	330
OE	SOIC	.300"	16	16	12	10.9	10.7	3.0	1000	330
SO	SOIC	.300"	18	24	12	10.9	13.3	3.0	1100	330
				24	16	11.05	12.04	2.84	1100	330
				24	16	11.1	12.0	2.8	1100	330
SO	SOIC	.300"	20	24	12	10.9	13.3	3.0	1600	330
SO	SOIC	.300"	24	24	12	10.9	16.0	3.0	1000	330
OG	SOIC	.300"	24	24	12	10.9	16.0	3.0	1000	330
SO	SOIC	.300"	28	24	12	10.9	18.3	3.0	1600	330
OI	SOIC	.300"	28	24	12	10.9	18.3	3.0	1600	330
SM	SOIC (SOIJ)	.208"	8	16	12	8.3	5.7	2.3	2100	330
						8.6	5.7	2.3	2100	330
HA	SOP		8	12	8	N/A	N/A	N/A	1000	330
RC	SOT-143		4	8	4	3.1	2.69	1.3	3000	330
DB	SOT-223		3	12	8	6.83	7.42	1.88	4000	330

Product Tape and Reel Specifications

TABLE 1: 8, 12, 16 AND 24mm CARRIER TAPE AND CAVITY DIMENSIONS

Pkg Style Code	Package			Carrier Dimensions		Cavity Dimensions			Units per Reel	Reel Diameter mm
	Type	Width/Size	Leads	W mm	P mm	A ₀ mm	B ₀ mm	K ₀ mm		
OT	SOT-23		5	8	4	3.23	3.17	1.37	3000	180
CT	SOT-23		5	8	4	3.23	3.17	1.37	3000	180
CH	SOT-23		6	8	4	3.23	3.17	1.37	3000	180
CHY	SOT-23		6	8	4	3.23	3.17	1.37	3000	180
OT	SOT-23		6	8	4	3.23	3.17	1.37	3000	180
TT	SOT-23		3	8	4	3.15	2.77	1.22	3000	180
NB	SOT-23		3	8	4	3.15	2.77	1.22	3000	180
CB	SOT-23A		3	8	4	3.25	3.15	1.55	3000	180
MB	SOT-89		3	12	8	4.91	4.52	1.9	1000	330
MT	SOT-89		5	12	8	N/A	N/A	N/A	1000	330
SS	SSOP		20	16	12	8.4	7.6	2.5	1600	330
				16	12	8.4	7.7	2.5	1600	330
SS	SSOP		24	16	12	8.4	8.7	2.5	2100	330
SS	SSOP		28	24	12	8.3	10.7	2.2	2100	330
MN	TDFN	2x3x0.8mm		12	8	2.2	3.2	1.1	3300	330
PT	TQFP	7x7x1mm	32	16	12	9.6	3.2	1.1	1600	330
PT	TQFP	10x10x1mm	44 & 64	24	16	12.4	12.4	2.2	1200	330
PT	TQFP	12x12x1mm	80 & 100	24	24	14.4	14.4	1.7	1200	330
PF	TQFP	14x14x1mm	64, 80 & 100	24	20	16.5	16.5	1.9	1000	330
ST	TSSOP		8	12	8	6.75	3.4	1.3	2500	330
ST	TSSOP		14	16	8	6.8	5.4	1.6	2500	330
ST	TSSOP		20	16	8	6.8	6.9	1.6	2500	330
MU	UDFN	2x3x0.5mm		12	8	2.2	3.2	1.1	3300	330
				12	4	2.30	3.30	0.80	3300	330
MV	UQFN	4x4x0.5mm		4.35	4.35	1.1	4.35	4.35	3300	330
MV	UQFN	6x6x0.5mm		16	12	6.3	6.3	0.9	3300	330
				16	12	6.3	6.3	0.8	3300	330
BG	XBGA	10x10	121	24	12	4.25	4.25	0.9	2200	330

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FIGURE 2: 32 AND 44mm EMBOSSED CARRIER TAPE DIMENSIONS

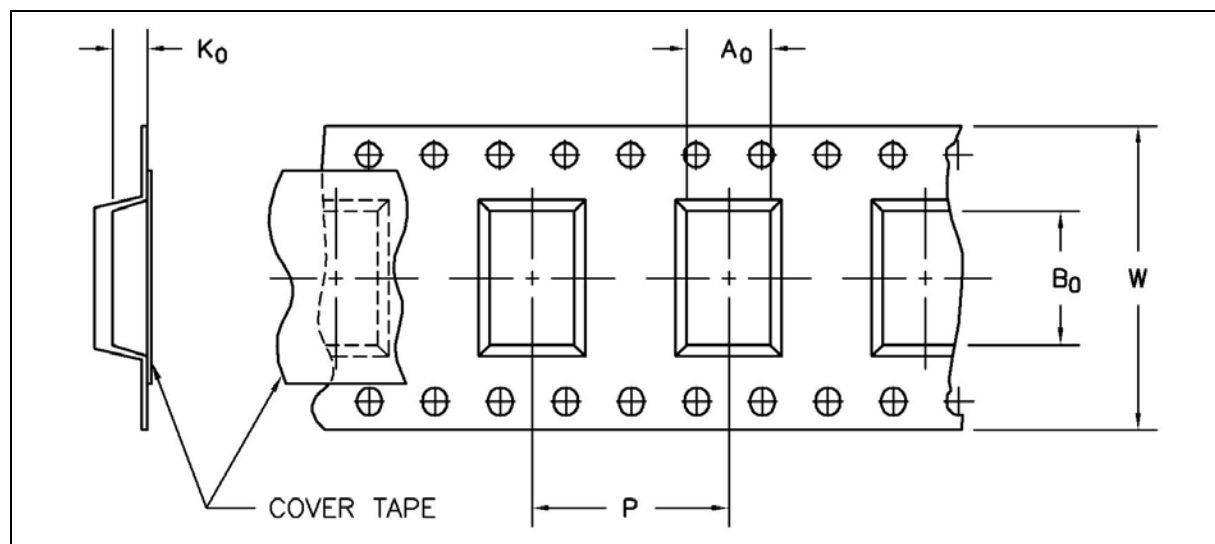
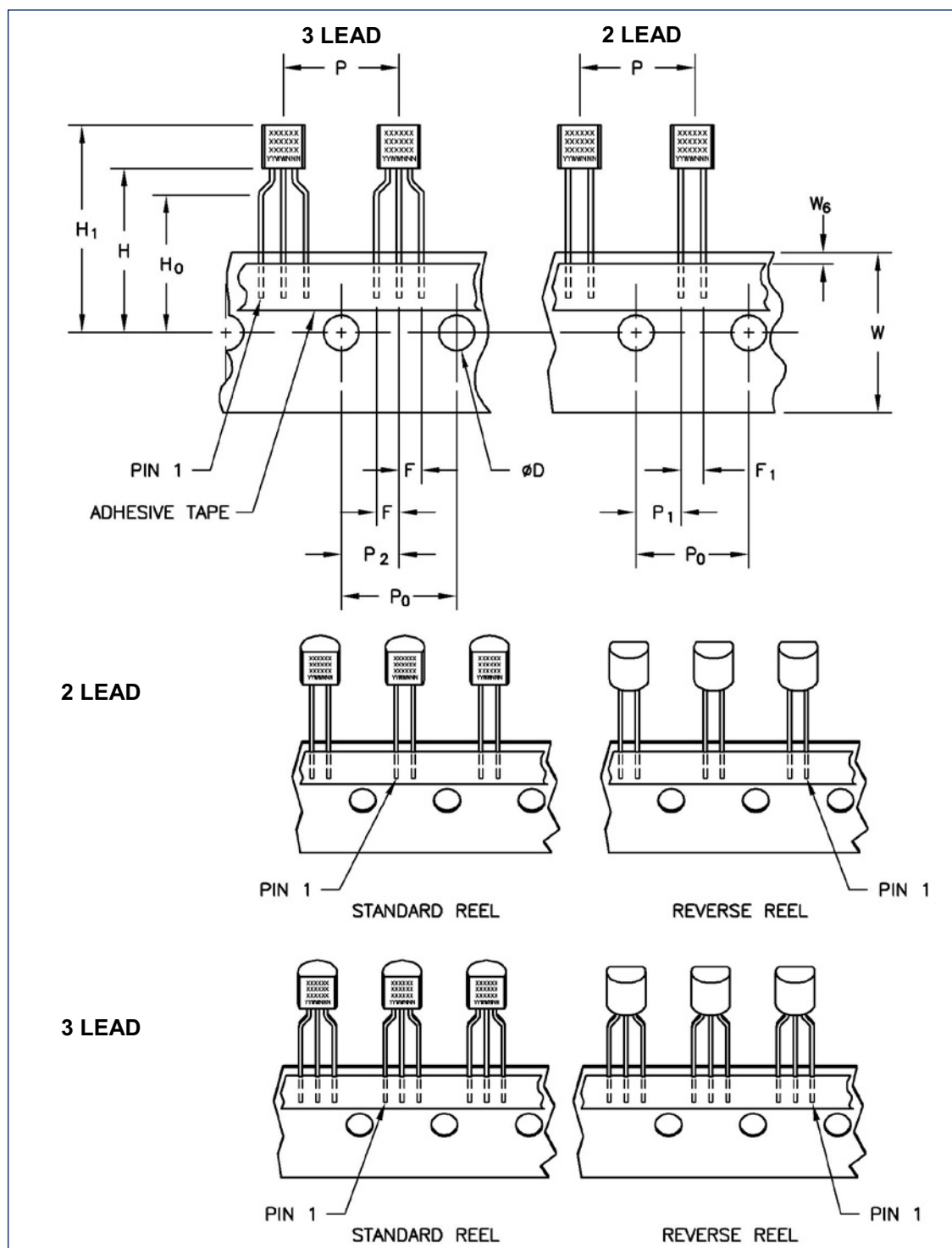


TABLE 2: 32 AND 44mm CARRIER TAPE AND CAVITY DIMENSIONS

Pkg Style Code	Package			Carrier Dimensions		Cavity Dimensions			Output Quantity Units	Reel Diameter mm
	Type	Width/ Size	Leads	W mm	P mm	A ₀ mm	B ₀ mm	K ₀ mm		
BU	MQFP	14x14x2.7mm	64	32	24	18.0	18.0	3.6	250	330
L	PLCC		44	32	24	18.0	18.0	4.9	500	330
LW	PLCC		44	32	24	18.0	18.0	4.9	500	330
L	PLCC		68	44	32	25.6	25.6	5.3	300	330
				44	32	25.6	25.6	5.7	300	330
				44	32	25.6	25.6	5.8	300	330
LS	PLCC		68	44	32	25.6	25.6	5.3	300	330
				44	32	25.6	25.6	5.7	300	330
				44	32	25.6	25.6	5.8	300	330
L	PLCC		84	44	36	30.7	30.7	5.8	300	330

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FIGURE 3: TO-92 DEVICES

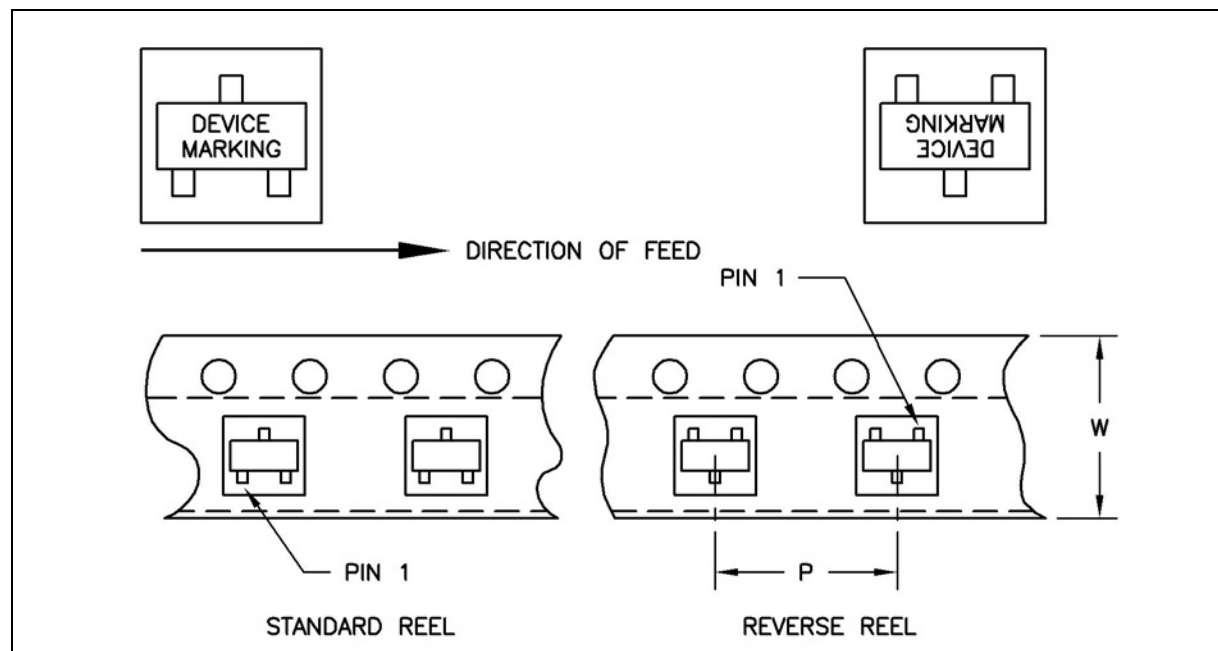


Product Tape and Reel Specifications

TABLE 3: TO-92 CARRIER TAPE DIMENSIONS

Symbol	Description	Dimension mm
D	Sprocket Hole Diameter	4.0 $\pm$ 0.2
P	Device Pitch	12.7 $\pm$ 0.1
P ₀	Feed Hole Pitch	12.7 $\pm$ 0.1
P ₁	Ordinate to Adjacent lead (2-Lead TO-92)	5.07 $\pm$ 0.7
P ₂	Ordinate to Center Lead (3-Lead TO-92)	6.35 $\pm$ 0.7
F ₁	2 Lead TO-92 Spacing	2.54 +0.6/-0.2
F	3 Lead TO-92 Spacing	2.54 +0.4/-0.1
H ₀	Height to Seating Plane (Formed Leads)	15.5 MIN.
H ₁	Overall Height Above Abscissa	32.2 MAX.
H	Height to Seating Plane (Straight Leads)	16 - 21
W	Carrier Tape Width	18
W ₆	Adhesive Tape Position	3 MAX.
-	Output Quantity Units	1000
-	Reel Diameter	355

FIGURE 4: 3L SOT-23, 3L SOT-23A AND SC-70 DEVICE ORIENTATION



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FIGURE 5: 5L SOT-23 AND SC-70 DEVICE ORIENTATION

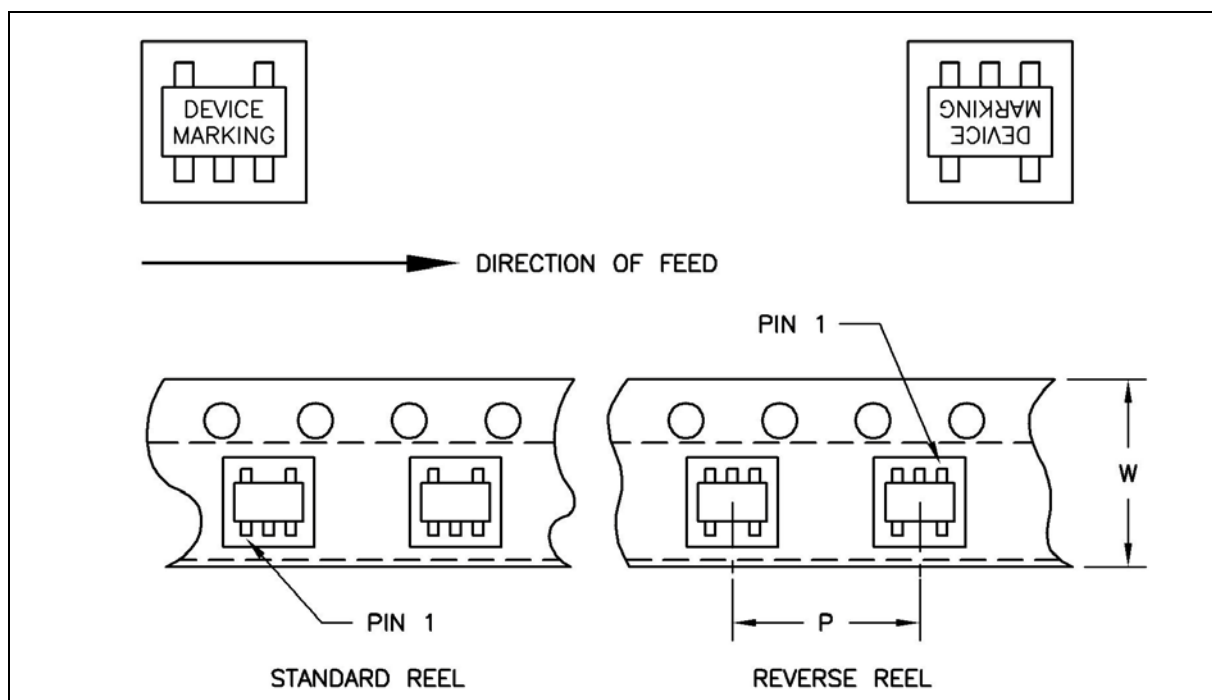
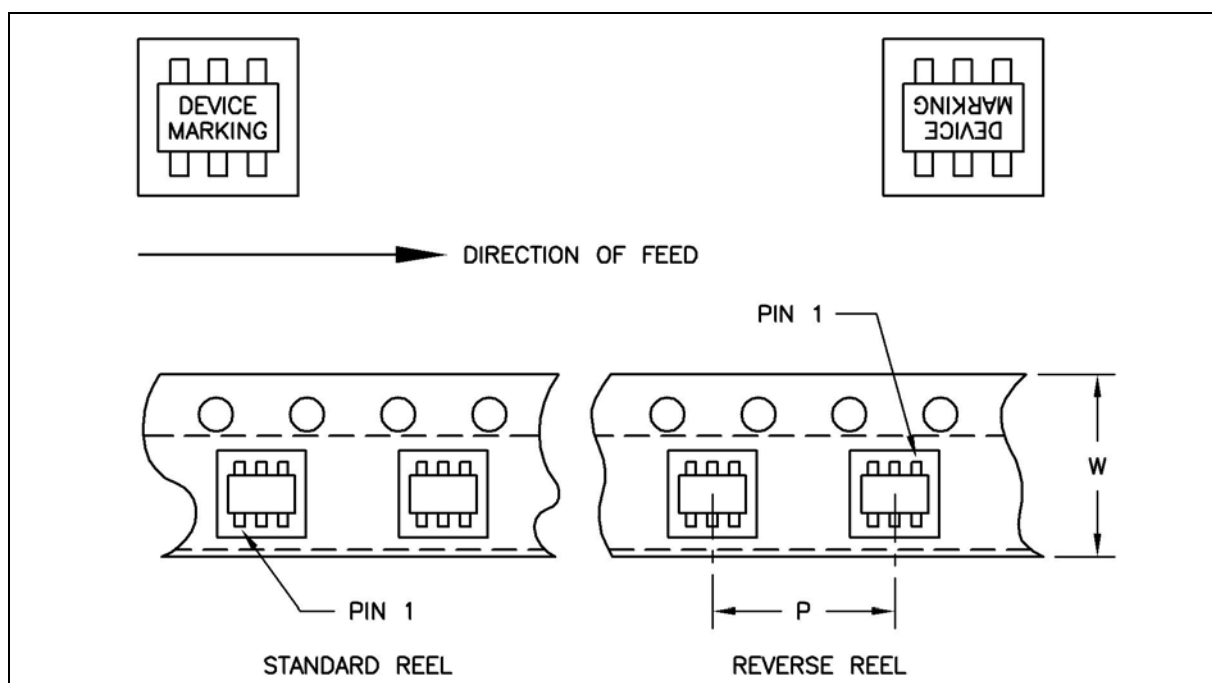


FIGURE 6: 6L SOT-23 DEVICE ORIENTATION



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FIGURE 7: 4L SOT-143 DEVICE ORIENTATION

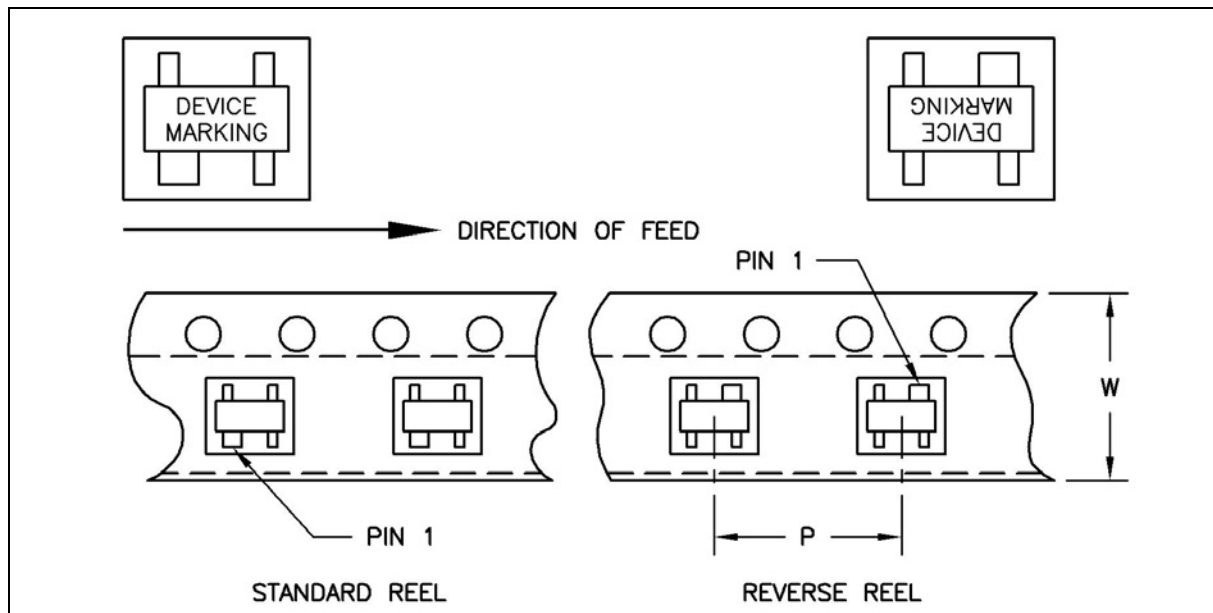
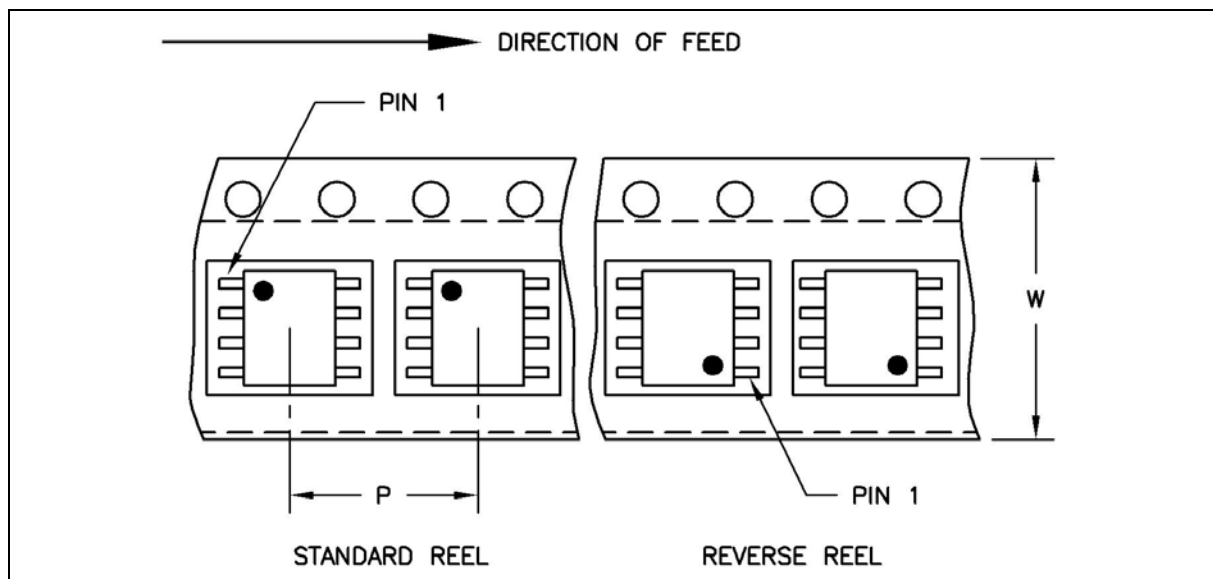


FIGURE 8: SOP, SSOP, SOIC and MSOP DEVICE ORIENTATION



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FIGURE 9: 3L SOT-223 DEVICE ORIENTATION

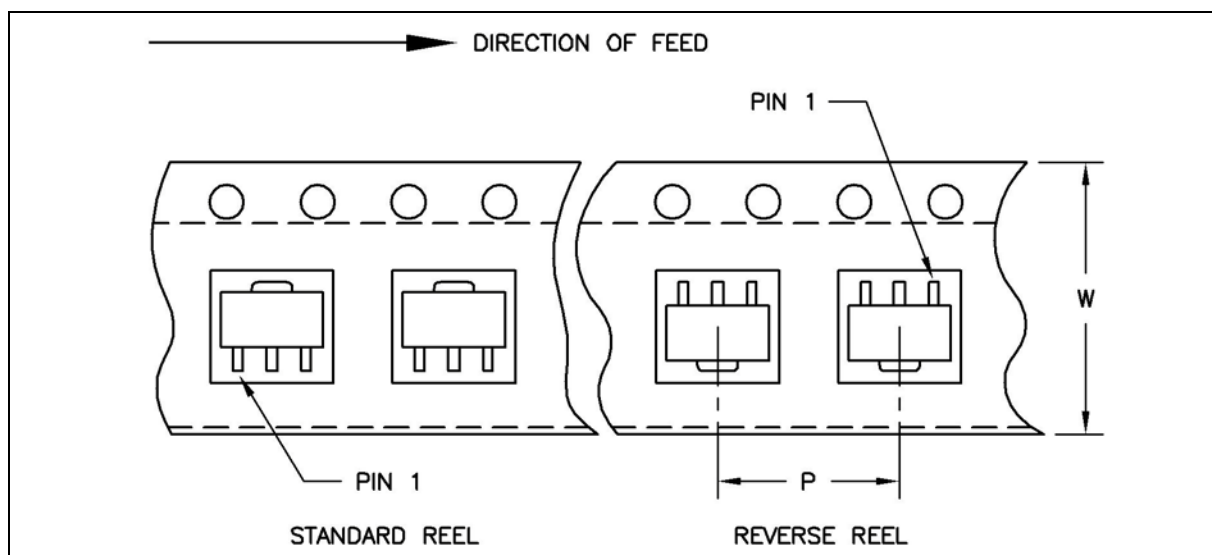
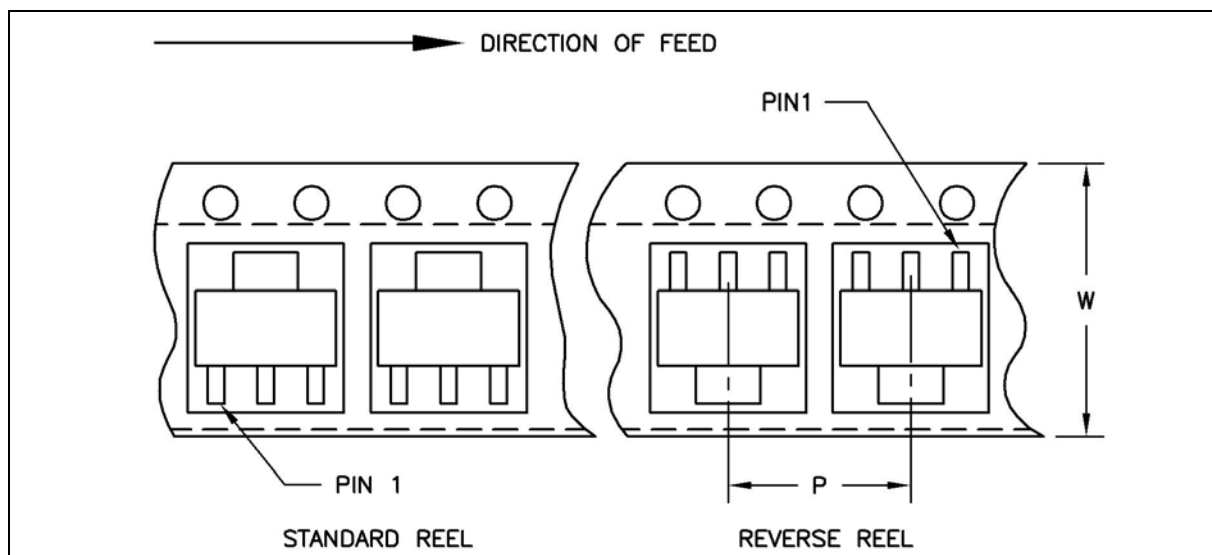


FIGURE 10: SOT-89 DEVICE ORIENTATION



Product Tape and Reel Specifications

FIGURE 11: DFN, TDFN, UDFN AND QFN DEVICE ORIENTATION

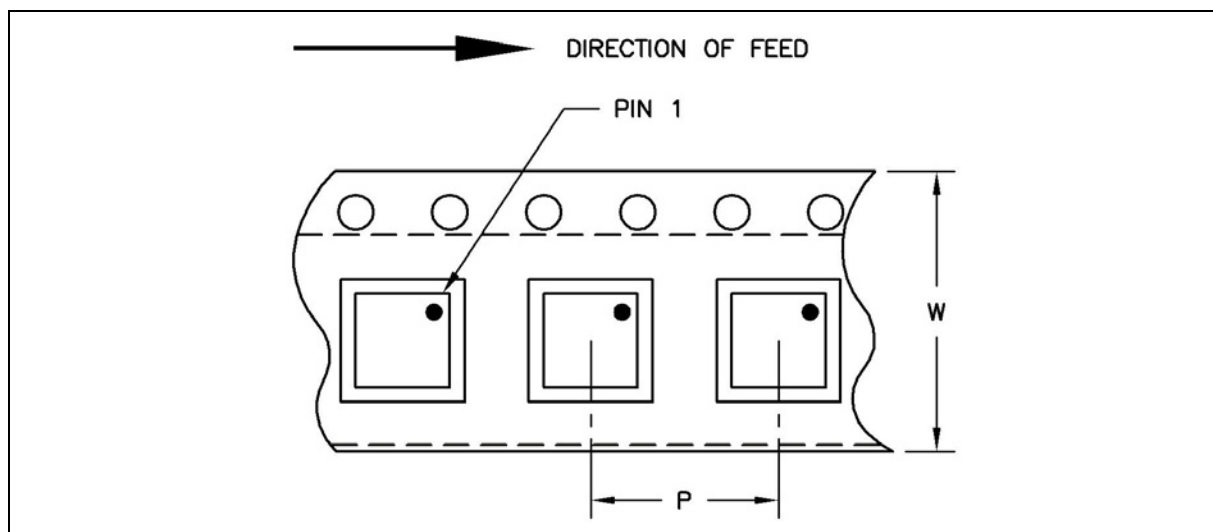
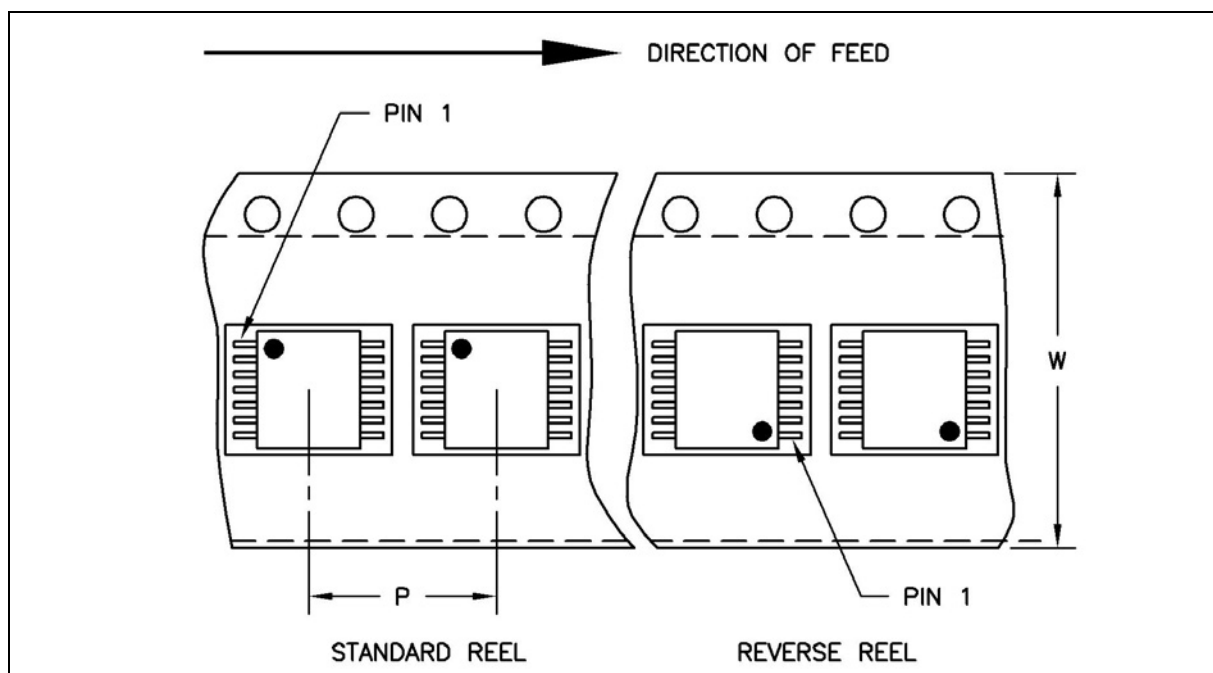


FIGURE 12: QSOP, SSOP AND TSSOP DEVICE ORIENTATION



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FIGURE 13: MQFP AND TQFP DEVICE ORIENTATION

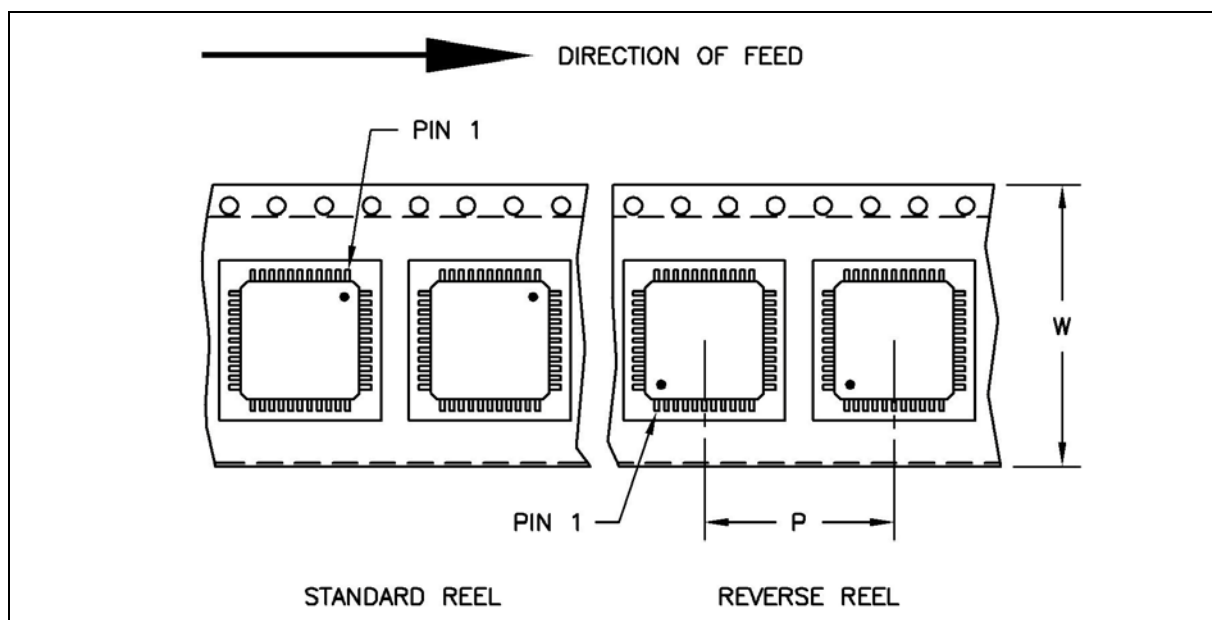
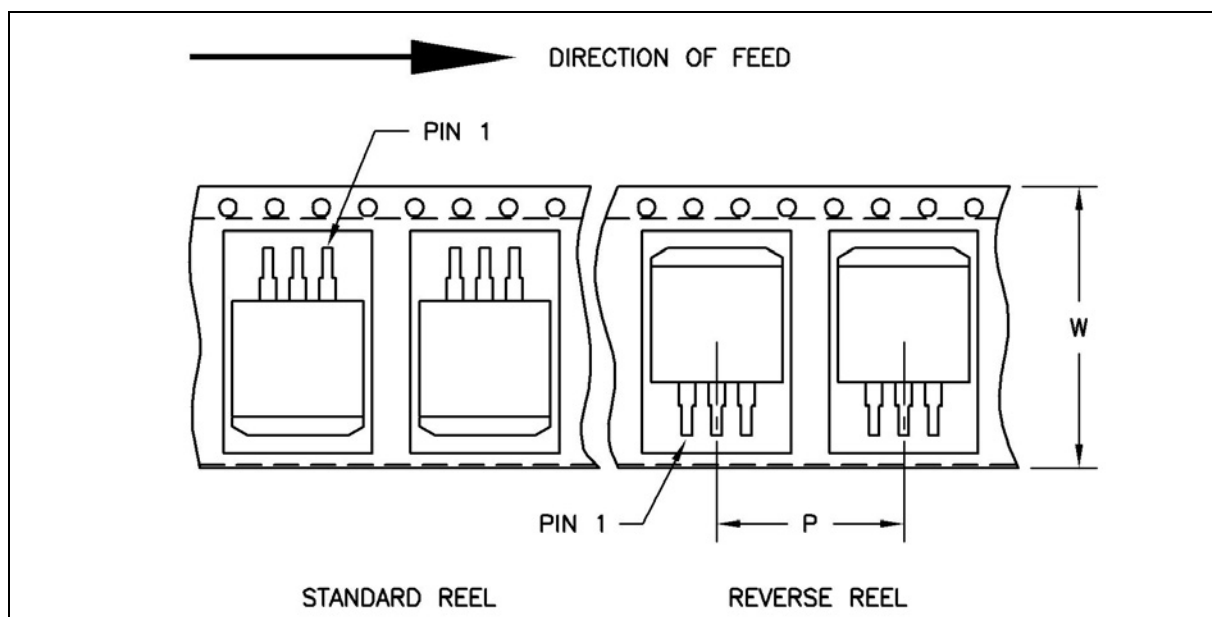
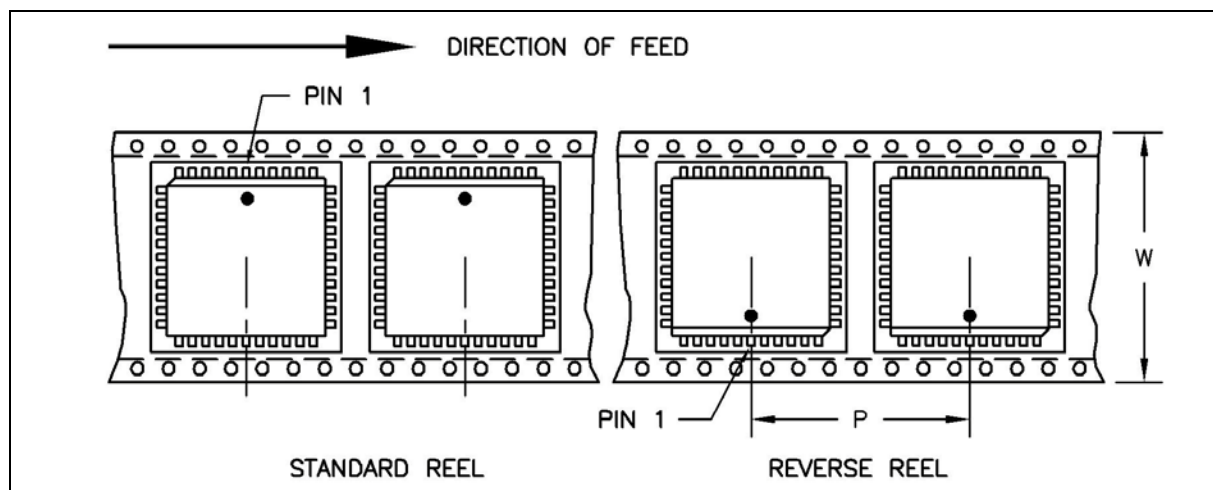


FIGURE 14: DPAK AND DDPAK DEVICE ORIENTATION



Product Tape and Reel Specifications

FIGURE 15: PLCC DEVICE ORIENTATION



PRODUCT TAPE AND REEL

APPENDIX A: REVISION HISTORY

Revision H Document (November 2011)

Removed the section, Dimensions and Tolerances, that was Appendix A in the previous version.

Revision G Document (September 2010)

Included additional package style codes, so packages that are identical except for the associated package designators are listed separately; once by the Microchip designator, and again by the Telcom designator. For example, a 5-lead SOT-23 package is listed twice in the Carrier Tape and Cavity Dimensions table – once as an OT package style code, and again as a CT package style code.

Revision F Document (February 2008)

The content and drawings in this document have been revised for this new version.

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Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

UK - Wokingham
Tel: 44-118-921-5869
Fax: 44-118-921-5820