



Application Note

AN_116

FTDI Devices Tape, Reel, Tray & Tube Dimensions

Version 2.0

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This document provides information on the Tape, Reel, Tray and Tube dimensions for FT232BL, FT245BL, FT232BQ, FT245BQ, FT232RL, FT245RL, FT232RQ, FT245RQ, FT2232D, FT232HL, FT232HQ, FT2232HL, FT2232HQ, FT4232HL, FT4232HQ, FT-X series chips, FT120, FT311D, FT312D, FT313H, FT4222HQ, VNC1L, VNC2, FT600, FT601, FT602.

This Application Note supersedes the FTDI Application Note AN232B-11.

Use of FTDI devices in life support and/or safety applications is entirely at the user's risk, and the user agrees to defend, indemnify and hold FTDI harmless from any and all damages, claims, suits or expense resulting from such use.

Table of Contents

1	Introduction	4
2	Packaging options	5
2.1	Tape and Reel Packaging	5
2.2	Tray/Tube Packaging	6
3	FT232BL, FT245BL and FT2232D Tape Dimensions	7
4	FT232BL, FT245BL and FT2232D Reel Dimensions	8
5	FT232BQ and FT245BQ Tape Dimensions	9
6	FT232BQ and FT245BQ Reel Dimensions	10
7	FT232RL and FT245RL Tape Dimensions	11
8	FT232RL and FT245RL Reel Dimensions	12
9	FT232RL and FT245RL Tube Dimensions	13
10	FT232RQ and FT245RQ Tape Dimensions	14
11	FT232RQ and FT245RQ Reel Dimensions	15
12	FT232RQ and FT245RQ Tray Dimensions	16
13	FT2232HL and FT4232HL Tape Dimensions	17
14	FT2232HL and FT4232HL Reel Dimensions	18
15	FT2232HL and FT4232HL Tray Dimensions	19
16	FT2232HQ and FT4232HQ Tape Dimensions	20
17	FT2232HQ and FT4232HQ Reel Dimensions	21
18	FT2232HQ and FT4232HQ Tray Dimensions	22
19	FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Reel Dimensions	23
20	FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Tape Dimensions	24
21	FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Tray Dimensions	25
22	VNC1L – A – Reel Vendor Part No. RD33008SW	26
23	VNC1L – A – Cover Tape Vendor Part No. AA13305NP... ..	27

24 VNC1L – A – Carrier Tape Vendor Part No. Q07X07-A ...	28
25 FT311D-32L1C, FT312D-32L1C, VNC2-32L1C –LQFP Reel Dimensions	29
26 FT311D-32L1C, FT312D-32L1C, VNC2-32L1C – LQFP Carrier Tape Dimensions	30
27 VNC2-48L1C, FT232HL – LQFP Reel Dimensions.....	31
28 VNC2-48L1C, FT232HL – LQFP Carrier Tape Dimensions	32
29 FT311D-32L1C, FT312D-32L1C, VNC2-32L1C, VNC2-48L1C, FT232HL - LQFP Tray Dimensions.....	33
30 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C –QFN Reel Dimensions	34
31 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C – QFN Carrier Tape Dimensions	35
32 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C – QFN Tray Dimensions	36
33 FT200XD, FT234XD Reel Dimensions.....	37
34 FT200XD, FT234XD Tape Dimensions	38
35 FT201XQ, FT220XQ, FT221XQ, FT230XQ, FT231XQ, FT240XQ QFN Reel Dimensions	39
36 FT201XQ, FT220XQ, FT221XQ, FT230XQ, FT231XQ, FT240XQ QFN Tape Dimensions	40
37 FT201XQ, FT220XQ, FT230XQ SSOP Reel Dimensions ...	41
38 FT201XQ, FT220XQ, FT230XQ SSOP Tape Dimensions ..	42
39 FT221XQ, FT231XQ, FT240XQ SSOP Reel Dimensions ...	43
40 FT221XQ, FT231XQ, FT240XQ SSOP Tape Dimensions ..	44
41 FT120T TSSOP Reel Dimensions	45
42 FT120T TSSOP Tape Dimensions	46
43 FT120Q Reel Dimensions.....	47
44 FT120Q QFN Tape Dimensions	48

45 FT201XS, FT220XS, FT230XS, FT240XS Reel Dimensions	
49	
46 FT221XS, FT231XS Reel Dimensions	50
47 FT231XS Tube Dimensions	51
48 FT313H-QFN Reel Dimensions	52
49 FT313H-QFN Tape Dimensions	53
50 FT313H-LQFP Reel Dimensions	54
51 FT313H-LQFP Tape Dimensions.....	55
52 FT313H-TQFP Reel Dimensions	56
53 FT313H-TQFP Tape Dimensions.....	57
54 FT600Q Reel Dimensions.....	58
55 FT600Q Tape Dimensions	59
56 FT601Q, FT602Q Reel Dimensions.....	60
57 FT601Q, FT602Q Tape Dimensions	61
58 FT4222HQ Reel Dimensions	62
59 FT4222HQ Tape Dimensions.....	63
60 FT4222HQ Tray Dimensions	64
61 Contact Information.....	65
Appendix A – References	90
Document References	90
Acronyms and Abbreviations	90
Appendix B – List of Figures and Tables.....	91
List of Figures	91
List of Tables.....	92
Appendix C – Revision History	93



1 Introduction

This document provides information on the tape and reel dimensions for FT232BL, FT245BL, FT232BQ, FT245BQ, FT232RL, FT245RL, FT232RQ, FT245RQ, FT2232D, FT2232HL, FT2232HQ, FT4232HL, FT4232HQ, FT232HL, FT232HQ, FT-X series chips, FT120, FT311D, FT312D, FT313H, FT4222HQ, VNC1L, VNC2, FT600, FT601 and FT602.

2 Packaging options

FTDI can supply devices packaged in tape and reel packaging or in trays or tubes. The quantities in each package type are described below.

2.1 Tape and Reel Packaging

IC – Tape and Reel	Package	Quantities (pieces)
FT232BL, FT245BL – R	LQFP	1000
FT232BQ	QFN	2500
FT232RL, FT245RL – R	SSOP	2000
FT232RQ, FT245RQ – R	QFN	6000
FT2232D – R	LQFP	1000
FT2232HL – R	LQFP	1000
FT2232HQ – R 9x9	QFN	4000
FT4232HL – R	LQFP	1000
FT4232HQ – R 9x9	QFN	4000
FT2232H-56Q – R 8x8	QFN	3000
FT4232H-56Q – R 8x8	QFN	3000
FT232HQ – R 8x8	QFN	3000
FT232HL	LQFP	1500
FT4222HQ	QFN	5000
VINC1L – A – R	LQFP	2000
VNC2-32LQFP	LQFP	1500
VNC2-48LQFP	LQFP	1500
VNC2-32 QFN 7x7	QFN	3000
VNC2-48 QFN 8x8	QFN	3000
FT311DLQFP	LQFP	1500
FT311D QFN 7x7	QFN	3000
FT312DLQFP	LQFP	1500
FT312D QFN 7x7	QFN	3000
FT200XD- R, FT234XD-R	DFN	5000
FT201XS – R, FT220XS – R, FT221XS – R, FT230XS – R, , FT240XS – R	SSOP	3000
FT231XS – R	SSOP	2000
FT201XQ- R, FT220XQ – R, FT221XQ – R, FT230XQ – R, FT231XQ – R, FT240XQ – R	QFN	5000
FT313HQ – R	QFN	3000
FT313HL – R	LQFP	1000
FT313HP – R	TQFP	2500
FT4222HQ-R	VQFN	5000

Table 2.1 – Tape and Reel Quantities

2.2 Tray/Tube Packaging

IC – Tray/Tube	Package	Quantities (pieces)	Box of Trays/Tube (pieces)
FT232BL, FT245BL – Tray	LQFP	250	2500
FT232RQ, FT245RQ – Tray	QFN	490	4900
FT2232D – Tray	LQFP	250	2500
FT2232HL – Tray	LQFP	160	1600
FT2232HQ – Tray	QFN	260	2600
FT4232HL – Tray	LQFP	160	1600
FT4232HQ – Tray	QFN	260	2600
VINC1L – A – Tray	LQFP	250	2500
VNC2-32LQFP	LQFP	250	2500
VNC2-48LQFP	LQFP	250	2500
VNC2-32 QFN 7x7x.9	QFN	260	2600
VNC2-48 QFN 8x8x.9	QFN	260	2600
FT311DLQFP	LQFP	250	2500
FT311D QFN 7X 7 X .9	QFN	260	2600
FT200XD- T, FT234XD-T	DFN	490	4900
FT201XS- U, FT220XS- U, FT230XS- U,	SSOP	100	10000
FT240XS - U, FT231XS- U	SSOP	58	5800
FT201XQ- T, FT220XQ- T, FT230XQ- T, FT240XQ- T	QFN	490	4900
FT120T- U	TSSOP	50	3000
FT120Q- T	QFN	490	
FT313HP - T	TQFP	250	2500
FT313HQ - T	QFN	260	2600
FT313HL - T	LQFP	160	1600

Table 2.2 – Tube/Tray Quantities

3 FT232BL, FT245BL and FT2232D Tape Dimensions

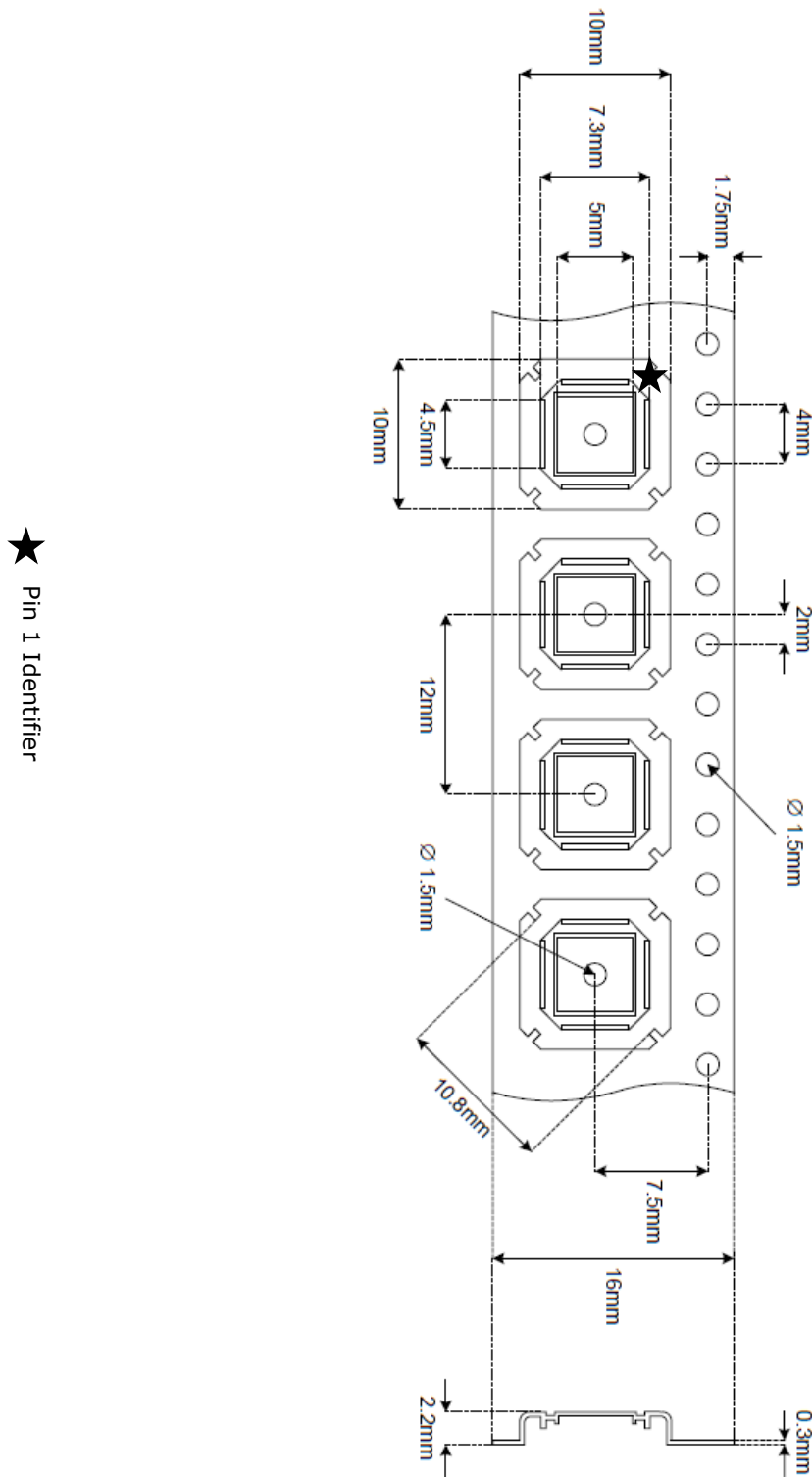


Figure 3.1 – FT232BL, FT245BL and FT2232D Tape Dimensions

4 FT232BL, FT245BL and FT2232D Reel Dimensions

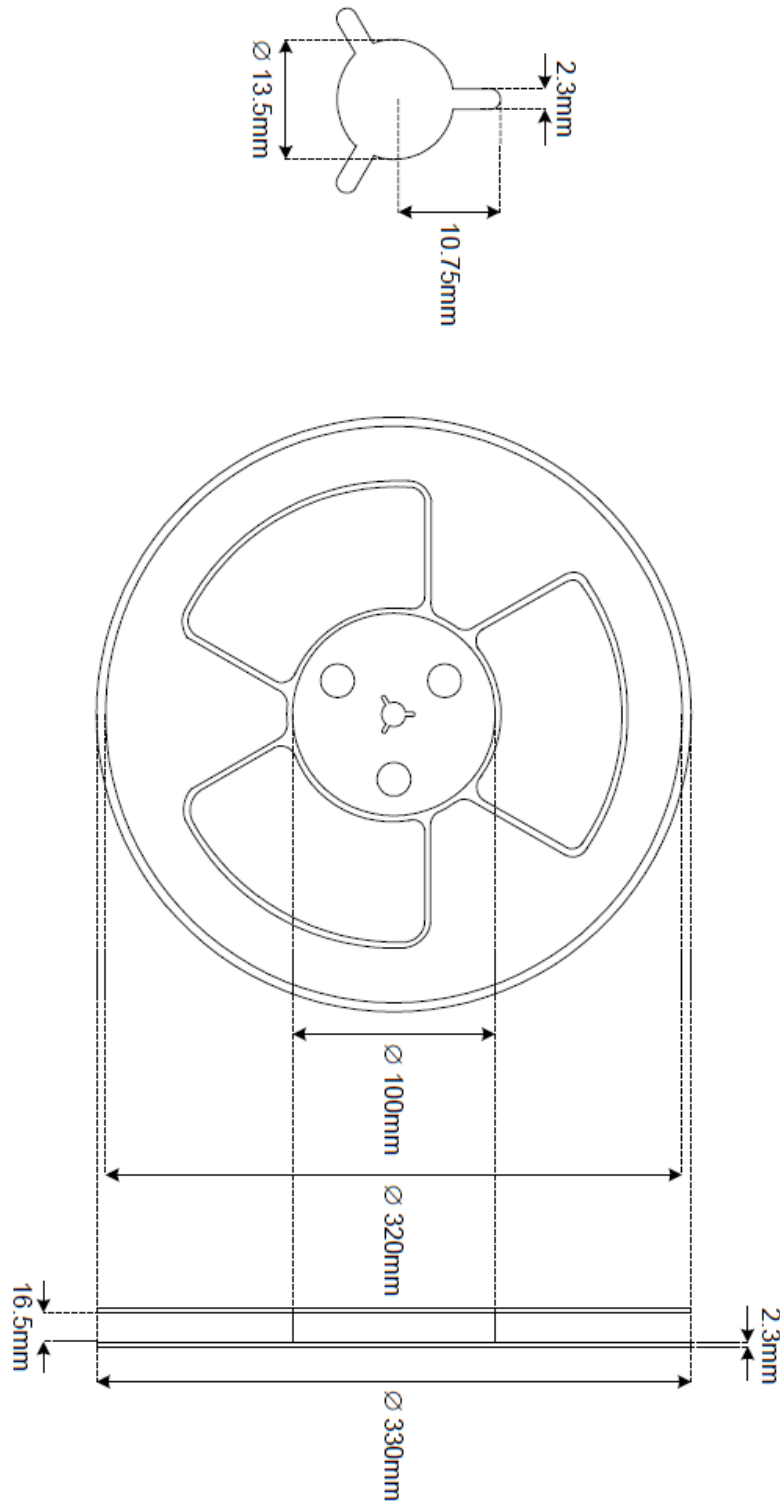
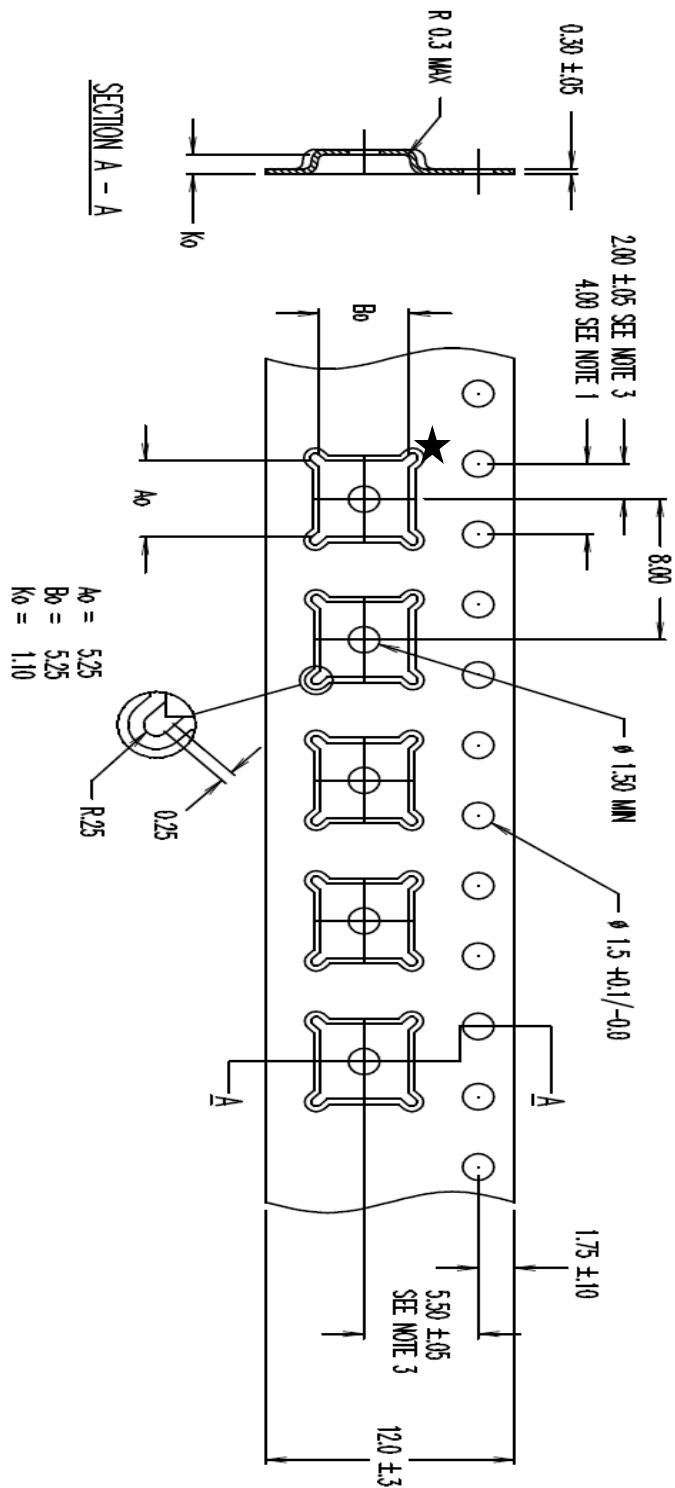


Figure 4.1 – FT232BL, FT245BL and FT2232D Reel Dimensions

5 FT232BQ and FT245BQ Tape Dimensions



- Notes:
1. 10 sprocket hole pitch cumulative tolerance ± 0.2
 2. Camber not to exceed 1mm in 100mm.
 3. Material: Black Advantek Polystyrene.
 4. A0 and B0 measured on a plane 0.3mm above the bottom of the pocket.
 5. K0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
 6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

★ Pin 1 Identifier

Figure 5.1 – FT232BQ and FT245BQ Tape Dimensions

6 FT232BQ and FT245BQ Reel Dimensions

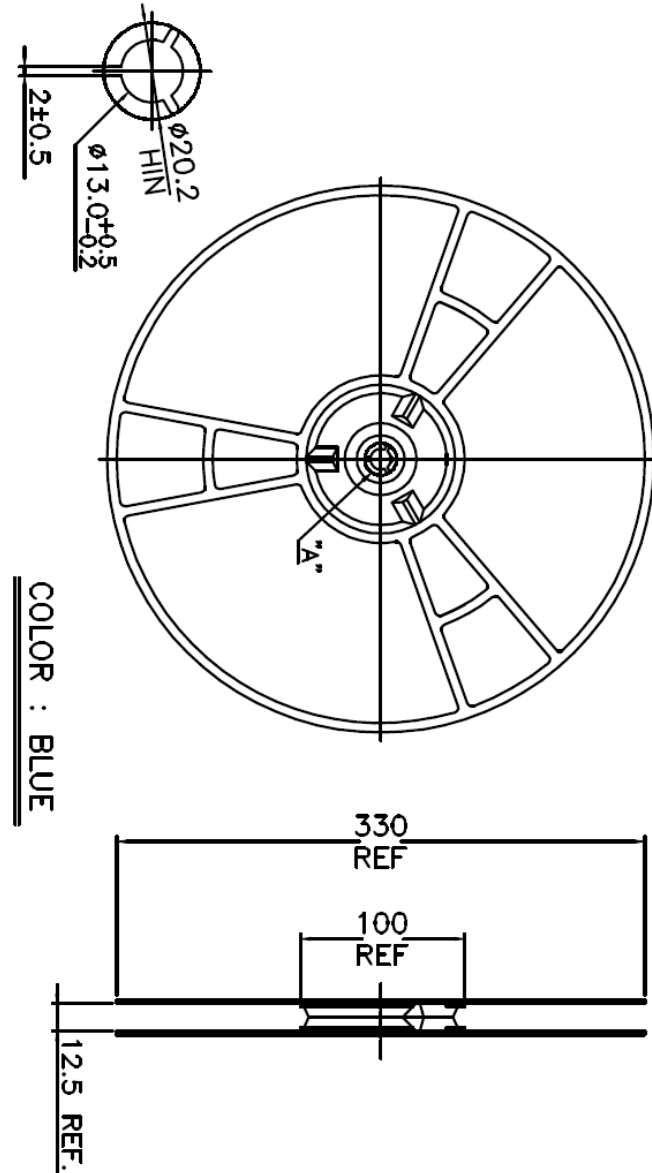


Figure 6.1 – FT232BQ and FT245BQ Reel Dimensions

7 FT232RL and FT245RL Tape Dimensions

- NOTES:
1. 10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE ± 0.2
 2. CAMBER IN COMPLIANCE WITH EIA 481
 3. POCKET POSITION RELATIVE TO SPROCKET HOLE MEASURED AS TRUE POSITION OF POCKET, NOT POCKET HOLE

★ Pin 1 Identifier

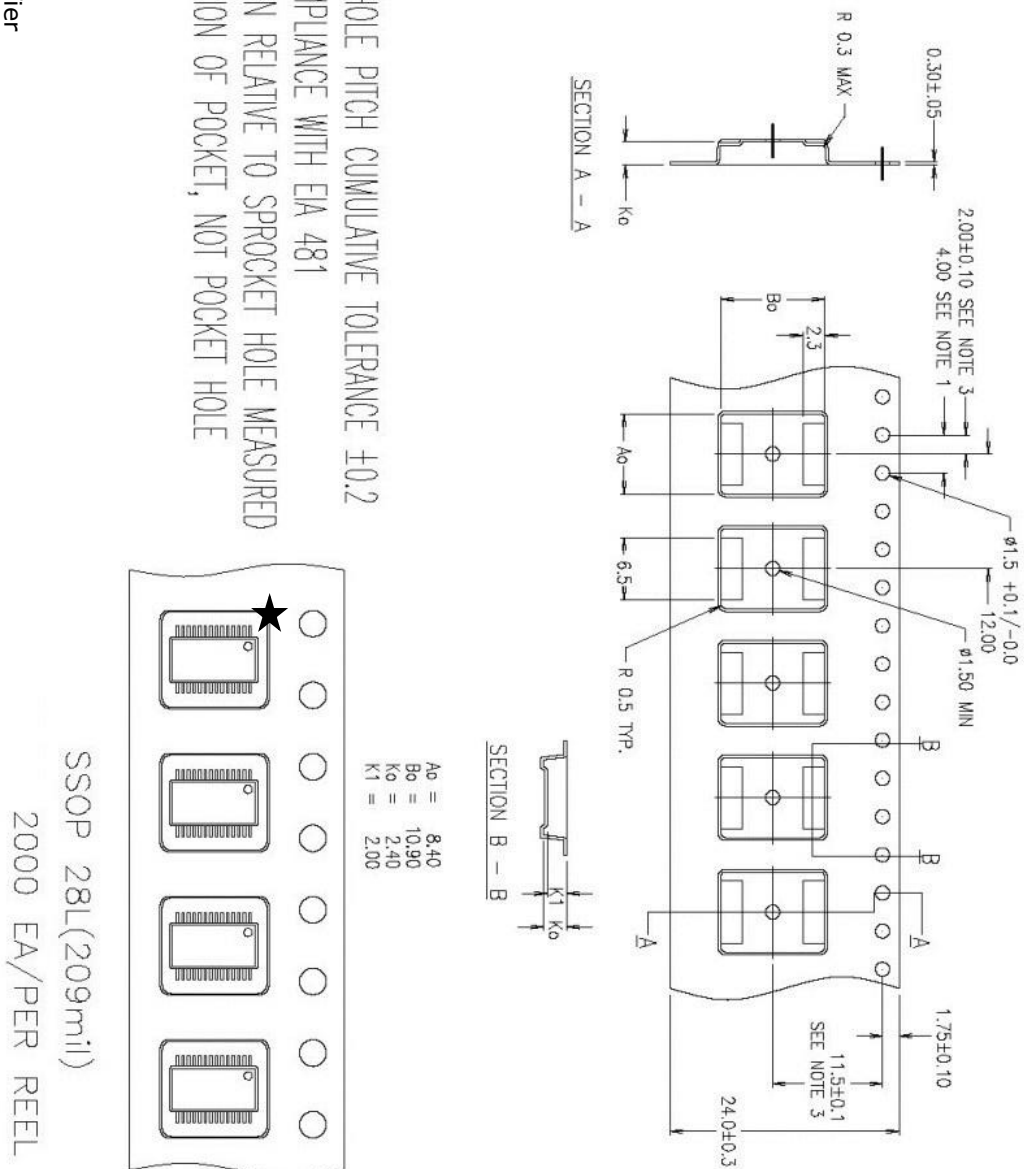


Figure 7.1 - FT232RL and FT245RL Tape Dimensions

8 FT232RL and FT245RL Reel Dimensions

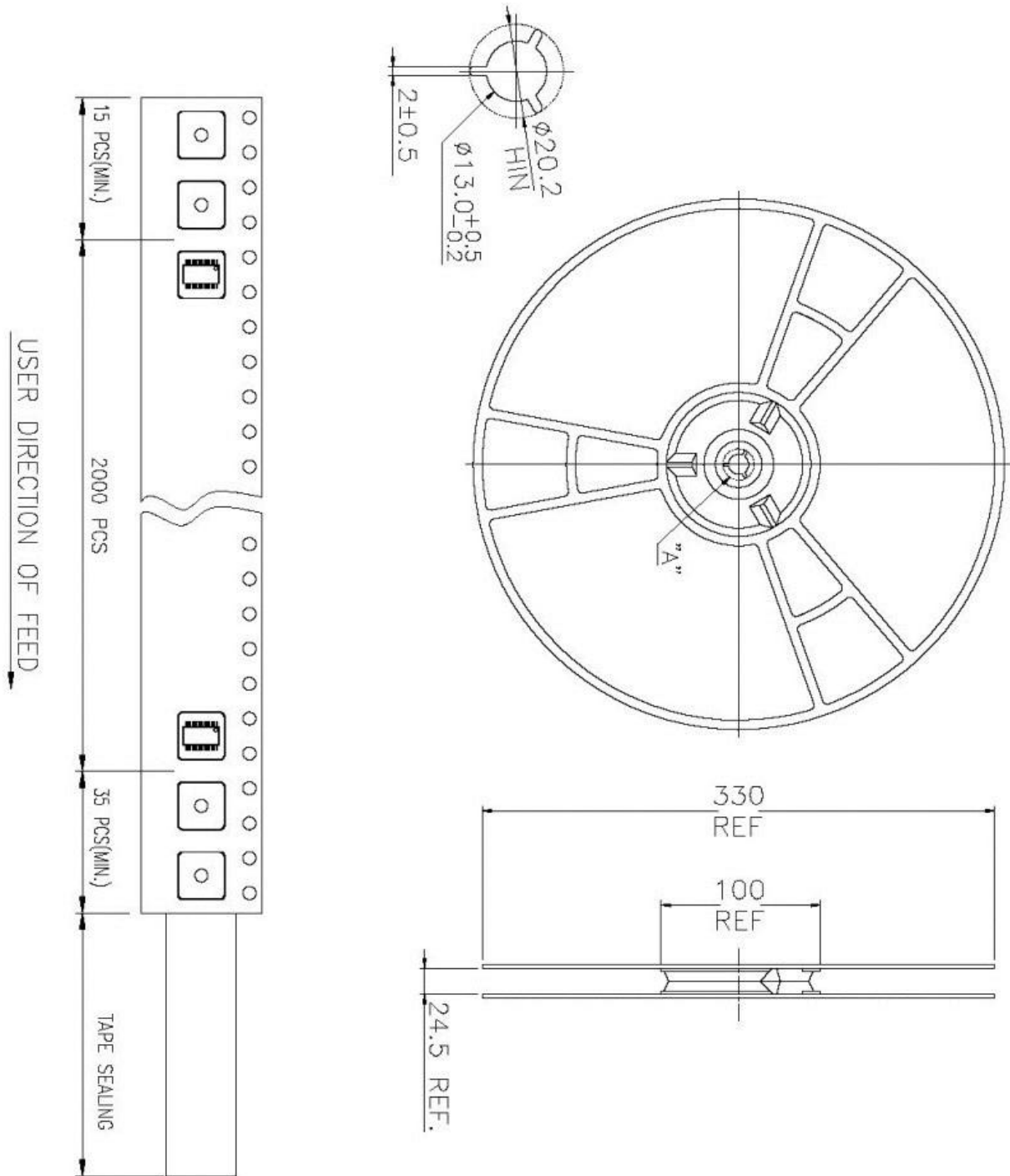


Figure 8.1 – FT232RL and FT245RL Reel Dimensions

9 FT232RL and FT245RL Tube Dimensions

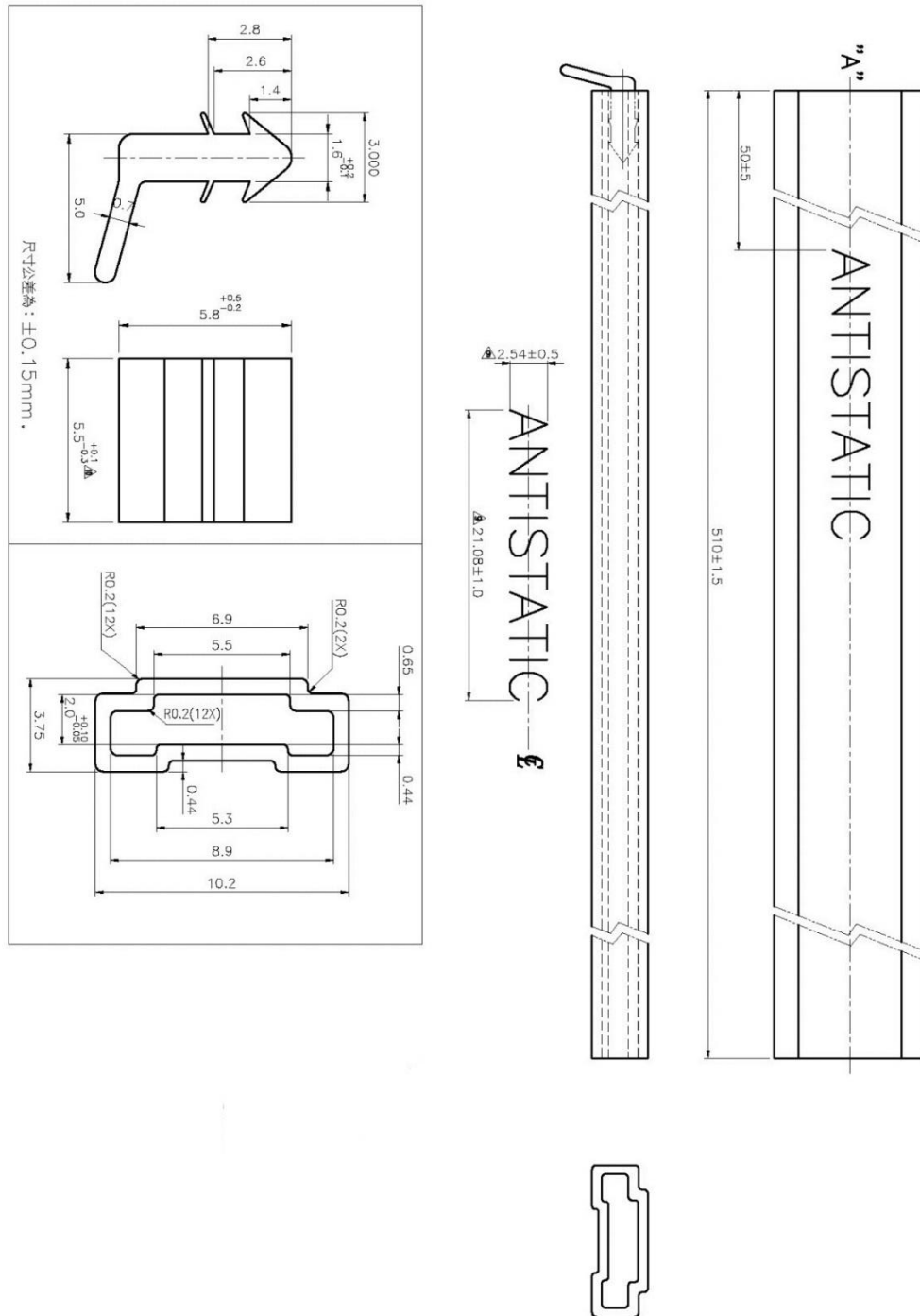


Figure 9.1 – FT232RL and FT245RL Tube Dimensions

10 FT232RQ and FT245RQ Tape Dimensions

Ao	5.25 +/- 0.10
Bo	5.25 +/- 0.10
Ko	1.10 +/- 0.10
F	5.50 +/- 0.10
P1	8.00 +/- 0.10
W	12.00 + 0.3/- 0.0

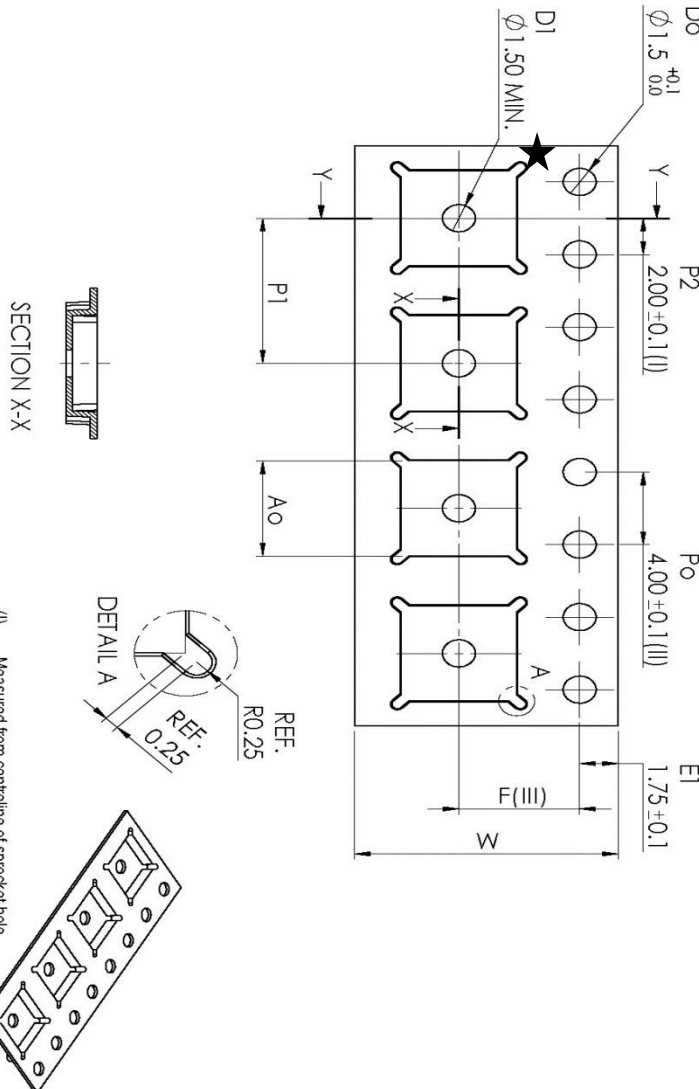
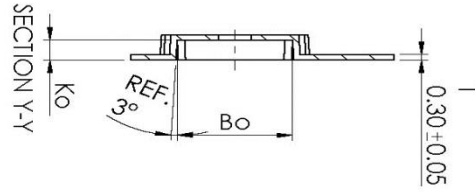


Figure 10.1 – FT232RQ and FT245RQ Tape Dimensions

12 FT232RQ and FT245RQ Tray Dimensions

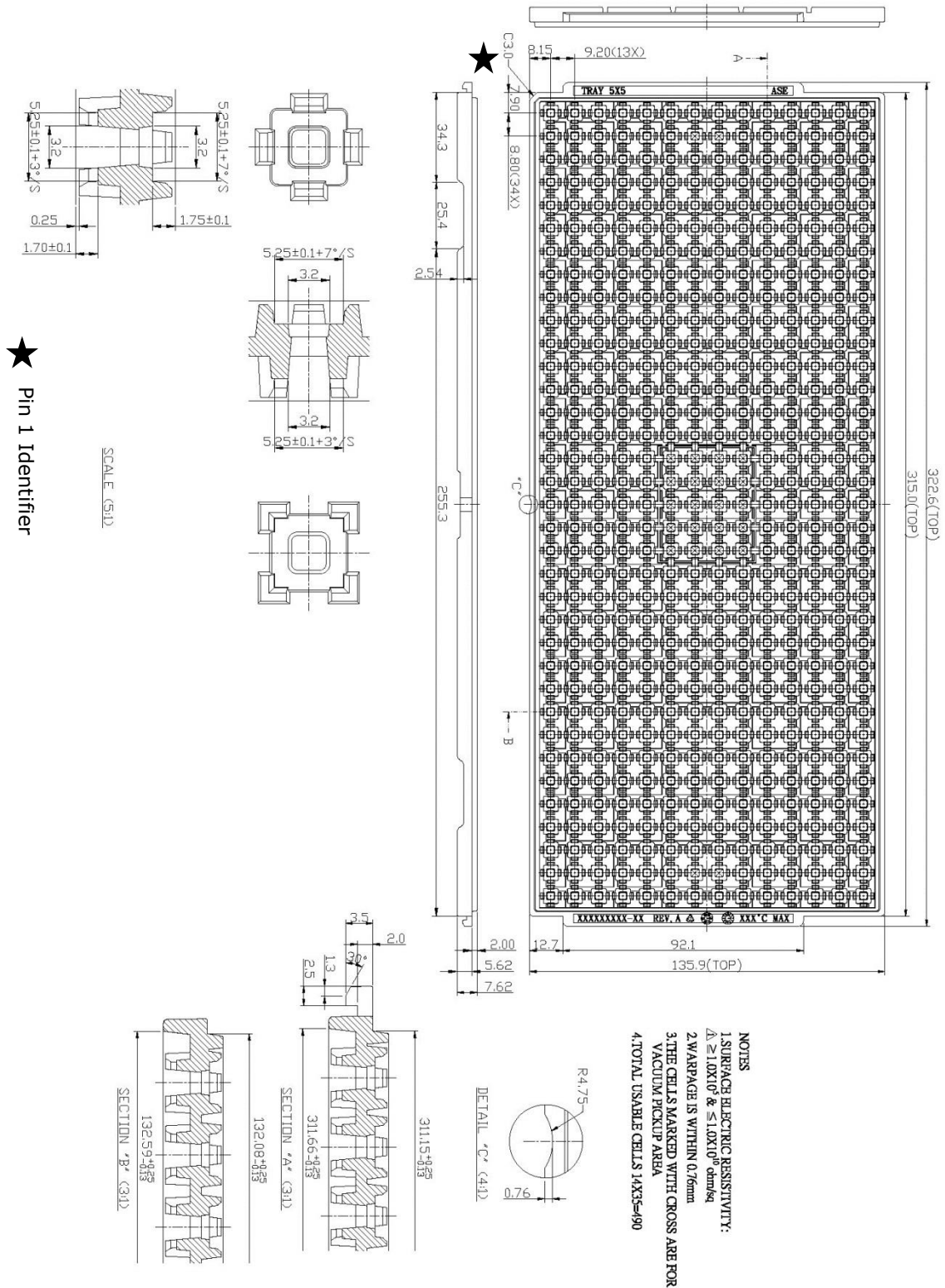


Figure 12.1 FT232RQ and FT245RQ Tray Dimensions

13 FT2232HL and FT4232HL Tape Dimensions

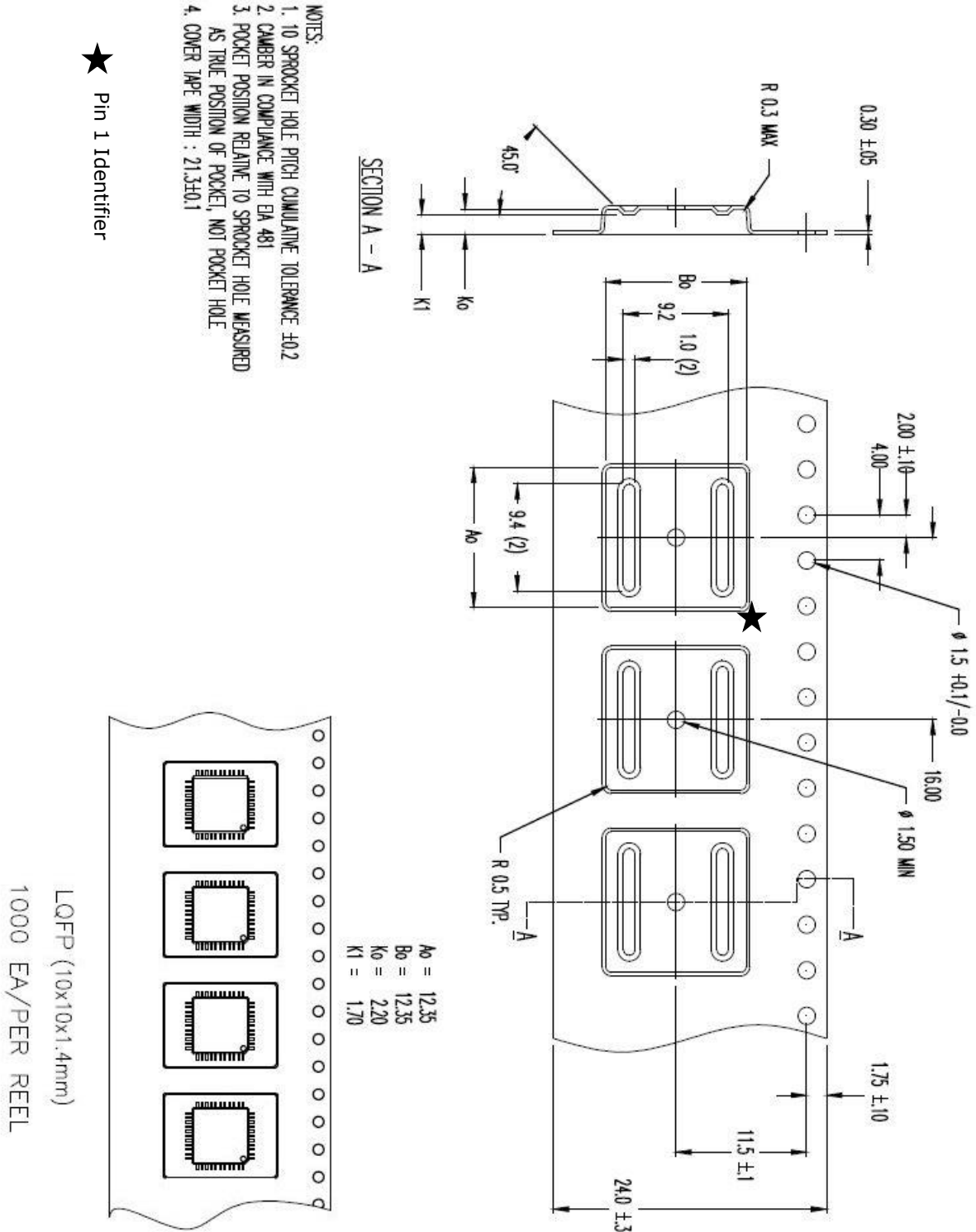


Figure 13.1 – FT2232HL and FT4232HL Tape Dimensions

14 FT2232HL and FT4232HL Reel Dimensions

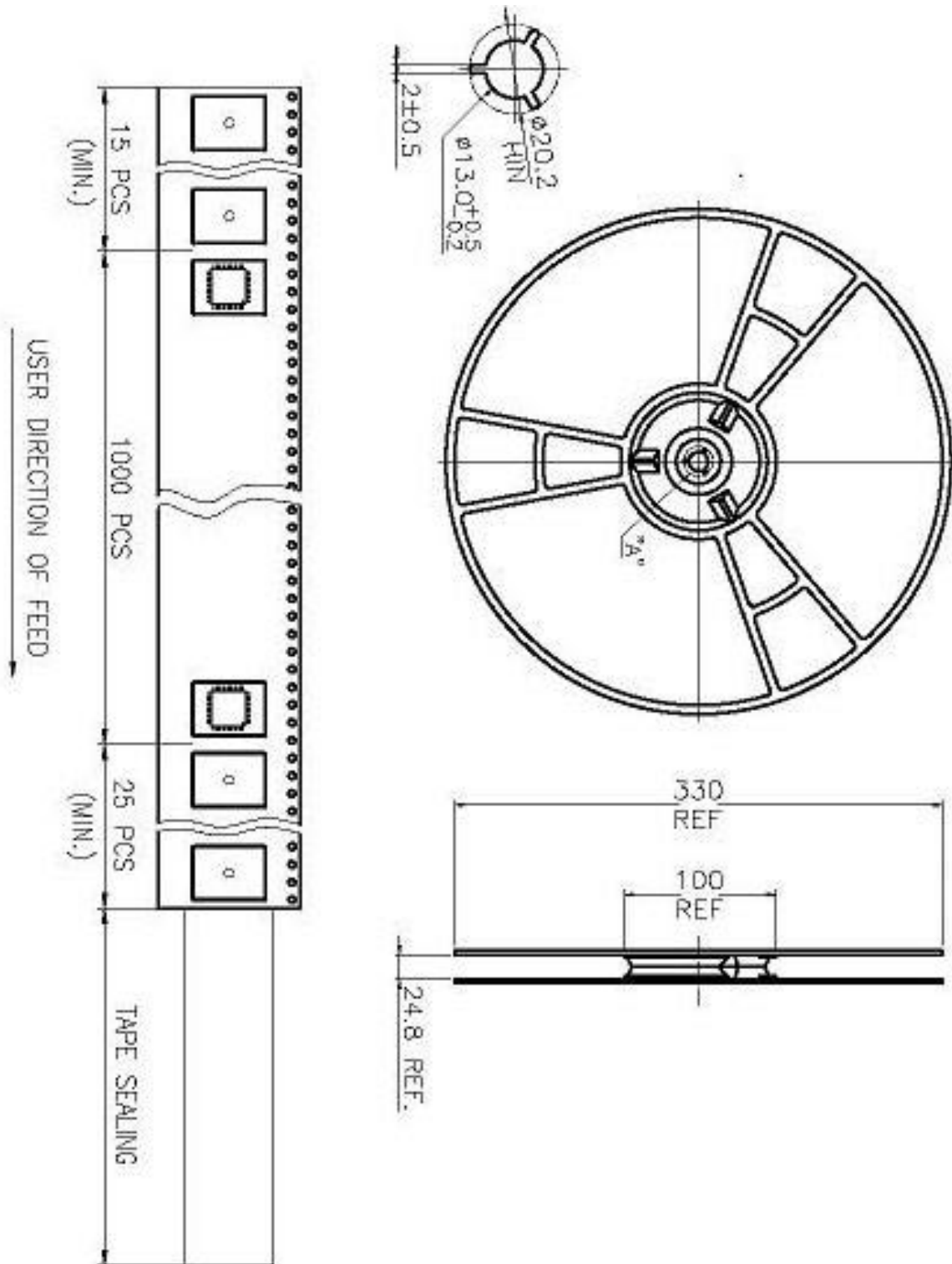


Figure 14.1 – FT2232HL and FT4232HL Reel Dimensions

15 FT2232HL and FT4232HL Tray Dimensions

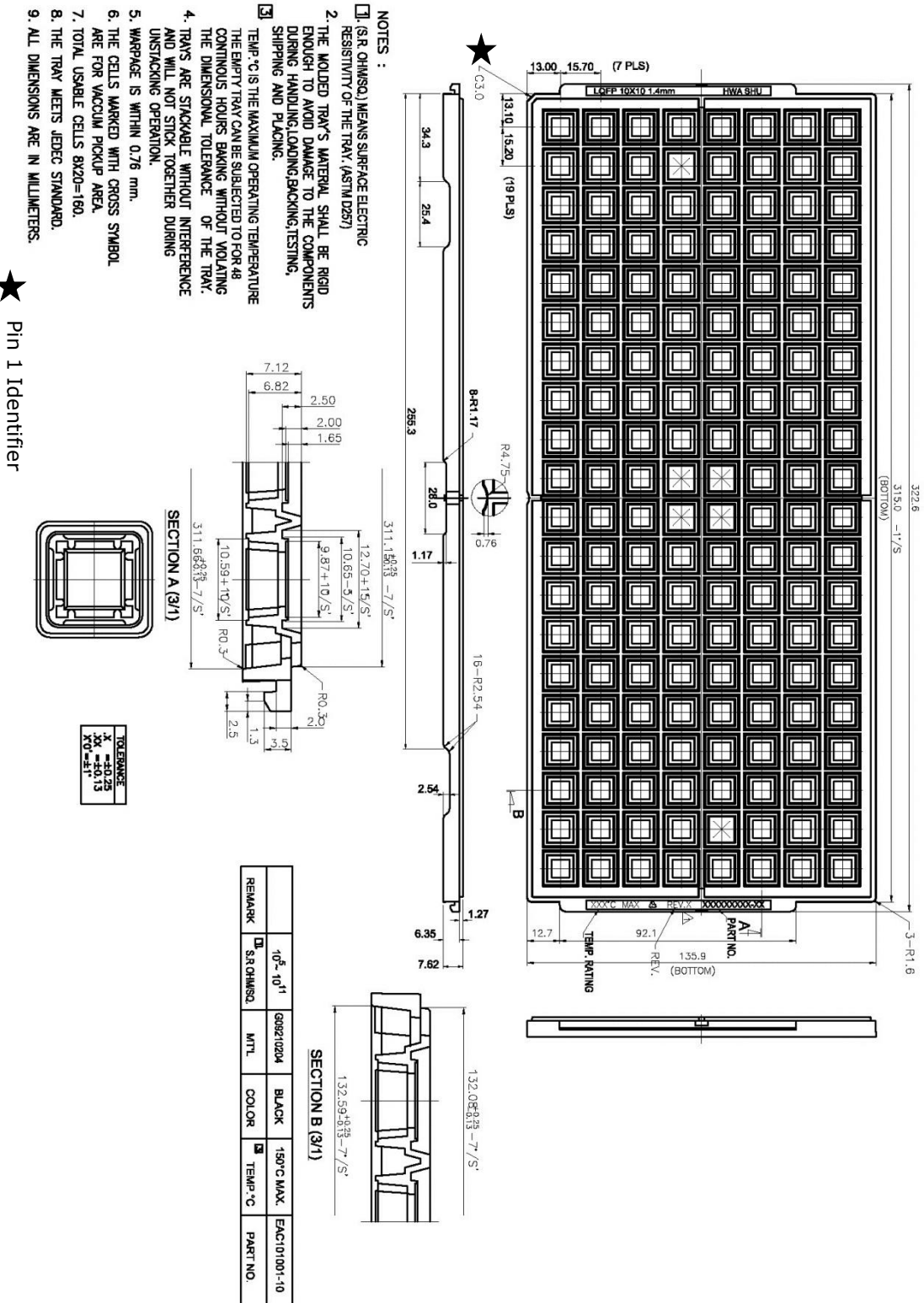


Figure 15.1 FT2232HL and FT4232HL Tray Dimensions

16 FT2232HQ and FT4232HQ Tape Dimensions

- Notes:**
1. 10 sprocket hole pitch cumulative tolerance ± 0.2
 2. Camber not to exceed 1mm in 100mm.
 3. Material: Black Advantek Polystyrene.
 4. A_0 and B_0 measured on a plane 0.3mm above the bottom of the pocket.
 5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
 6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

★ Pin 1 Identifier

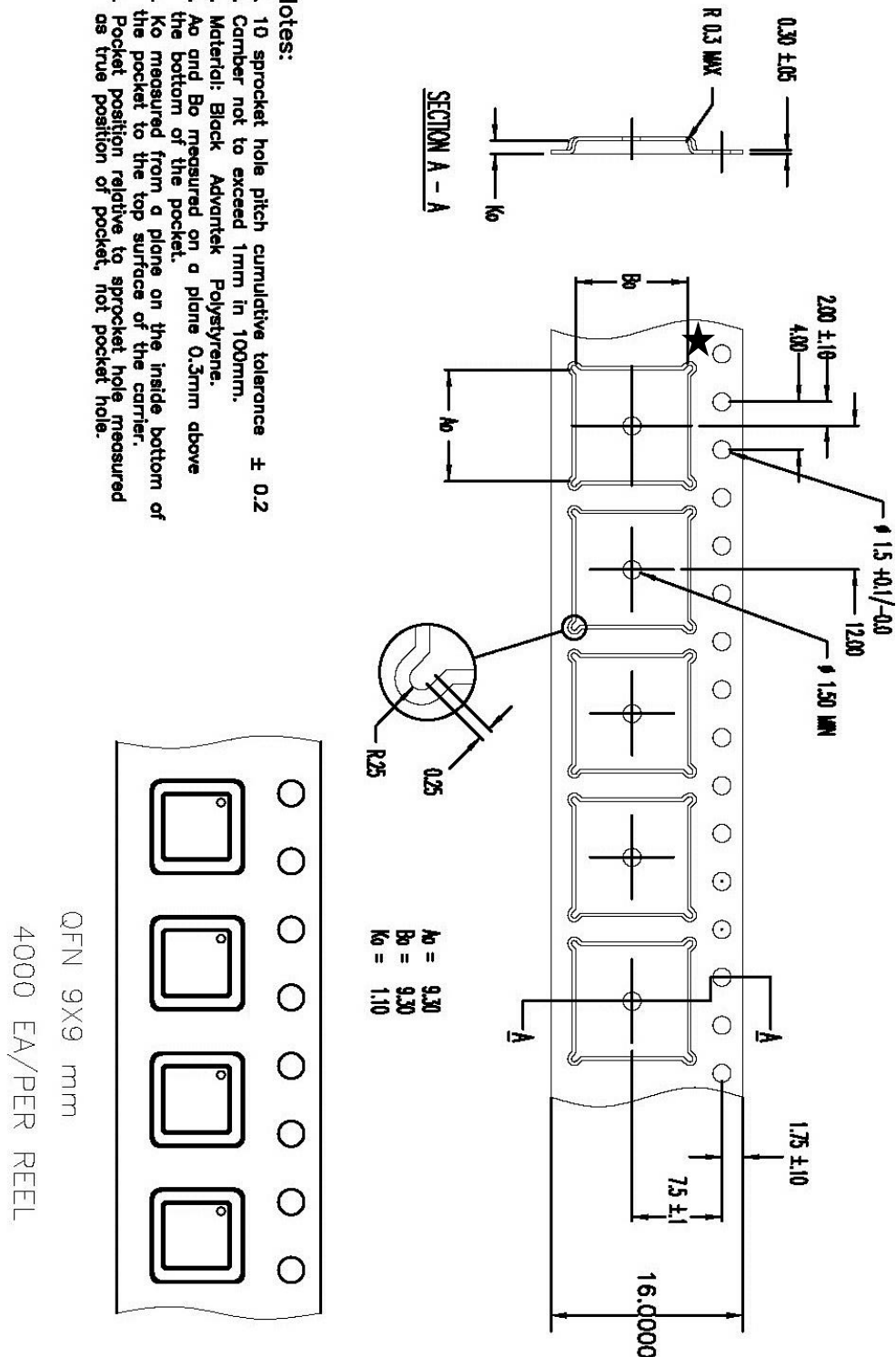


Figure 16.1 - FT2232HQ and FT4232HQ Tape Dimensions

17 FT2232HQ and FT4232HQ Reel Dimensions

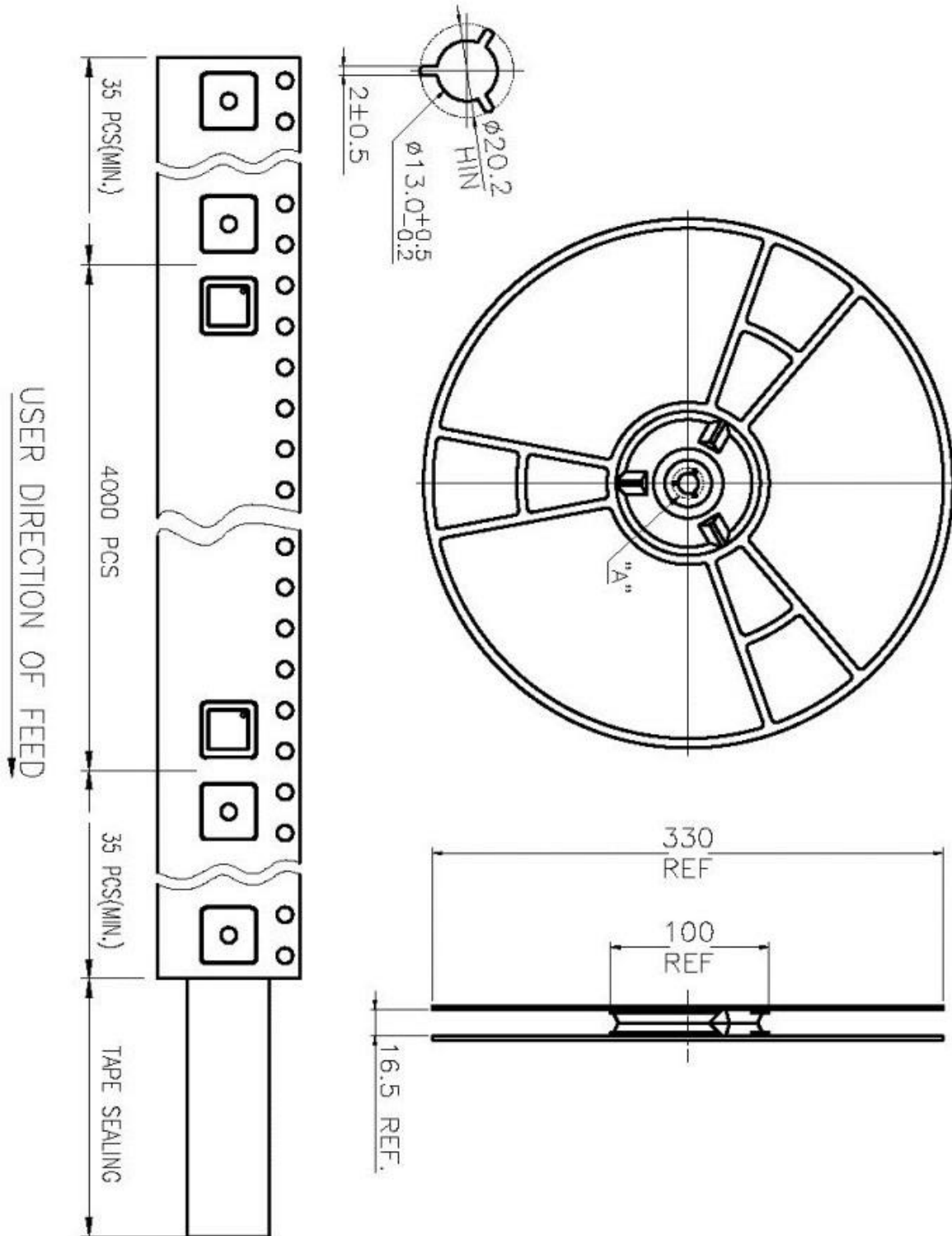


Figure 17.1 – FT2232HQ and FT4232HQ Reel Dimensions

18 FT2232HQ and FT4232HQ Tray Dimensions

★ Pin 1 Identifier

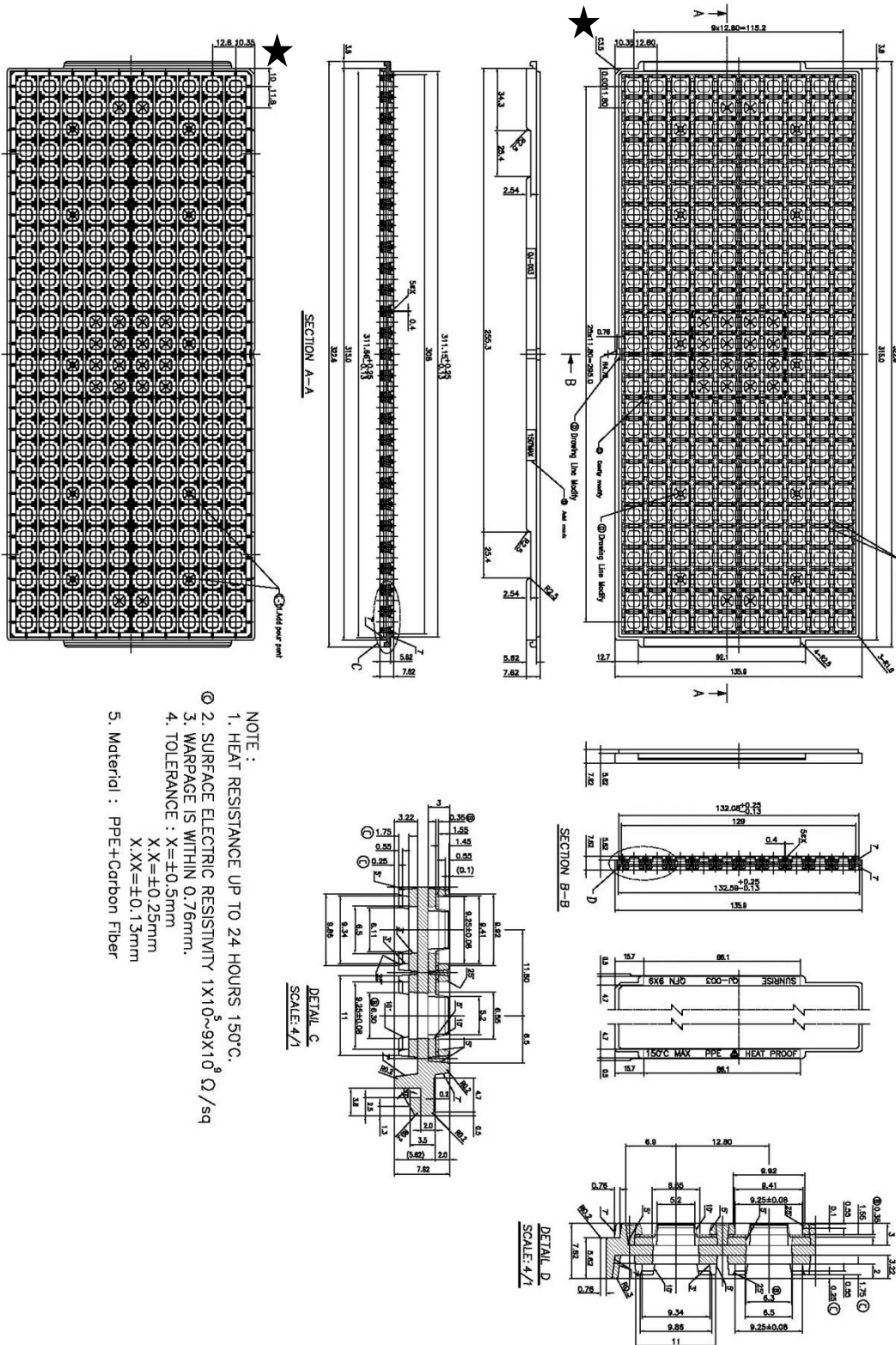


Figure 18.1 FT2232HQ and FT4232HQ Tray Dimensions

19 FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Reel Dimensions

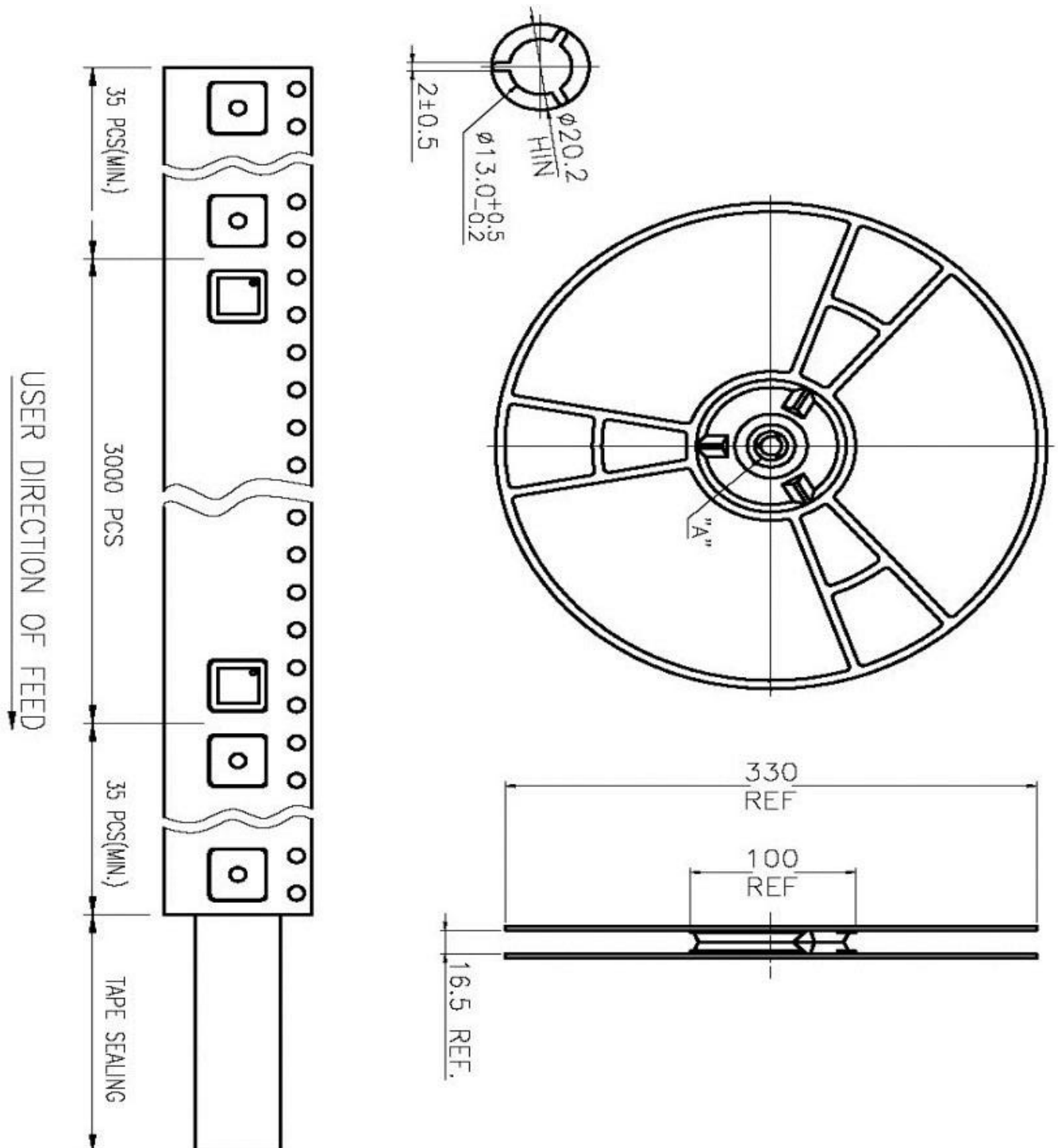
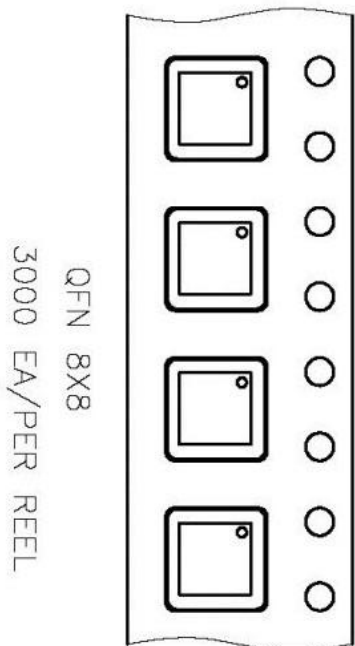


Figure 19.1– FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Reel Dimensions

20 FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Tape Dimensions

★ Pin 1 Identifier

- Notes:
1. 10 sprocket hole pitch cumulative tolerance ± 0.2
 2. Camber not to exceed 1mm in 100mm.
 3. Material: Black Advantek Polystyrene.
 4. A_0 and B_0 measured on a plane 0.3mm above the bottom of the pocket.
 5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
 6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.



$A_0 = 8.30$
 $B_0 = 8.30$
 $K_0 = 1.10$

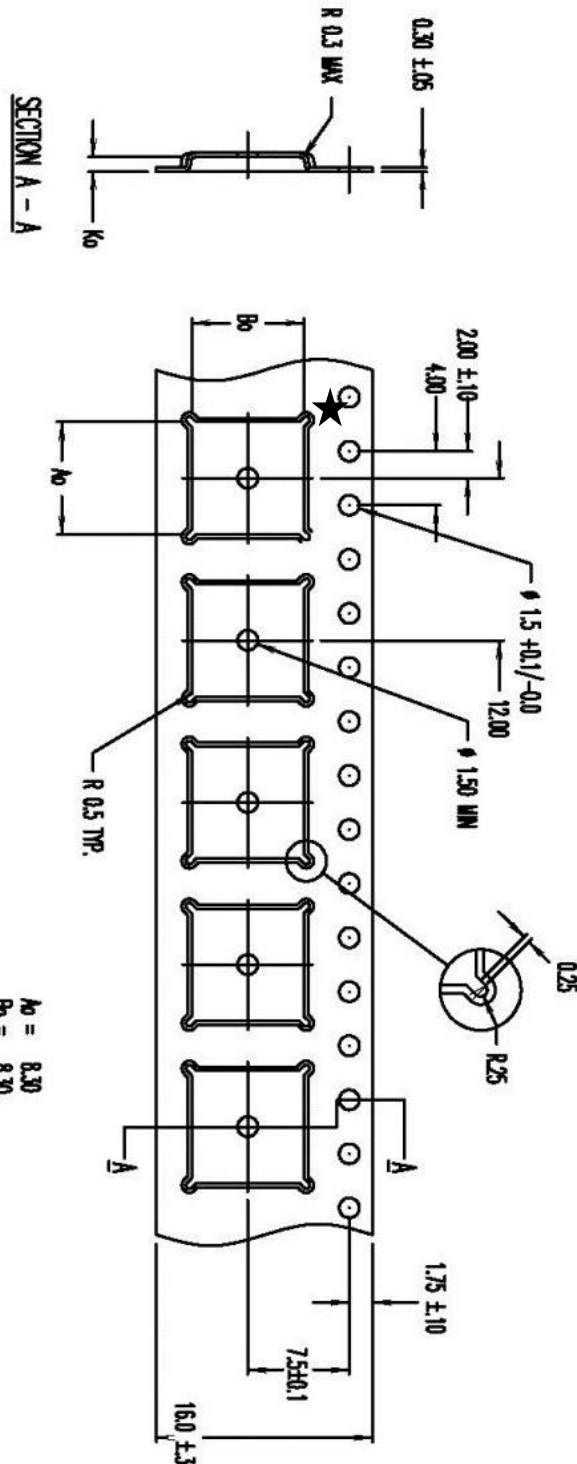


Figure 20.1 - FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Tape Dimensions

21 FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Tray Dimensions

- NOTES:
1. CSR DW/SDL MEANS SURFACE ELECTRIC RESISTIVITY OF THE TRAY.
 2. THE MOLDED TRAY'S MATERIAL SHALL BE RIGID ENOUGH TO AVOID DAMAGE TO THE COMPONENTS DURING HANDLING, LOADING, UNLOADING, TESTING, SHIPPING AND PLACING.
 3. TRAYS ARE STACKABLE WITHOUT INTERFERENCE AND WILL NOT STICK TOGETHER DURING UNSTACKING OPERATION.
 4. VARIAGE IS WITHIN 0.26 mm.
 5. THE CELLS MARKED WITH CROSS SYMBOL ARE FOR VACUUM PICKUP AREA AND WITHOUT THRU HOLES.
 6. TOTAL USABLE CELLS 1024-56Q.
 7. ALL DIMENSIONS ARE IN MILLIMETERS.

★ Pin 1 Identifier

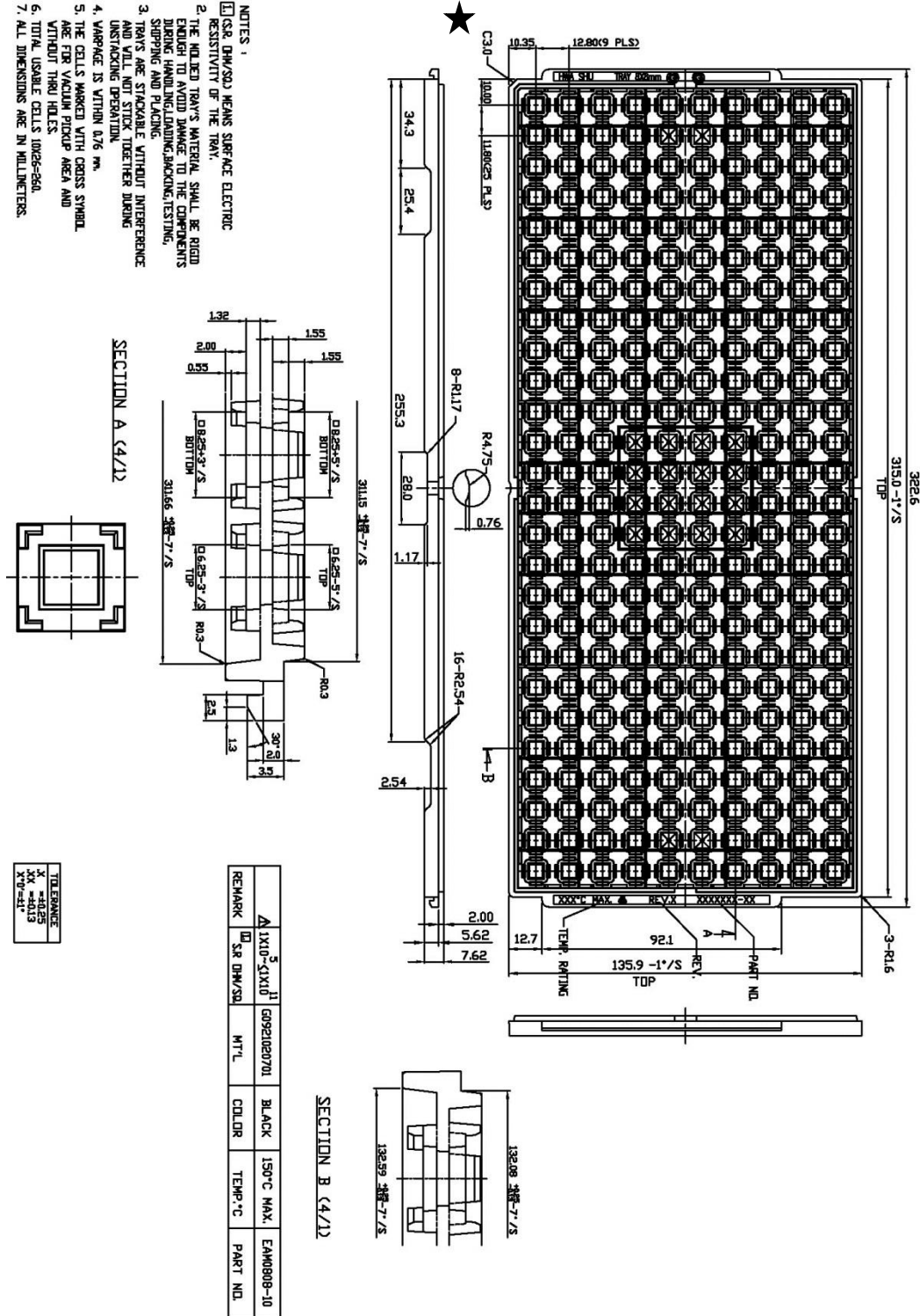


Figure 21.1 – FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Tray Dimensions

22 VNC1L – A – Reel Vendor Part No. RD33008SW

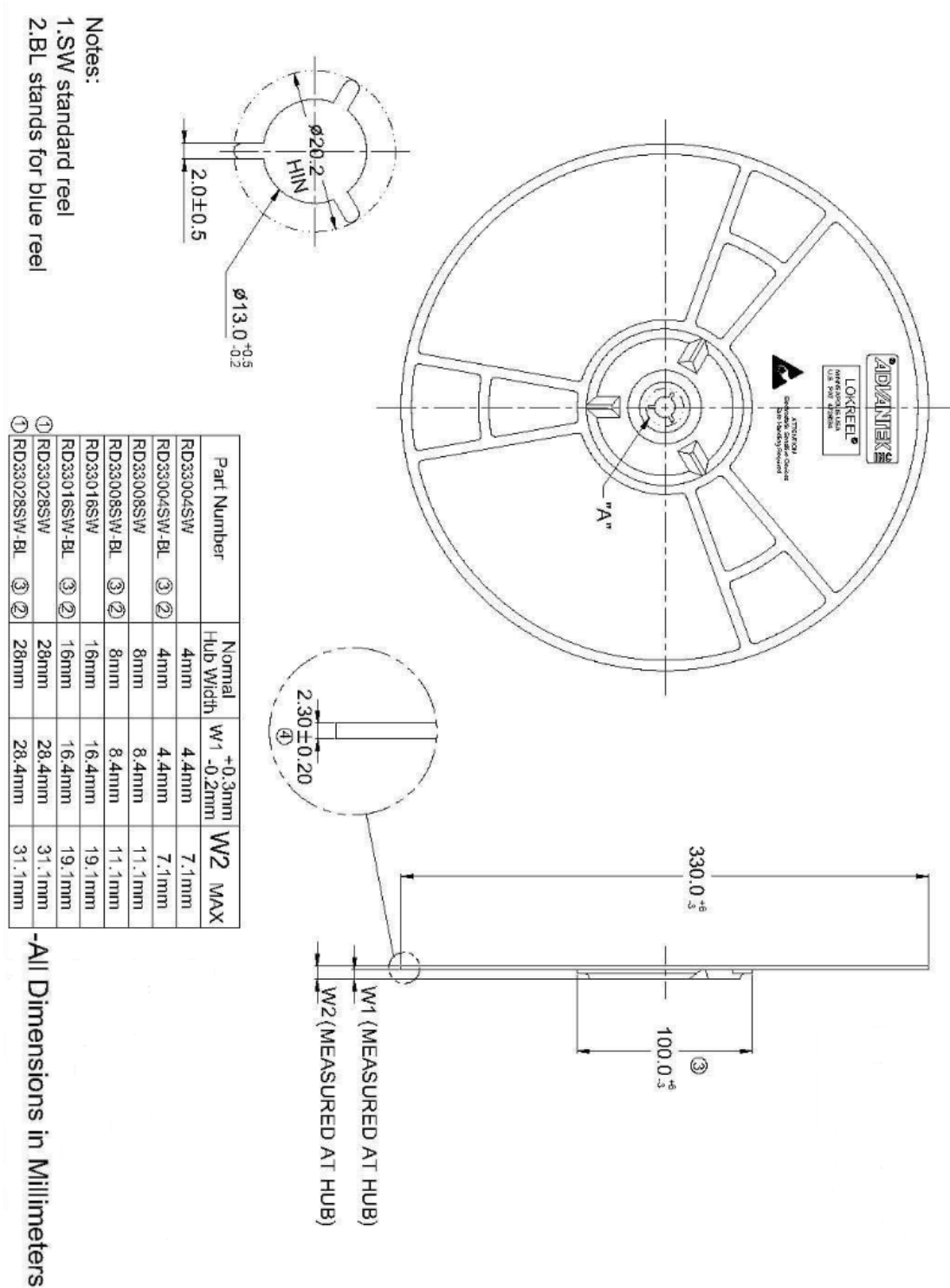


Figure 22.1 – VNC1L – A – Reel Vendor Part No. RD33008SW

23 VNC1L – A – Cover Tape Vendor Part No. AA13305NP

- NOTE:**
1. REEL TO CONTAIN 300 METERS OF SPLICE FREE MATERIAL.
 2. MATERIAL: POLYESTER FILM WITH ANTISTATIC COATING AND ADHESIVE COATING.
 3. COLOR: TRANSPARENT, NATURAL.

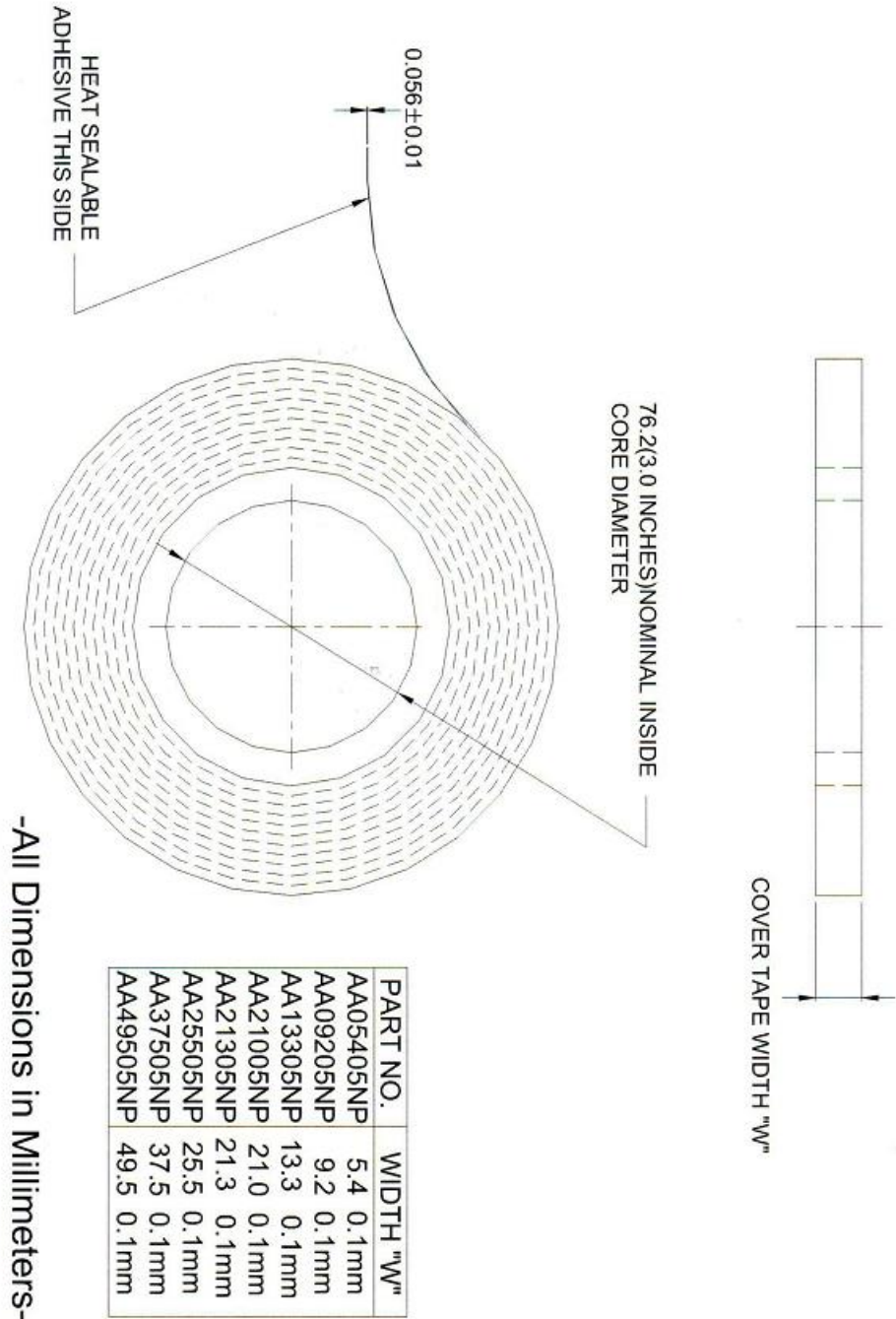


Figure 23.1 – VNC1L – A – Cover Tape Vendor Part No. AA13305NP

24 VNC1L - A - Carrier Tape Vendor Part No. Q07X07-A

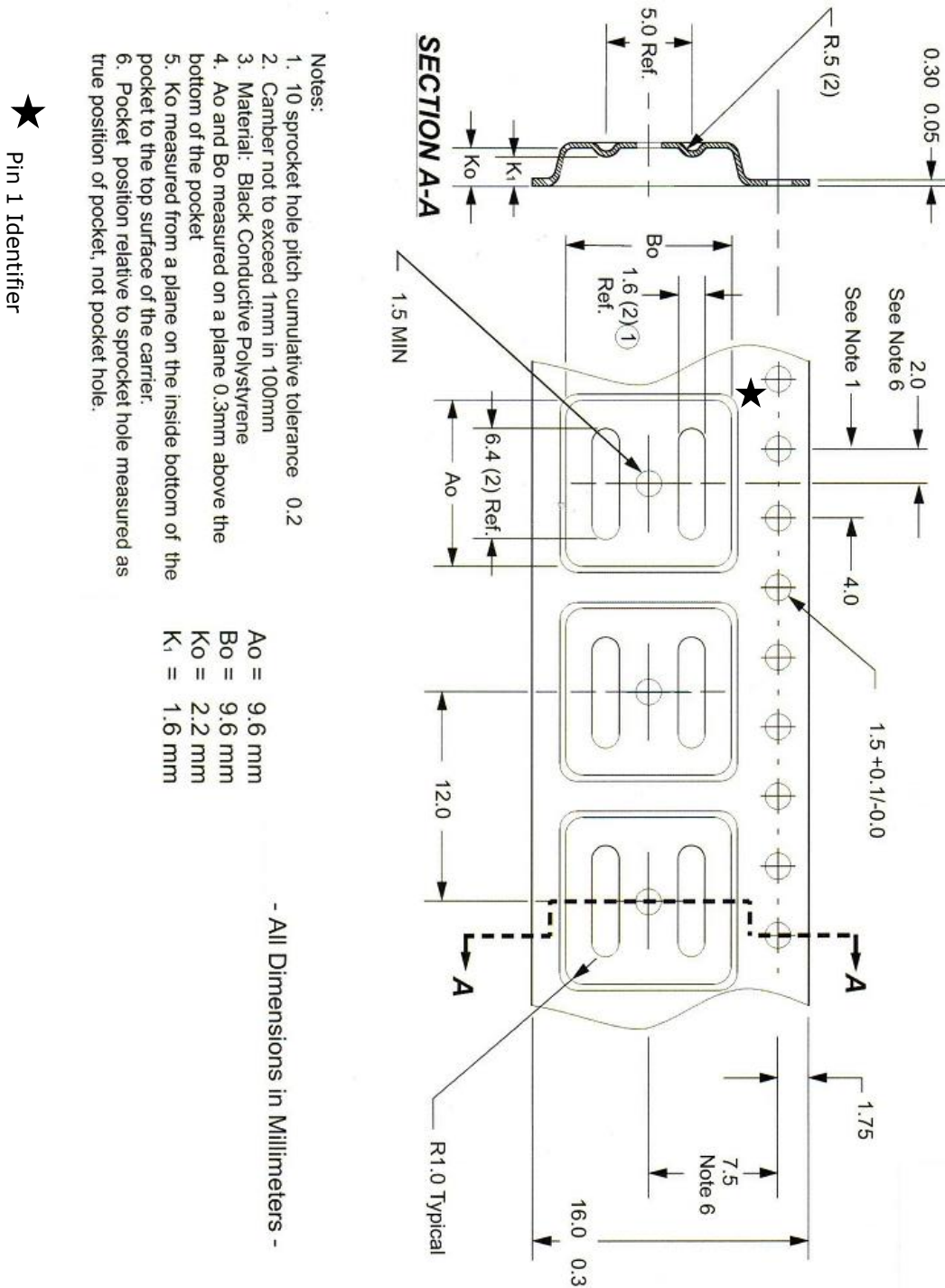


Figure 24.1 - VNC1L - A - Carrier Tape Vendor Part No. Q07X07-A

25 FT311D-32L1C, FT312D-32L1C, VNC2-32L1C –LQFP Reel Dimensions

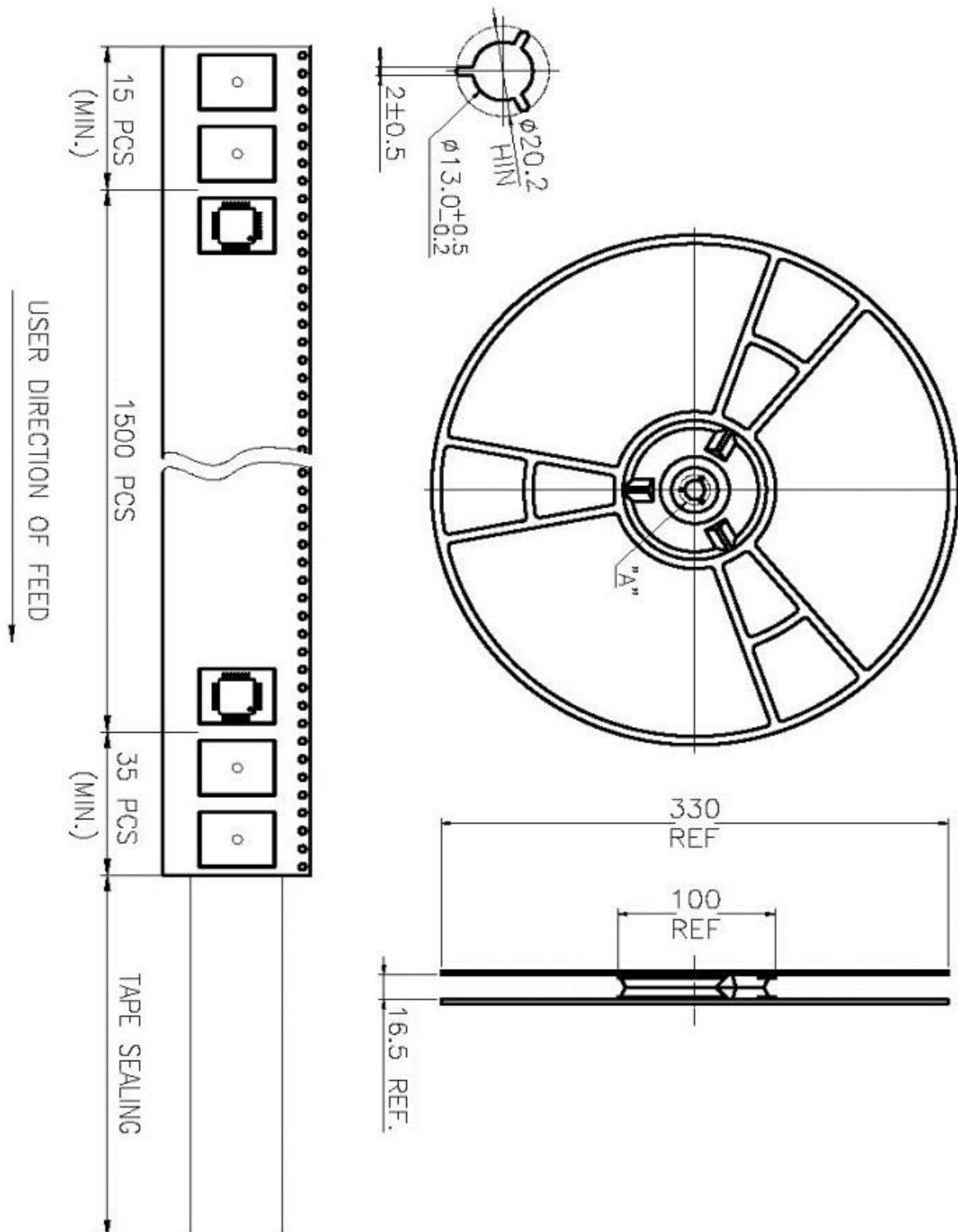


Figure 25.1 – FT311D-32L1C, FT312D-32L1C, VNC2-32L1C – LQFP Reel Dimensions

26 FT311D-32L1C, FT312D-32L1C, VNC2-32L1C - LQFP Carrier Tape Dimensions

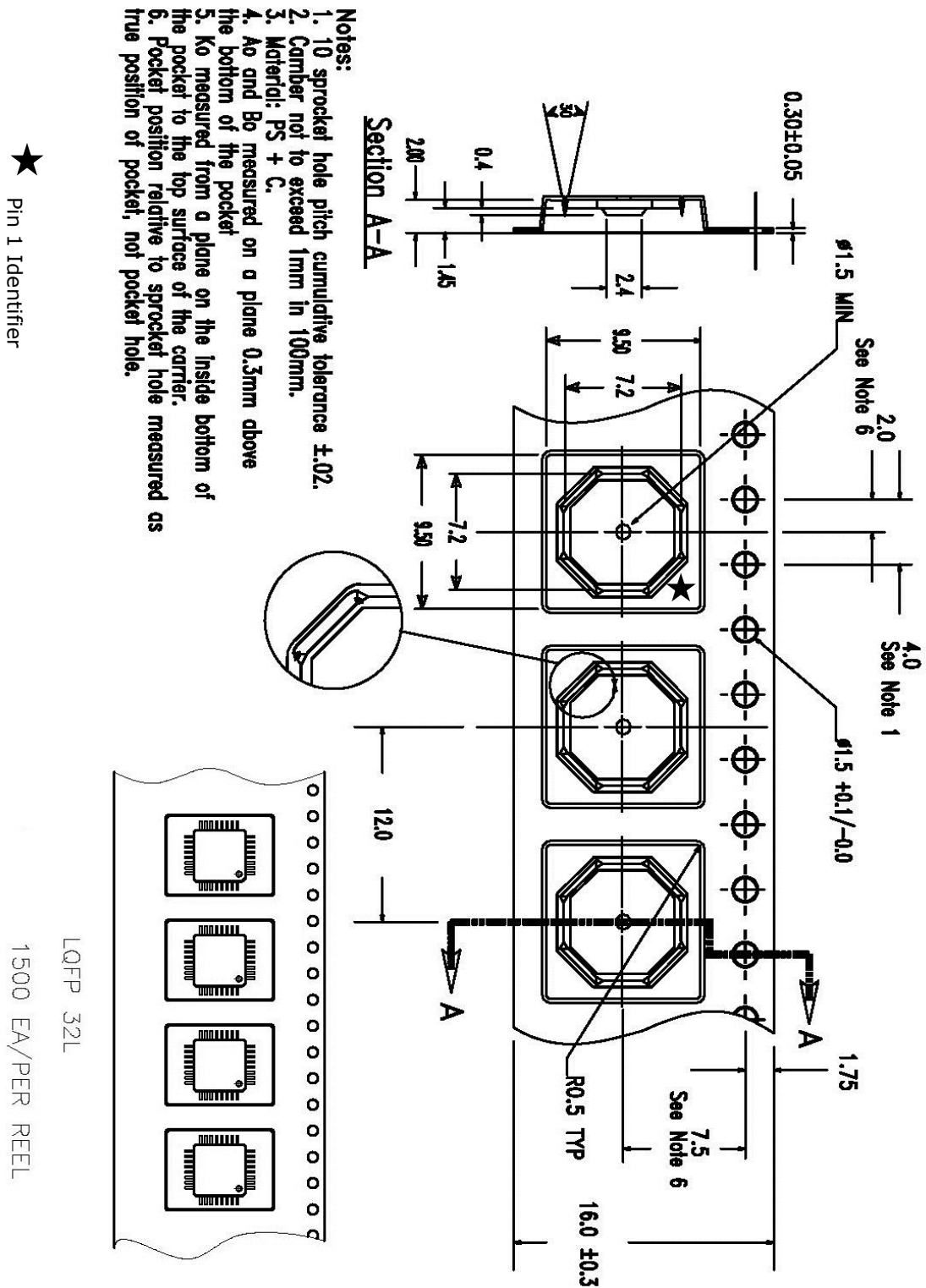


Figure 26.1 - FT311D-32L1C, FT312D-32L1C, VNC2-32L1C - LQFP Carrier Tape Dimensions

27 VNC2-48L1C, FT232HL – LQFP Reel Dimensions

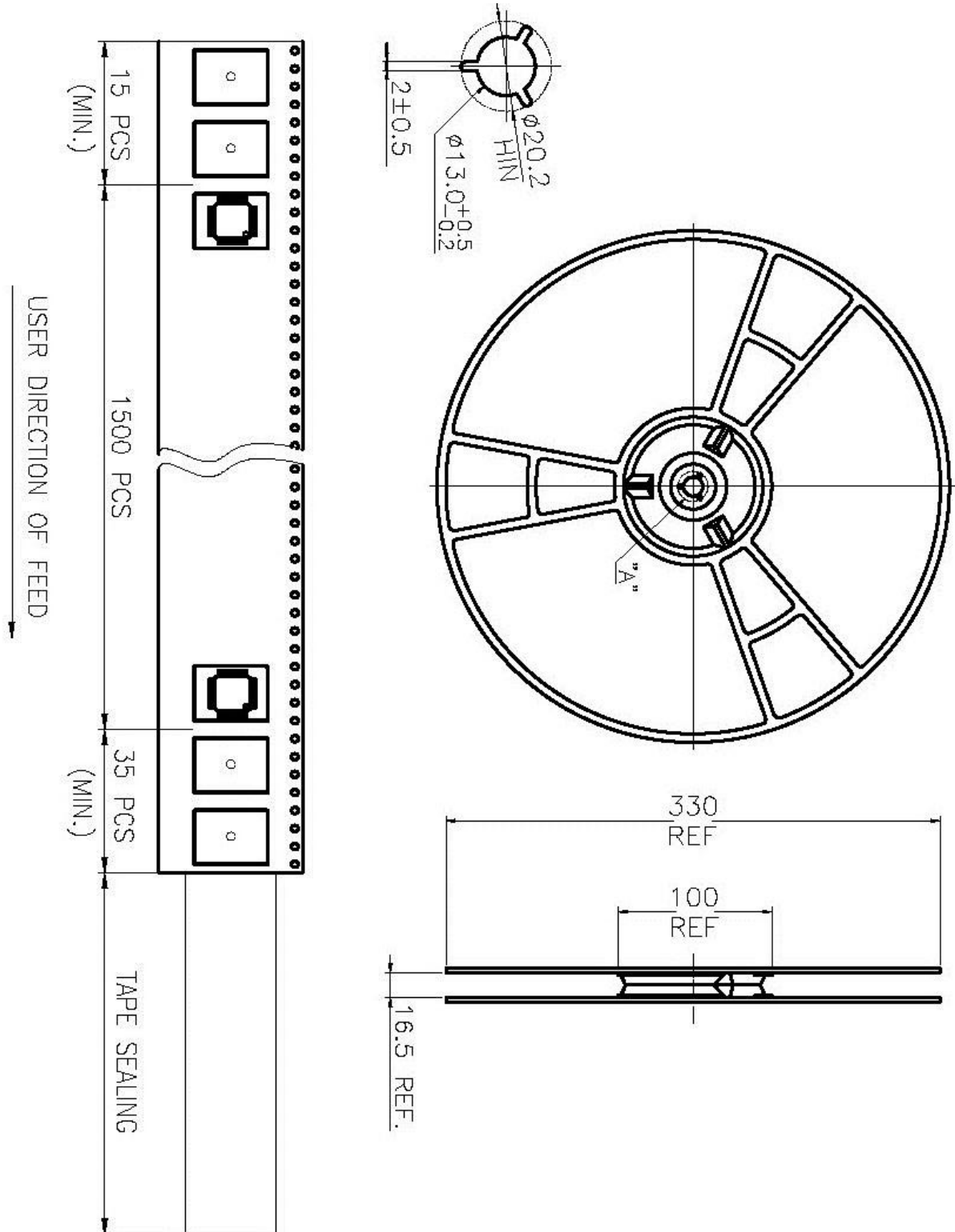
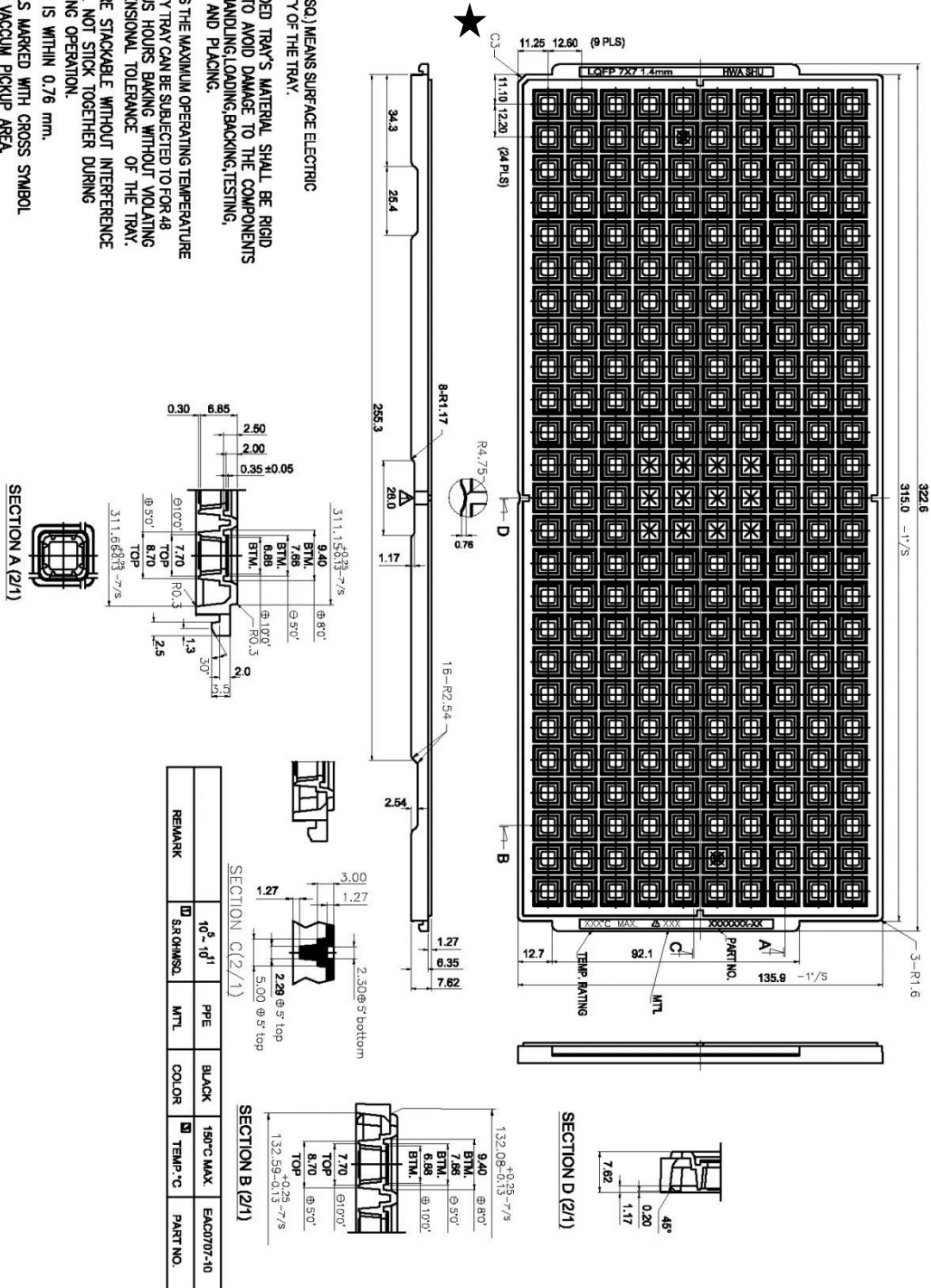


Figure 27.1 - VNC2-48L1C, FT232HL – LQFP Reel Dimensions

29 FT311D-32L1C, FT312D-32L1C, VNC2-32L1C, VNC2-48L1C, FT232HL - LQFP Tray Dimensions

- NOTES :
1. (S.R. OHMS/O.) MEANS SURFACE ELECTRIC RESISTIVITY OF THE TRAY.
 2. THE MOLDED TRAY'S MATERIAL SHALL BE RIGID ENOUGH TO AVOID DAMAGE TO THE COMPONENTS DURING HANDLING, LOADING, BACKING, TESTING, SHIPPING AND PLACING.
 3. TEMP. C IS THE MAXIMUM OPERATING TEMPERATURE THE EMPTY TRAY CAN BE SUBJECTED TO FOR 48 CONTINUOUS HOURS BAKING WITHOUT VIOLATING THE DIMENSIONAL TOLERANCE OF THE TRAY.
 4. TRAYS ARE STACKABLE WITHOUT INTERFERENCE AND WILL NOT STICK TOGETHER DURING UNSTACKING OPERATION.
 5. WARPAGE IS WITHIN 0.76 mm.
 6. THE CELLS MARKED WITH CROSS SYMBOL ARE FOR VACUUM PICKUP AREA.
 7. TOTAL USABLE CELLS 10x25=250.
 8. THE TRAY MEETS JEDEC STANDARD.



★ Pin 1 Identifier

Figure 29.1- FT311D-32L1C, FT312D-32L1C, VNC2-32L1C, VNC2-48L1C, FT232HL - LQFP Tray Dimensions

30 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C –QFN Reel Dimensions

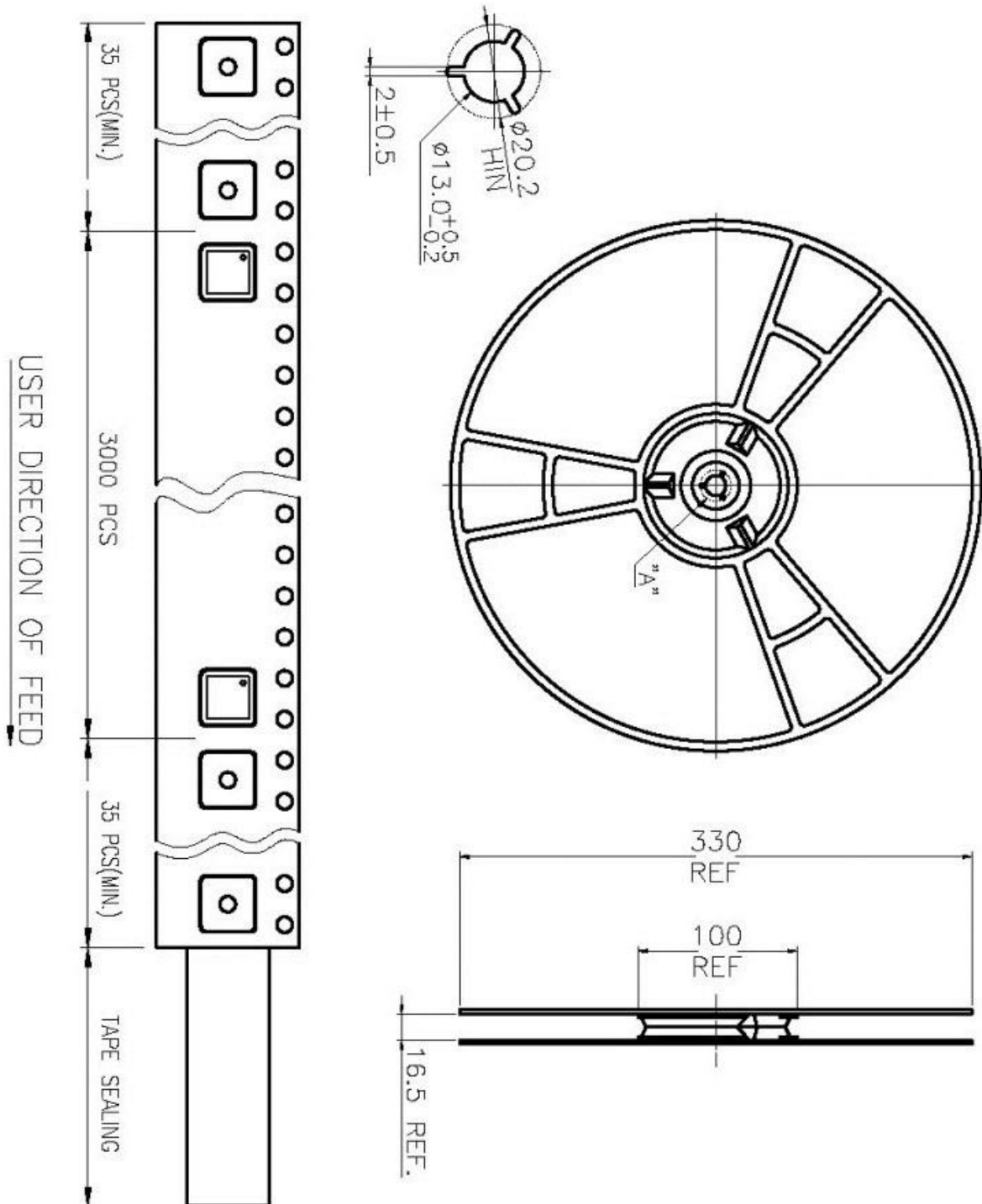


Figure 30.1 - FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C –QFN Reel Dimensions

31 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C – QFN Carrier Tape Dimensions

- NOTES:
1. DIM IN MM.
 2. 10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE ± 0.2 .
 3. CAMBER NOT TO EXCEED 1 MM IN 100 MM.
 4. POCKET POSITION RELATIVE TO SPROCKET HOLE MEASURED AS TRUE POSITION OF POCKET, NOT POCKET HOLE.
 5. SURFACE RESISTIVITY LESS THAN OR EQUAL TO 1.0×10^7 OHMS/SQ.

★ Pin 1 Identifier

QFN (7X7)
 3000 EA/PER REEL

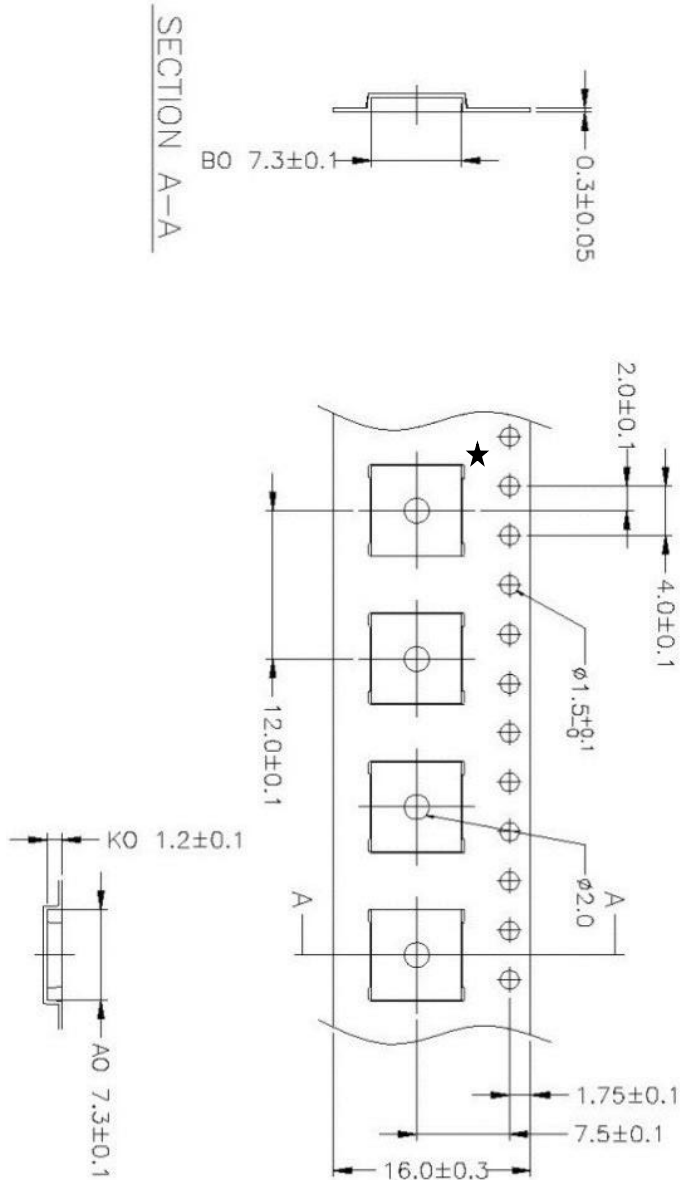
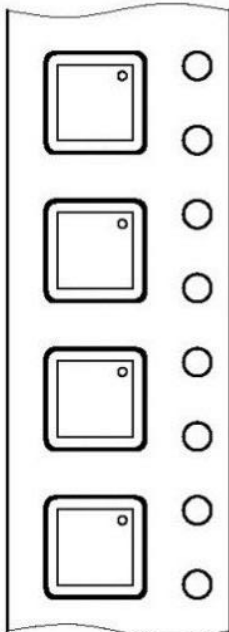


Figure 31.1 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C – QFN Carrier Tape Dimensions

32 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C – QFN Tray Dimensions

★ Pin 1 Identifier

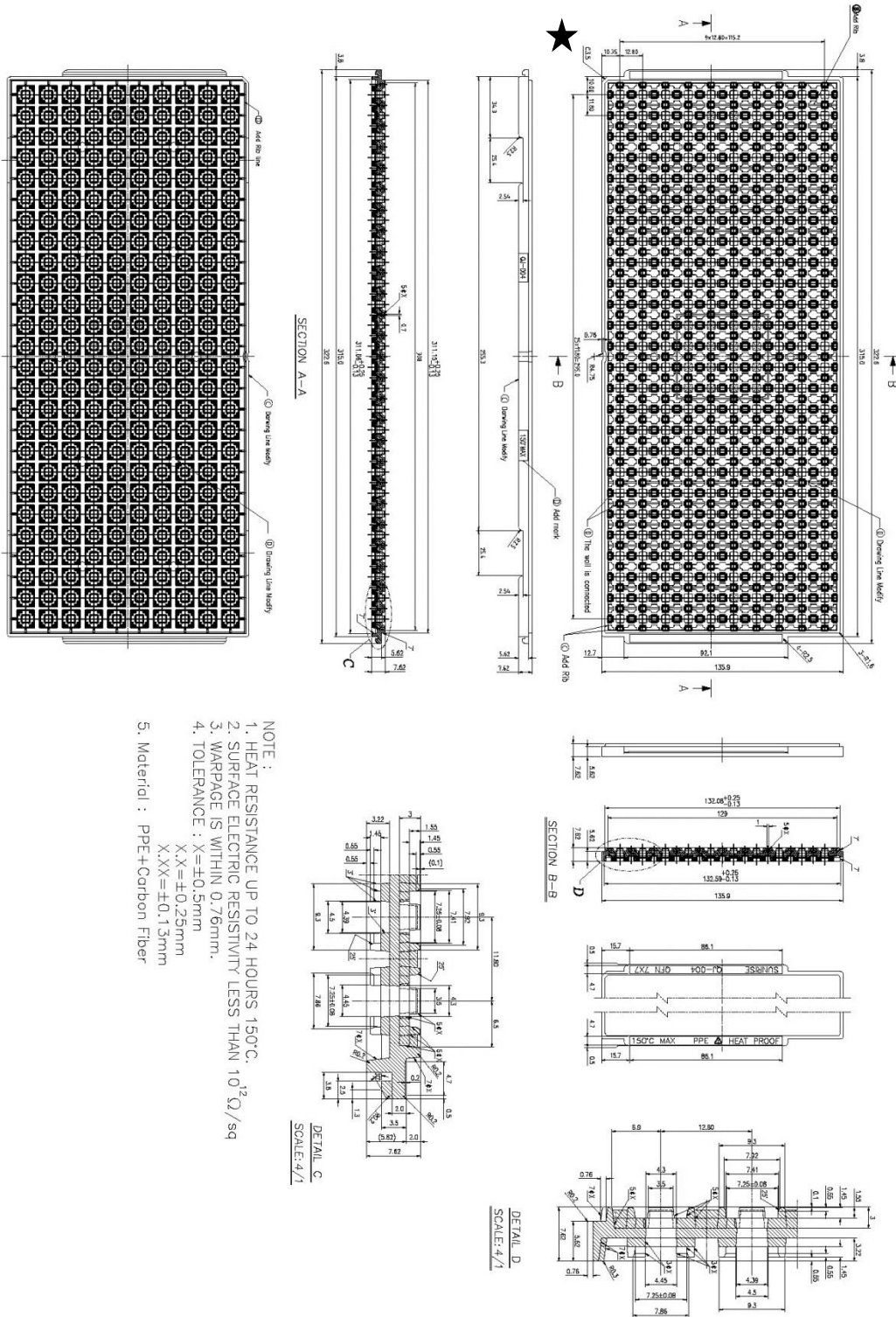


Figure 32.1 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C – QFN Tray Dimensions

33 FT200XD, FT234XD Reel Dimensions

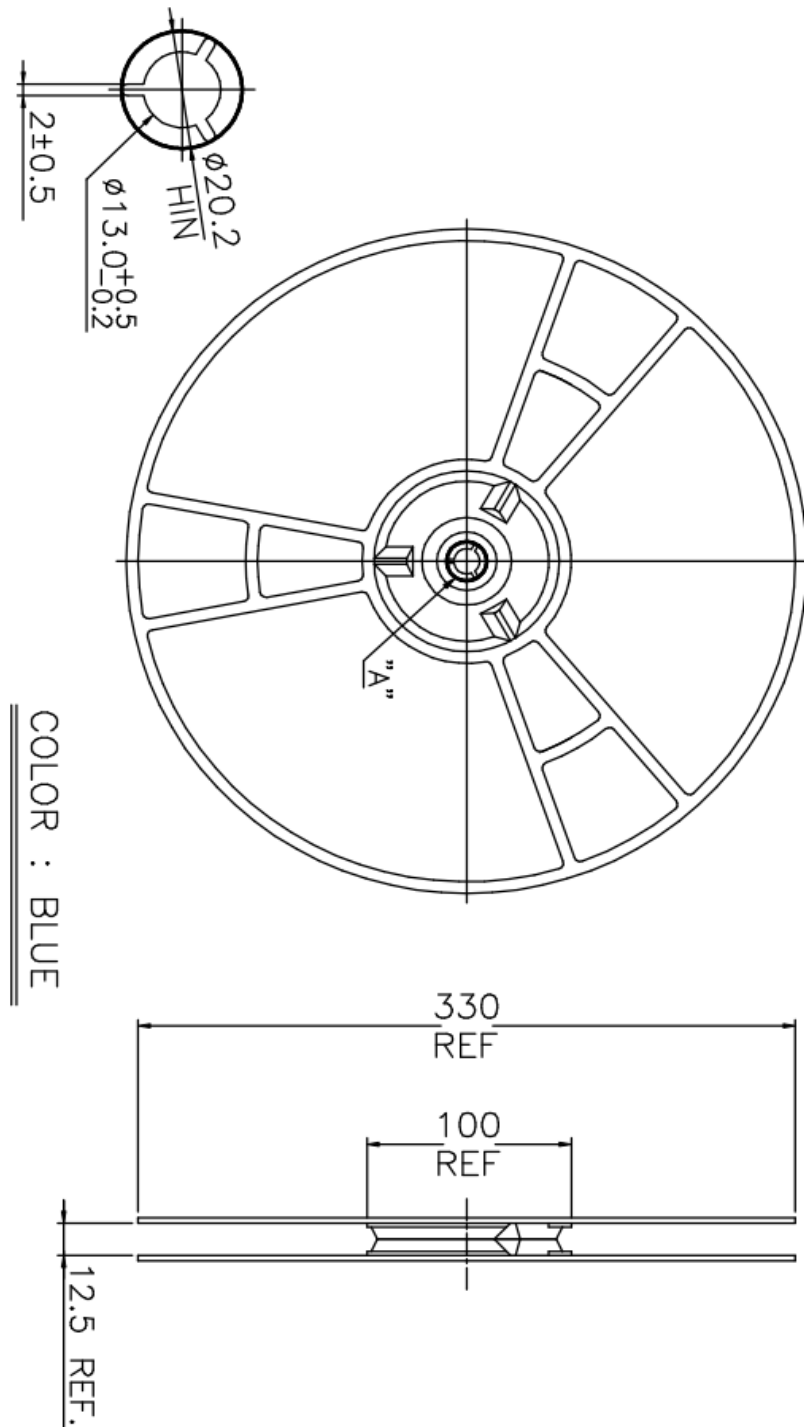


Figure 33.1 FT200XD, FT234XD Reel Dimensions

35 FT201XQ, FT220XQ, FT221XQ, FT230XQ, FT231XQ, FT240XQ QFN Reel Dimensions

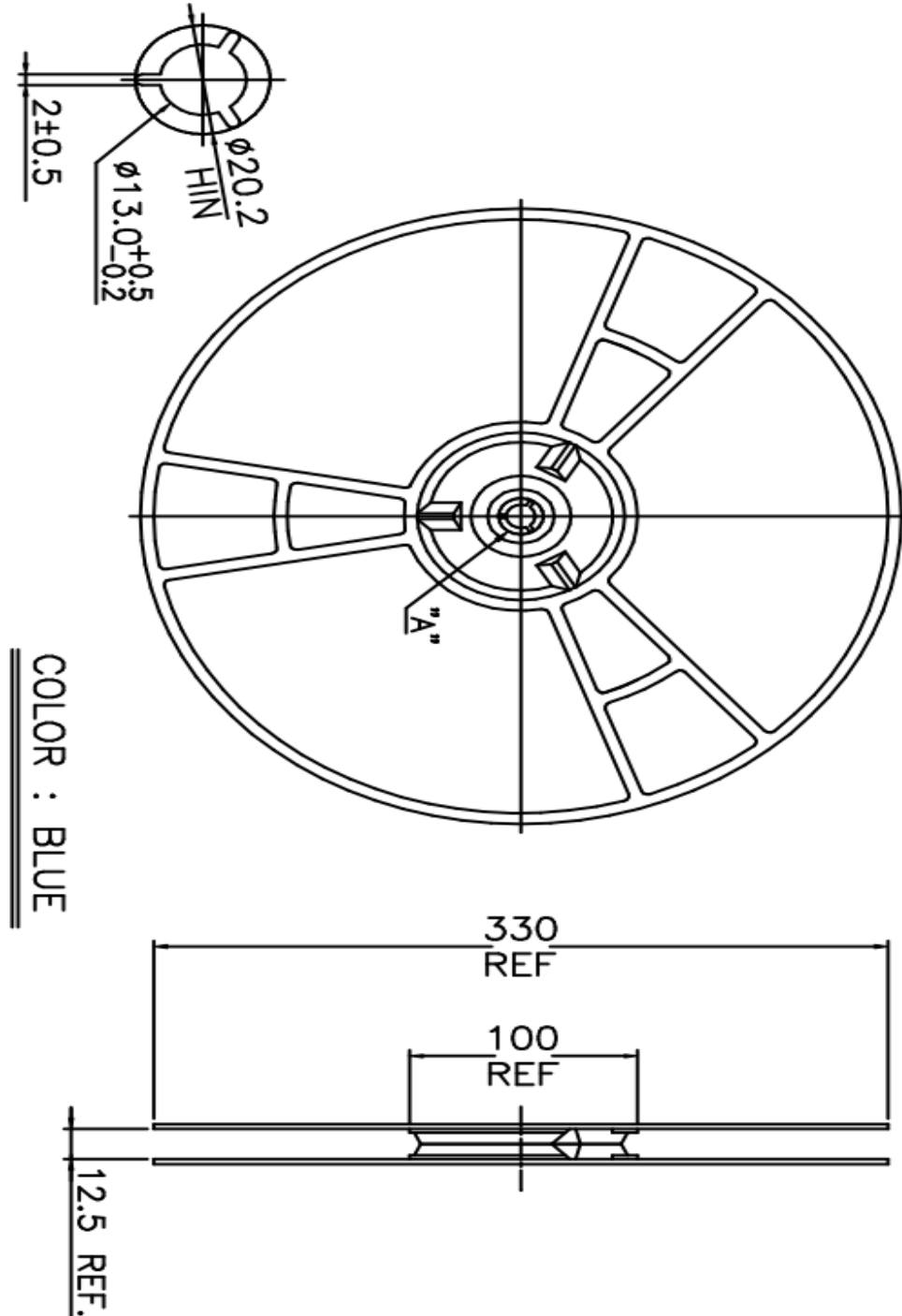


Figure 35.1 FT201XQ, FT220XQ, FT221XQ, FT230XQ, FT231XQ, FT240XQ QFN Reel Dimensions

36 FT201XQ, FT220XQ, FT221XQ, FT230XQ, FT231XQ, FT240XQ QFN Tape Dimensions

- Notes:
1. 10 sprocket hole pitch cumulative tolerance ± 0.2
 2. Camber not to exceed 1mm in 100mm.
 3. Material: Black Advantek Polystyrene.
 4. A_0 and B_0 measured on a plane 0.3mm above the bottom of the pocket.
 5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
 6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

★ Pin 1 Identifier

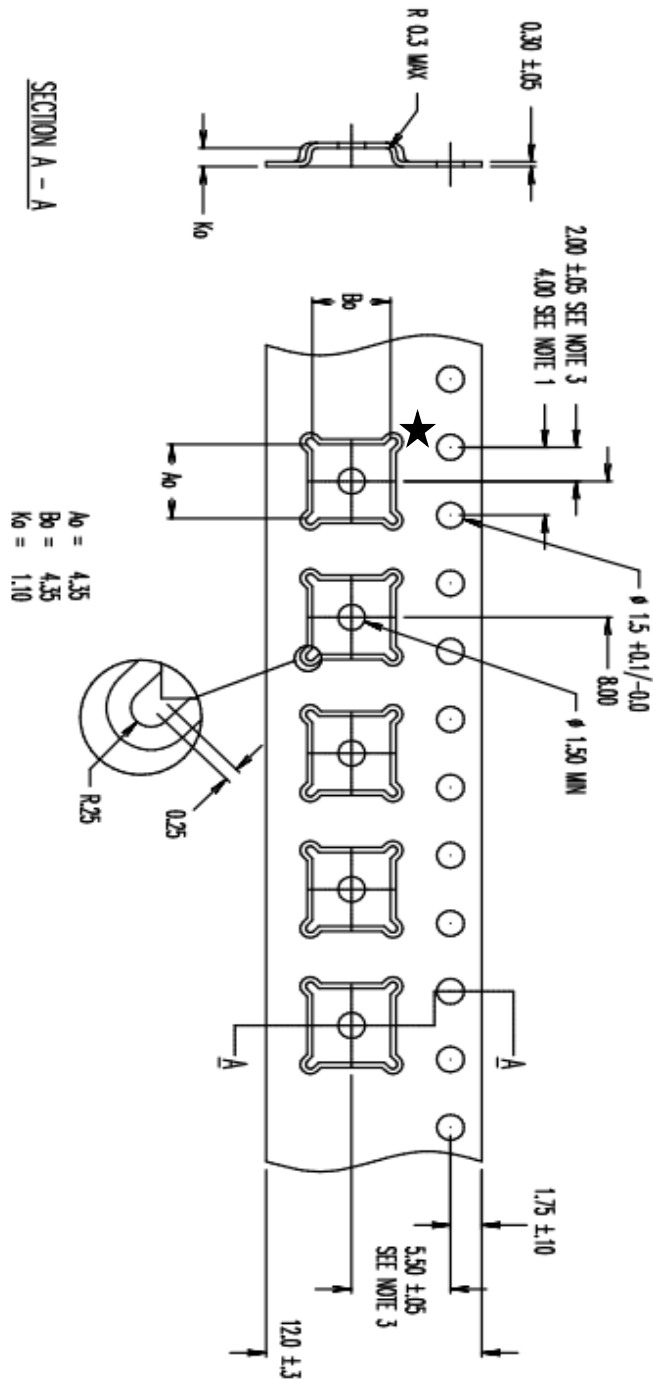


Figure 36.1 FT201XQ, FT220XQ, FT221XQ, FT230XQ, FT231XQ, FT240XQ QFN Tape Dimensions

37 FT201XQ, FT220XQ, FT230XQ SSOP Reel Dimensions

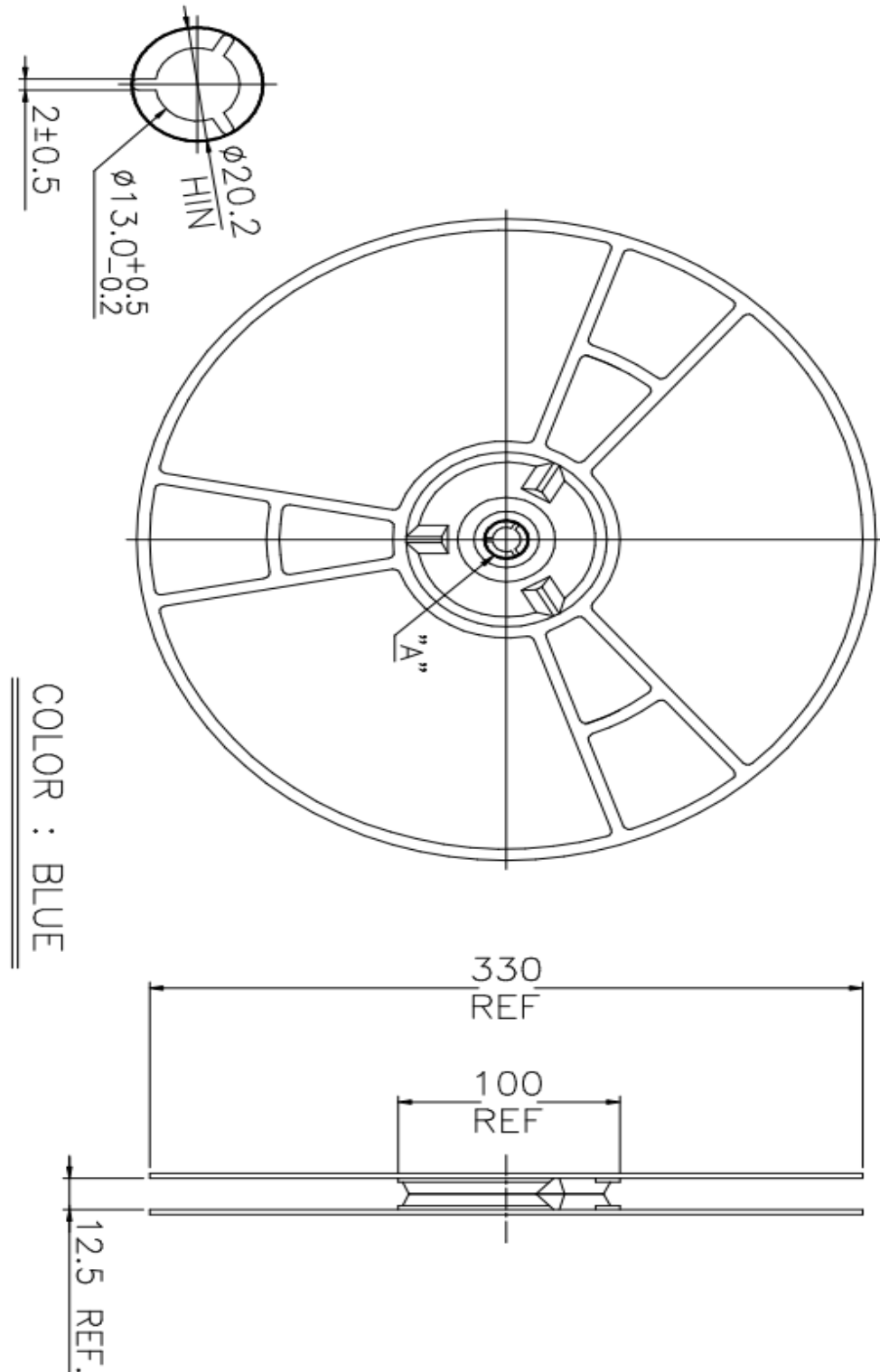


Figure 37.1 FT201XQ, FT220XQ, FT230XQ SSOP Reel Dimensions

39 FT221XQ, FT231XQ, FT240XQ SSOP Reel Dimensions

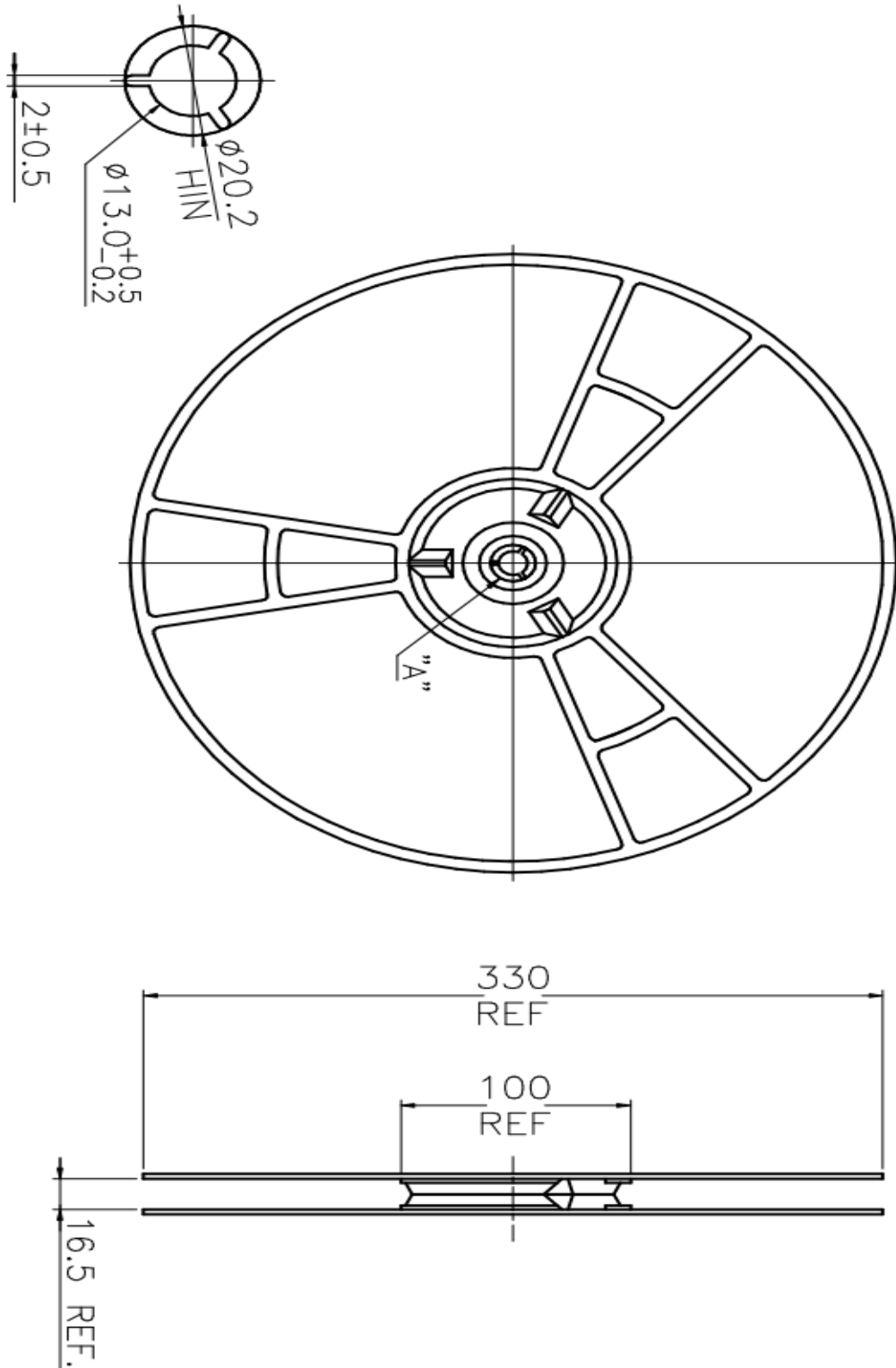


Figure 39.1 FT221XQ, FT231XQ, FT240XQ SSOP Reel Dimensions

42 FT120T TSSOP Tape Dimensions

A0	6.80 +/−0.1
B0	10.20 +/−0.1
K0	1.60 +/−0.1
K1	1.20 +/−0.1
F	7.50 +/−0.1
P1	8.00 +/−0.1
W	16.00 ± 0.3

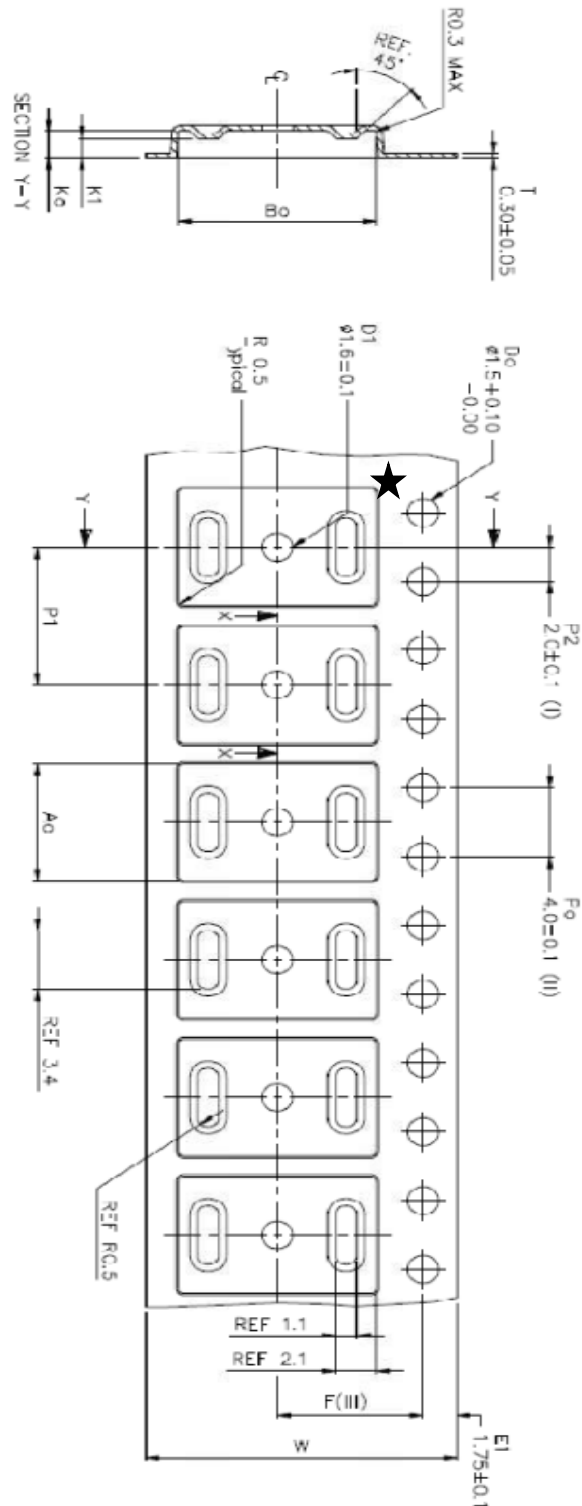


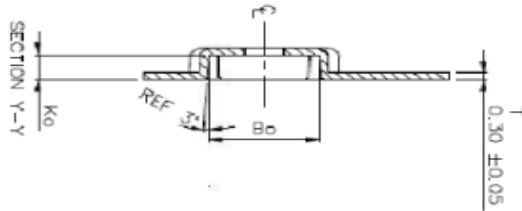
Figure 42.1 FT120T TSSOP Tape Dimensions

★ Pin 1 Identifier

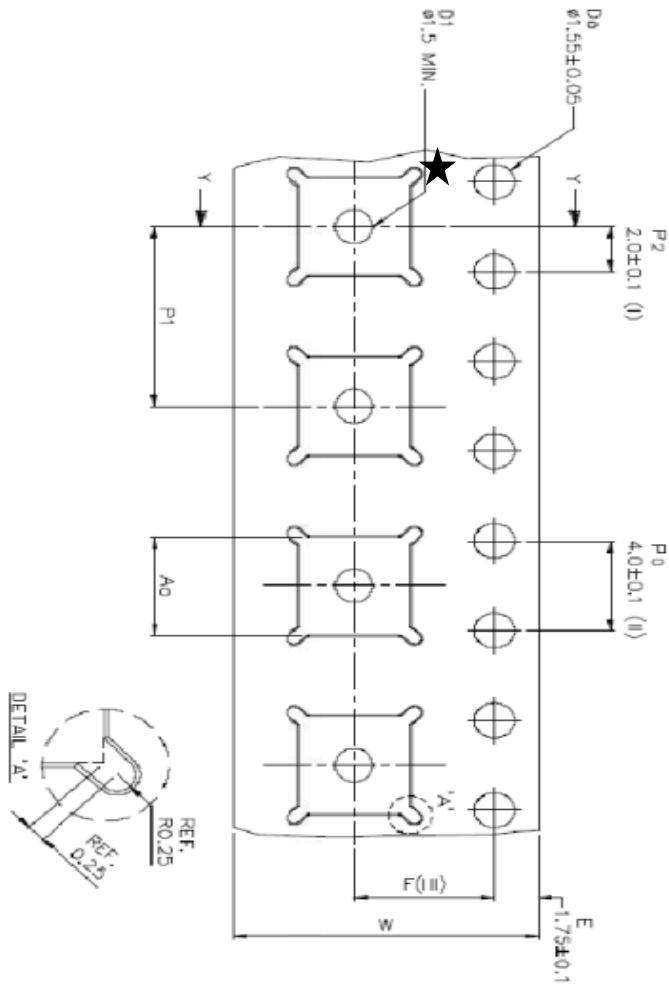
- () Measured from centreline of sprocket hole to centreline of pocket.
 (I) Cumulative tolerance of 10 sprocket holes is ± 0.20.
 (II) Measured from centreline of sprocket hole to centreline of pocket.
 (V) Other material available.
 (V) Typical SQ of form tape Max 10⁹ QHM/SQ.
- ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.

44 FT120Q QFN Tape Dimensions

A ₀	4.35	+/-	0.1
B ₀	4.35	+/-	0.1
K ₀	1.10	+/-	0.1
F	5.50	+/-	0.1
P ₁	8.00	+/-	0.1
W	12.00	+/-	0.3



★ Pin 1 Identifier



- (I) Measured from centreline of sprocket hole to centreline of pocket.
 - (II) Cumulative tolerance of 10 sprocket holes is ± 0.20 .
 - (III) Measured from centreline of sprocket hole to centreline of pocket.
 - (IV) Other material available.
- ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.

Figure 44.1 FT120Q QFN Tape Dimensions

45 FT201XS, FT220XS, FT230XS, FT240XS Reel Dimensions

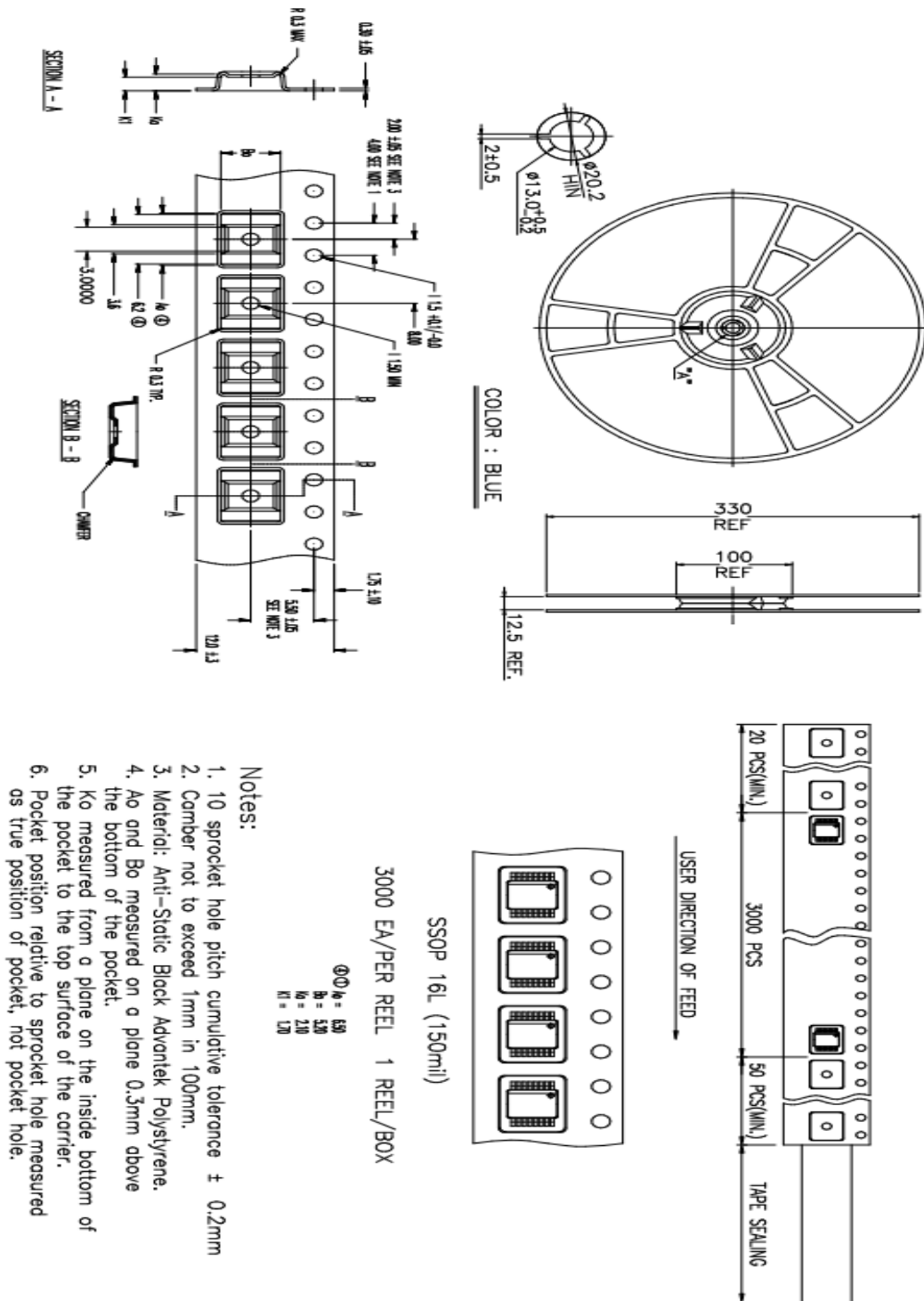


Figure 45.1 FT201XS, FT220XS, FT230XS, FT240XS Reel Dimensions

46 FT221XS, FT231XS Reel Dimensions

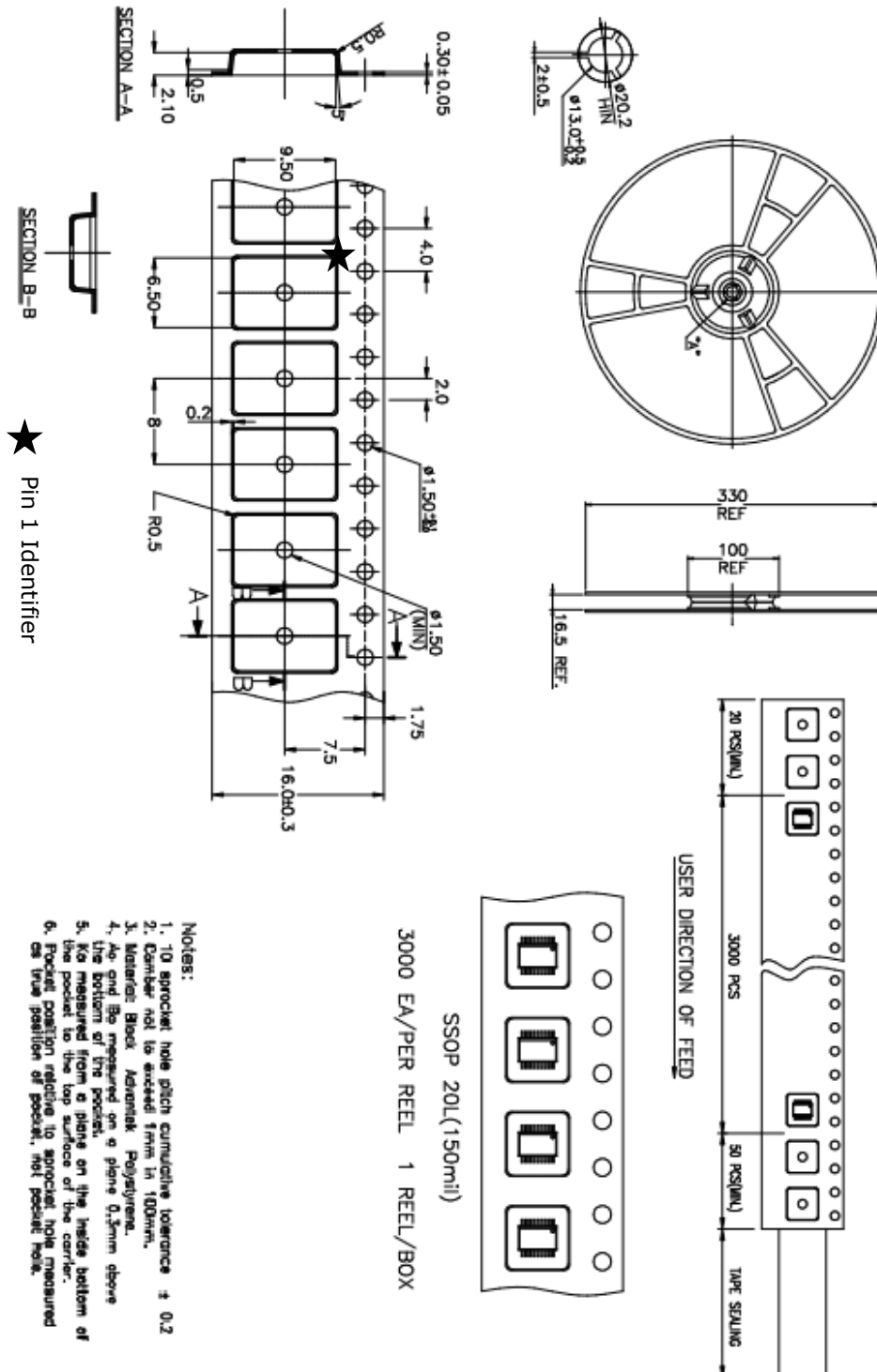


Figure 46.1 FT221XS, FT231XS Reel Dimensions

48 FT313H-QFN Reel Dimensions

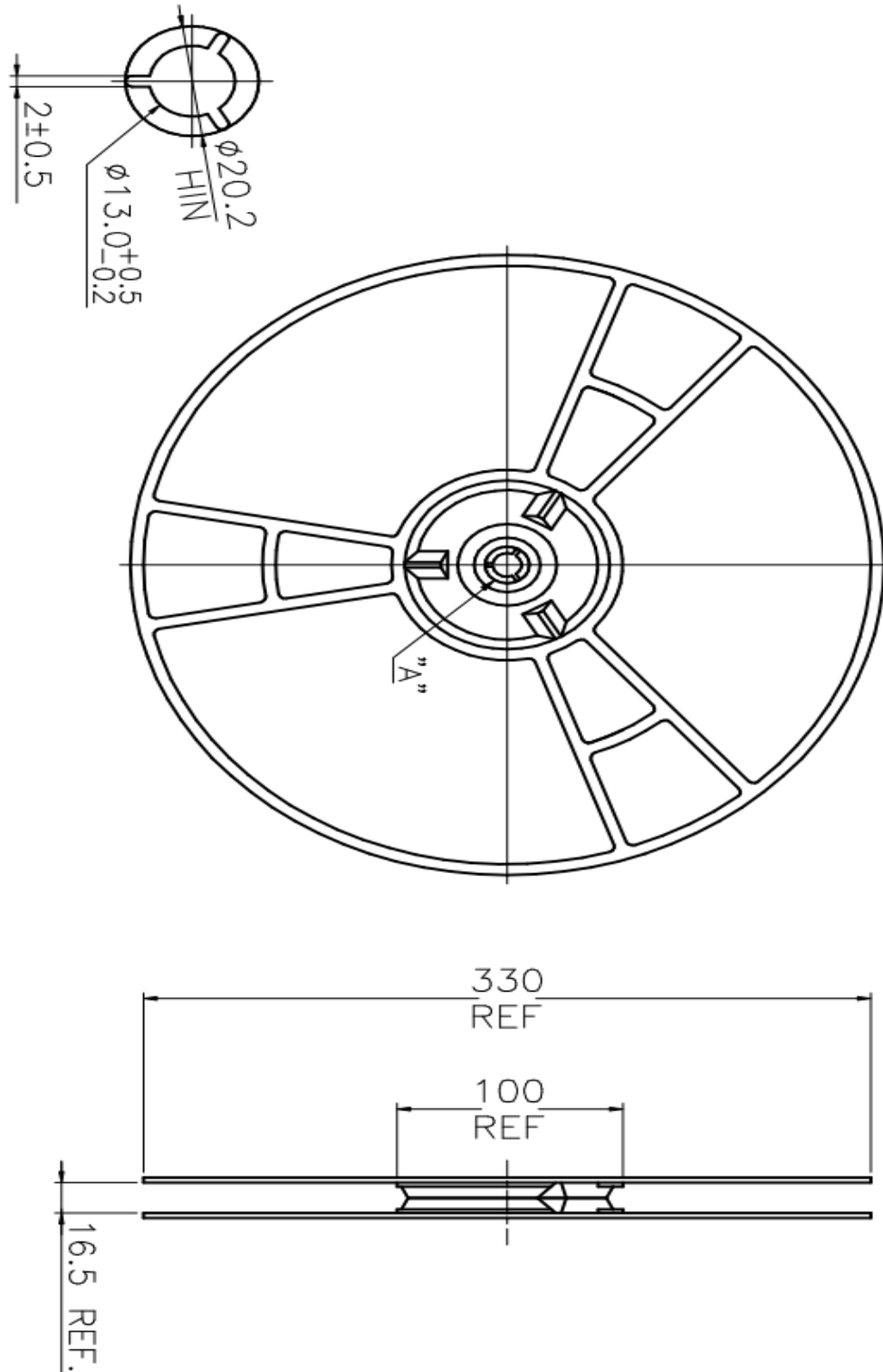
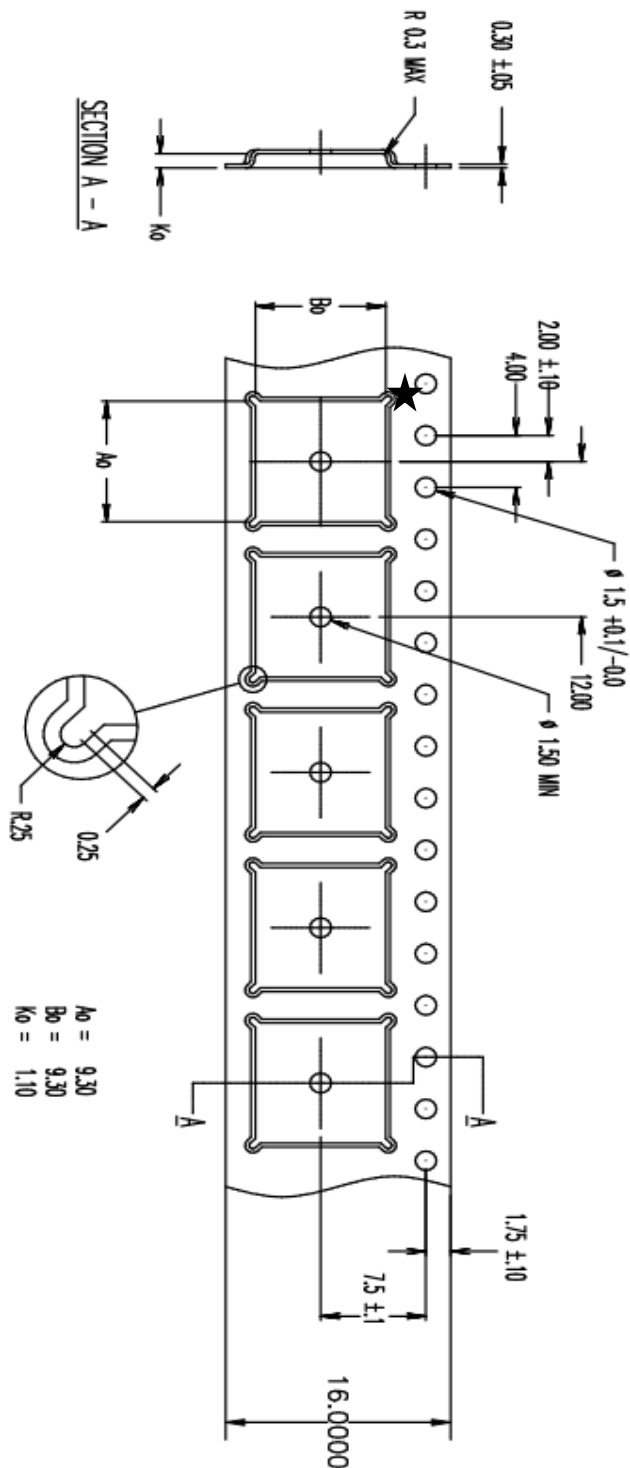


Figure 48.1 FT313H-QFN Reel Dimensions

49 FT313H-QFN Tape Dimensions

- Notes:
1. 10 sprocket hole pitch cumulative tolerance ± 0.2
 2. Camber not to exceed 1mm in 100mm.
 3. Material: Black Advantek Polystyrene.
 4. A_0 and B_0 measured on a plane 0.5mm above the bottom of the pocket.
 5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
 6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.



★ Pin 1 Identifier

Figure 49.1 FT313H-QFN Tape Dimensions

50 FT313H-LQFP Reel Dimensions

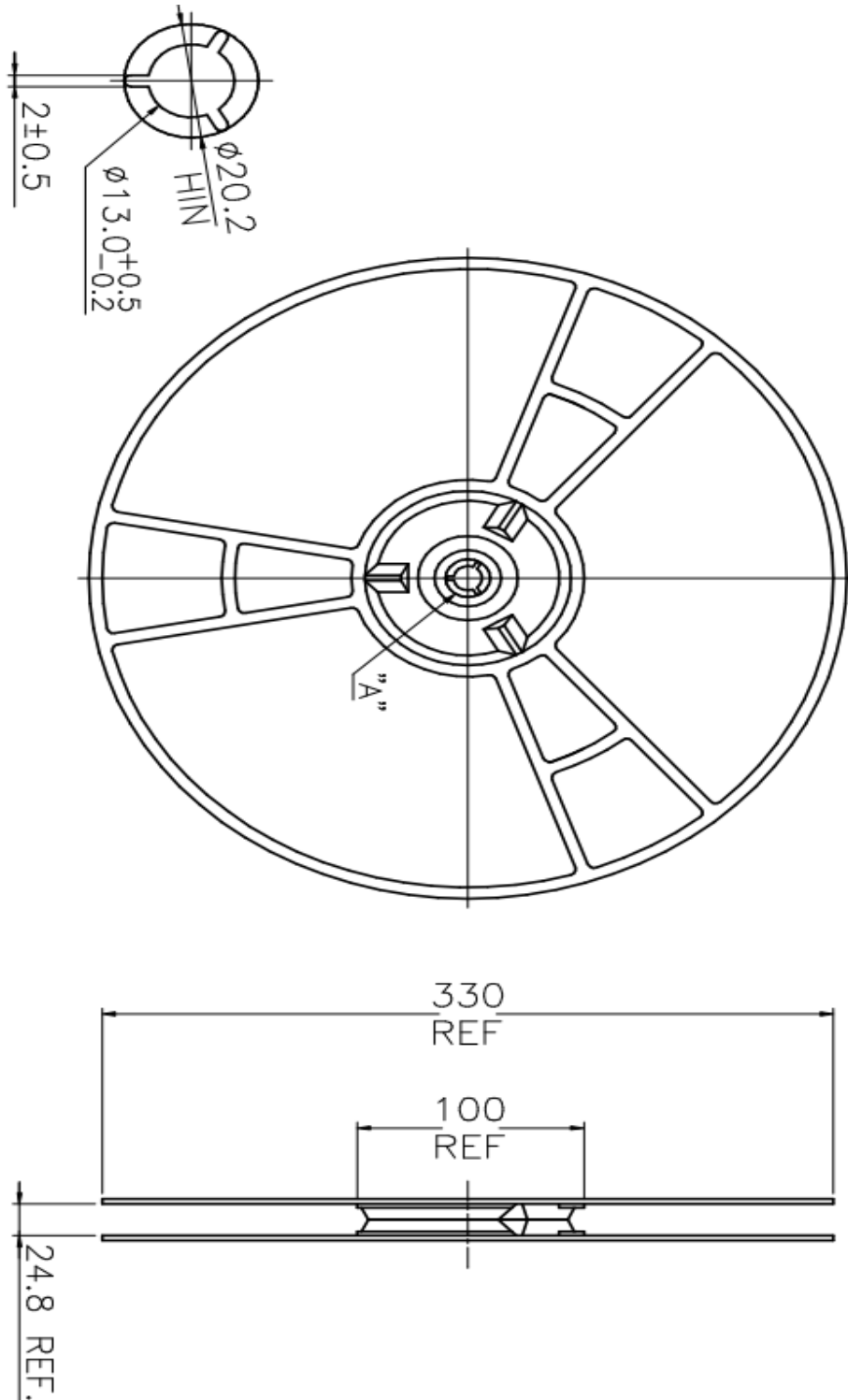


Figure 50.1 FT313H-LQFP Reel Dimensions

51 FT313H-LQFP Tape Dimensions

- NOTES:
1. TO SPROCKET HOLE PITCH CUMULATIVE TOLERANCE ± 0.2
 2. CAMBER IN COMPLIANCE WITH EA 481
 3. POCKET POSITION RELATIVE TO SPROCKET HOLE MEASURED AS TRUE POSITION OF POCKET, NOT POCKET HOLE
 4. COVER TAPE WIDTH : 21.3 ± 0.1

★ Pin 1 Identifier

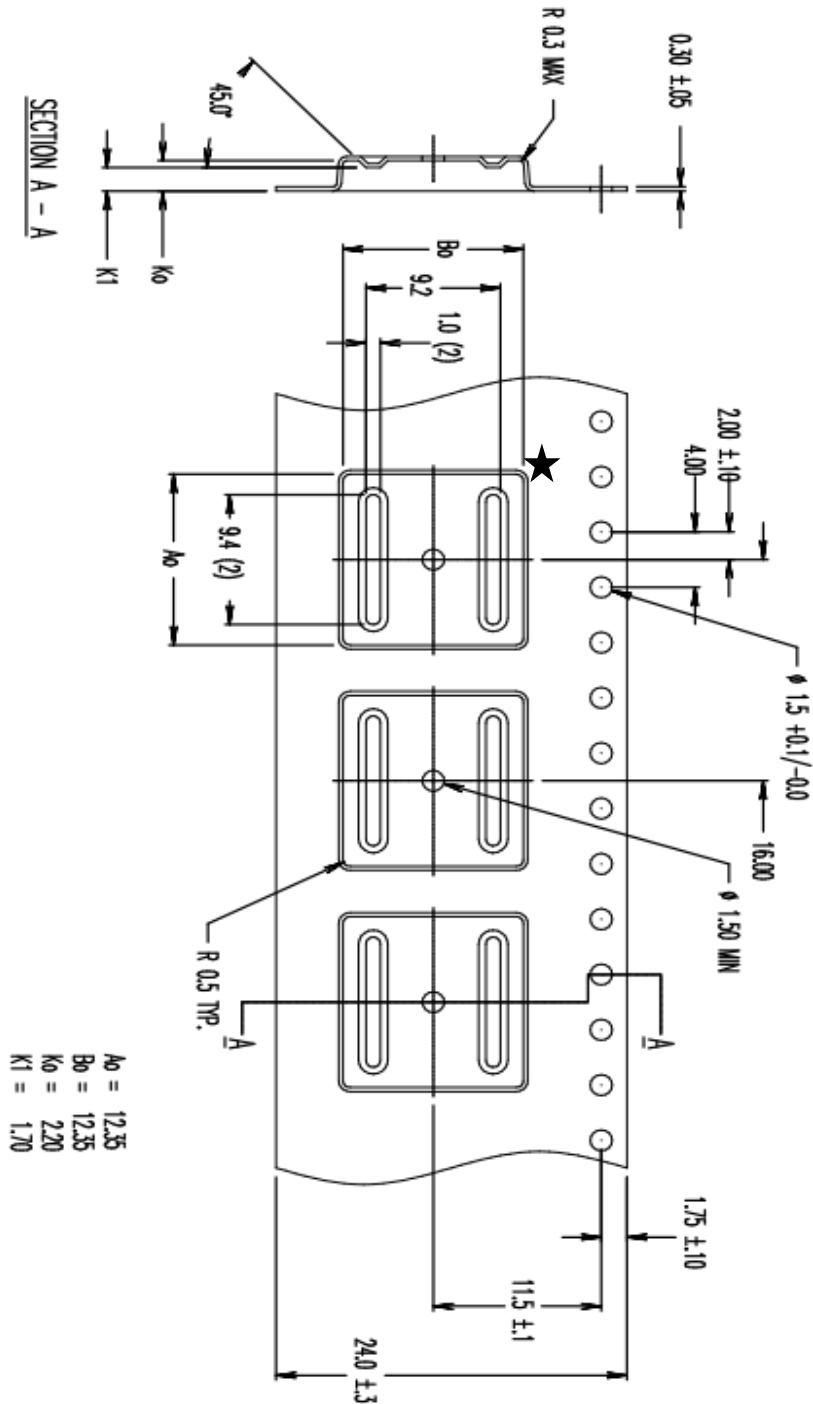


Figure 51.1 FT313H-LQFP Tape Dimensions

52 FT313H-TQFP Reel Dimensions

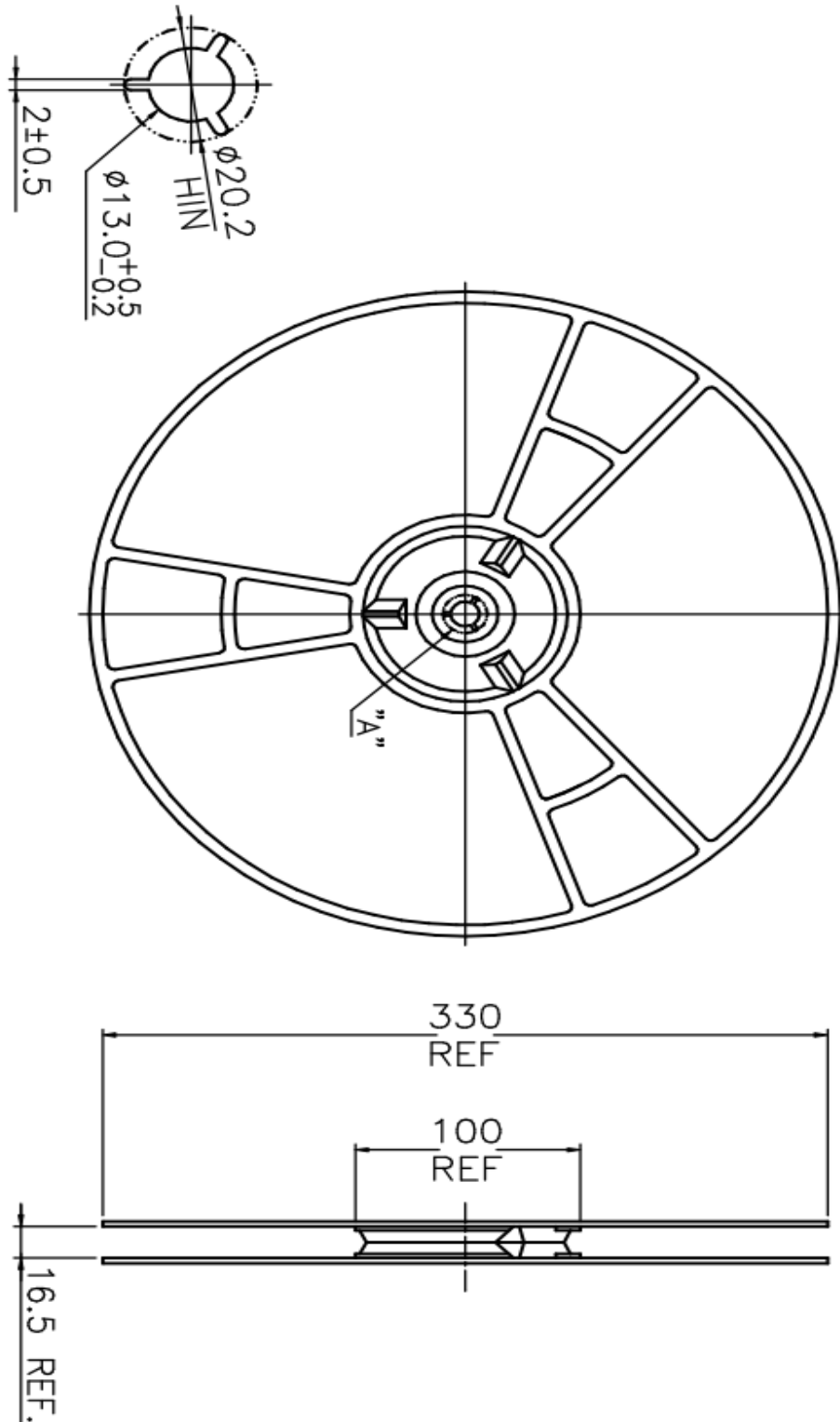


Figure 52.1 FT313H-TQFP Reel Dimensions

53 FT313H-TQFP Tape Dimensions

- NOTES:
1. 10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE ± 0.2
 2. CAMBER IN COMPLIANCE WITH EIA 481
 3. POCKET POSITION RELATIVE TO SPROCKET HOLE MEASURED AS TRUE POSITION OF POCKET, NOT POCKET HOLE
 4. COVER TAPE WIDTH : 13.3 ± 0.1

$A_0 = 9.30 \pm 0.1$
 $B_0 = 9.30 \pm 0.1$
 $K_0 = 1.80 \pm 0.1$
 $K_1 = 1.20 \pm 0.1$

★ Pin 1 Identifier

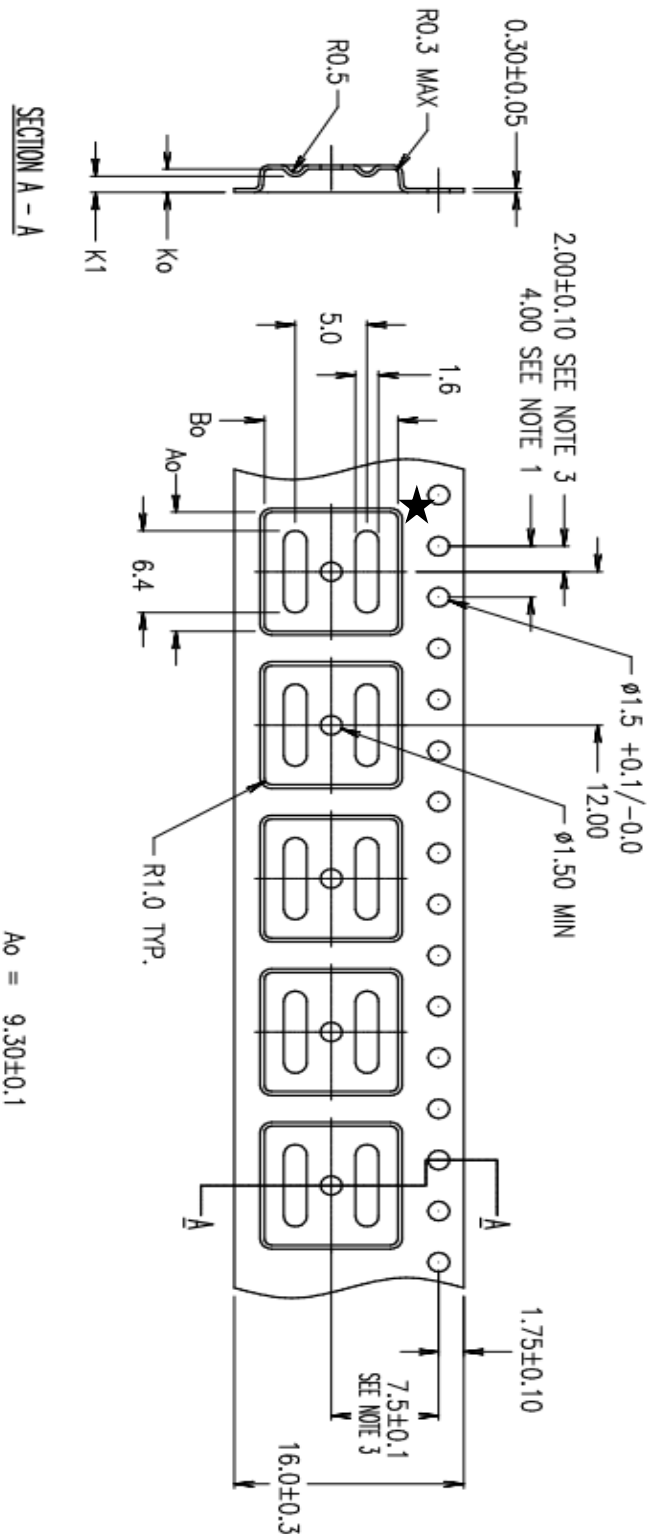


Figure 53.1 FT313H-TQFP Tape Dimensions

54 FT600Q Reel Dimensions

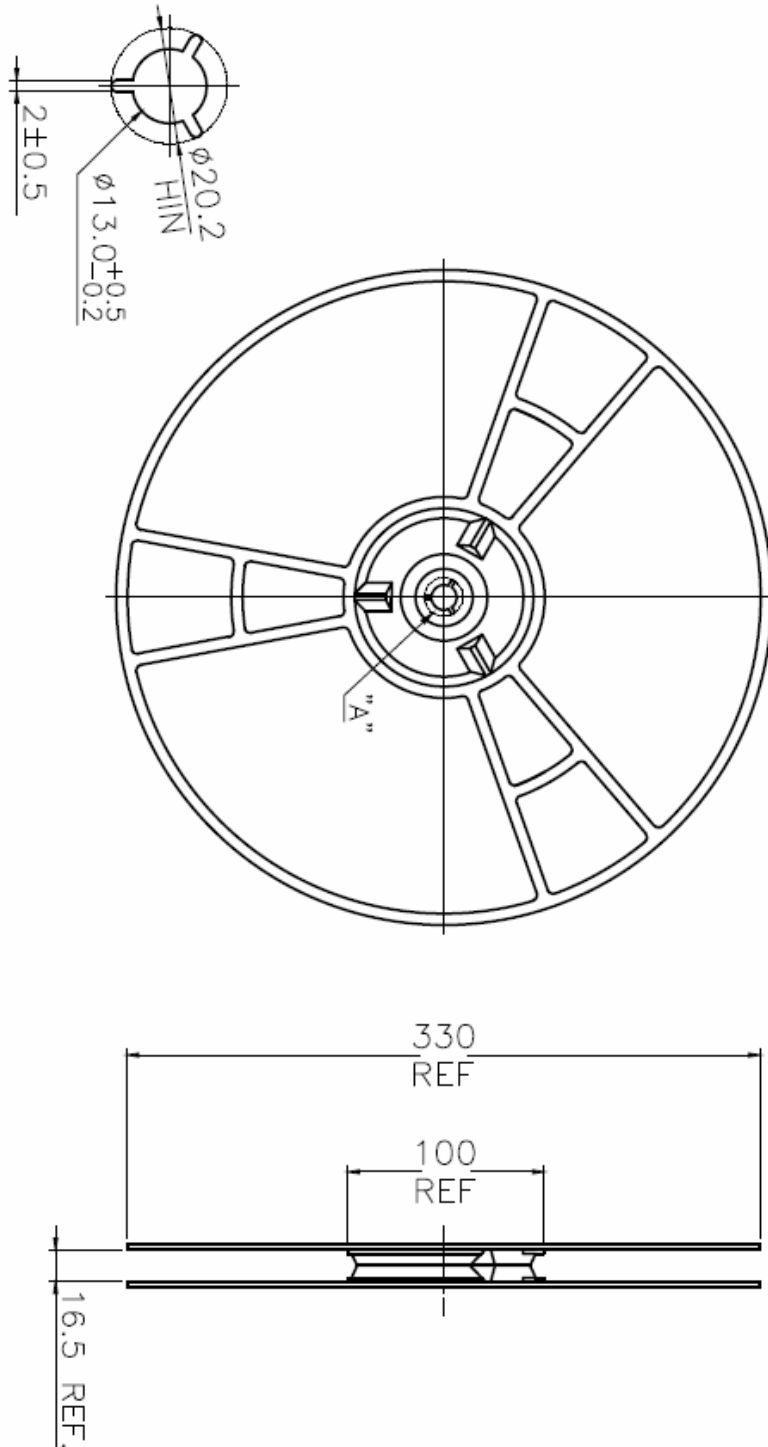


Figure 54.1 FT600Q Reel Dimensions

55 FT600Q Tape Dimensions

- NOTES:
1. DIM IN MM.
 2. 10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE ± 0.2 .
 3. CAMBER NOT TO EXCEED 1 MM IN 100 MM.
 4. POCKET POSITION RELATIVE TO SPROCKET HOLE MEASURED AS TRUE POSITION OF POCKET, NOT POCKET HOLE.
 5. SURFACE RESISTIVITY LESS THAN OR EQUAL TO 1.0×10^7 OHMS/SQ.

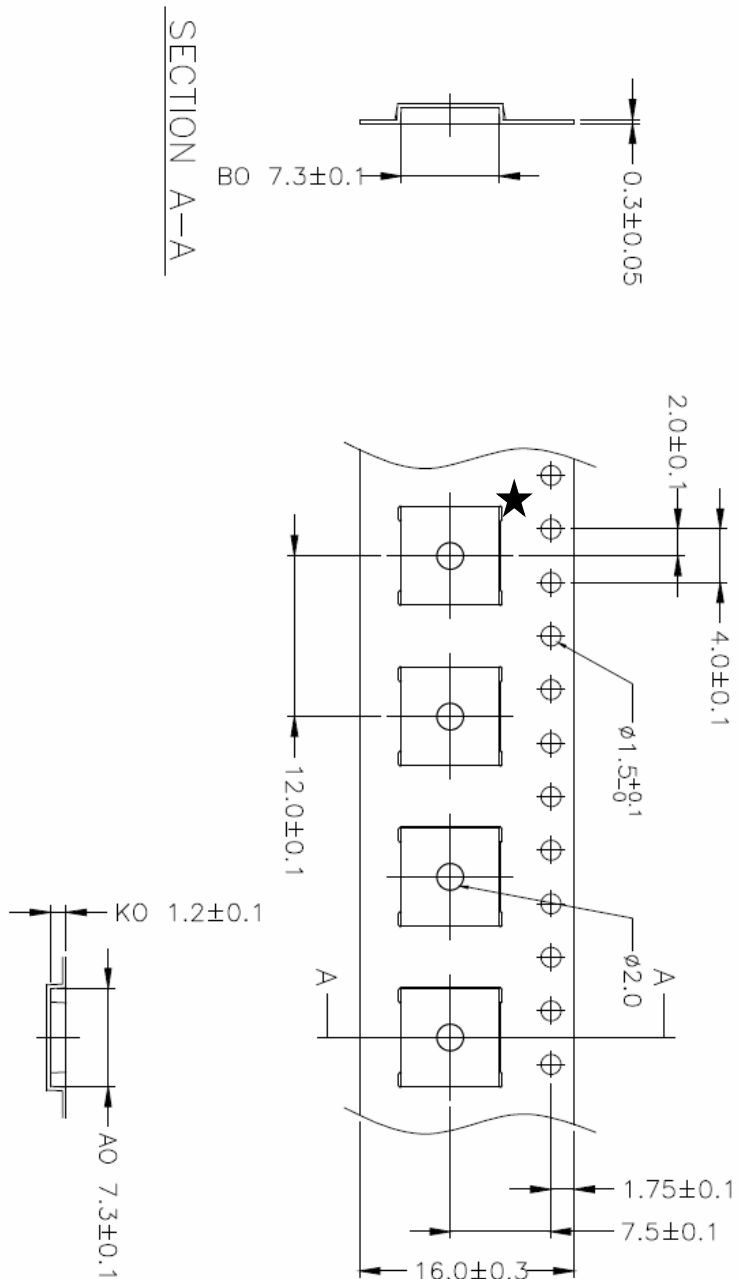


Figure 55.1 FT600Q Tape Dimensions

56 FT601Q, FT602Q Reel Dimensions

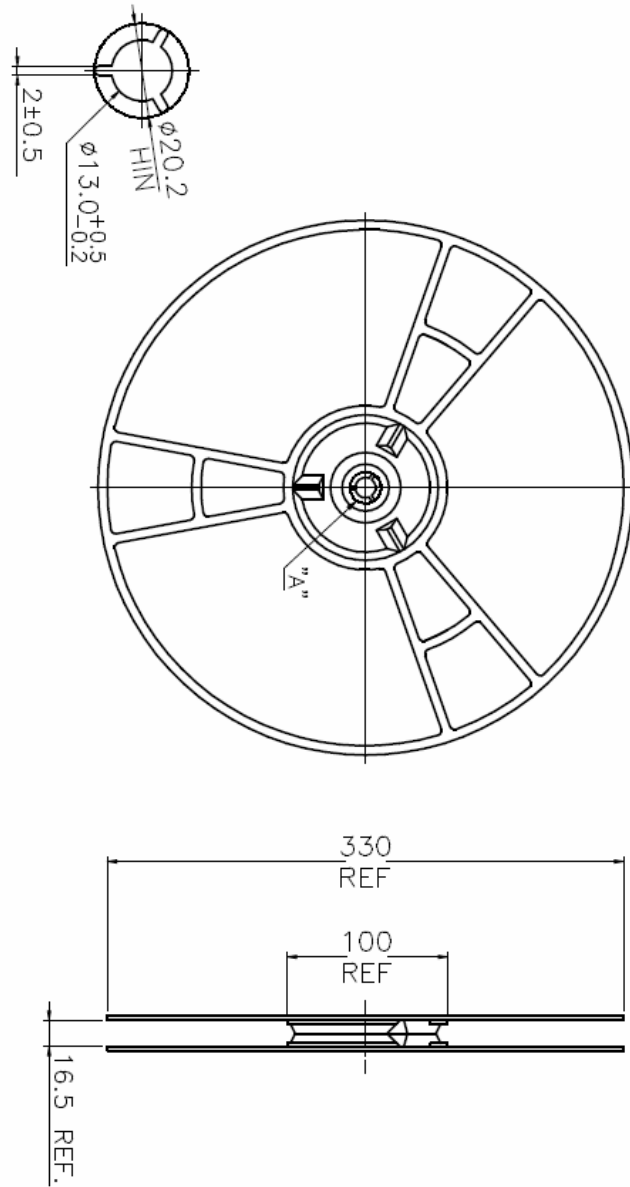


Figure 56.1 FT601Q, FT602Q Reel Dimensions

57 FT601Q, FT602Q Tape Dimensions

- Notes:
1. 10 sprocket hole pitch cumulative tolerance ± 0.2
 2. Camber not to exceed 1mm in 100mm.
 3. Material: Black Advantek Polystyrene.
 4. A_0 and B_0 measured on a plane 0.5mm above the bottom of the pocket.
 5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
 6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

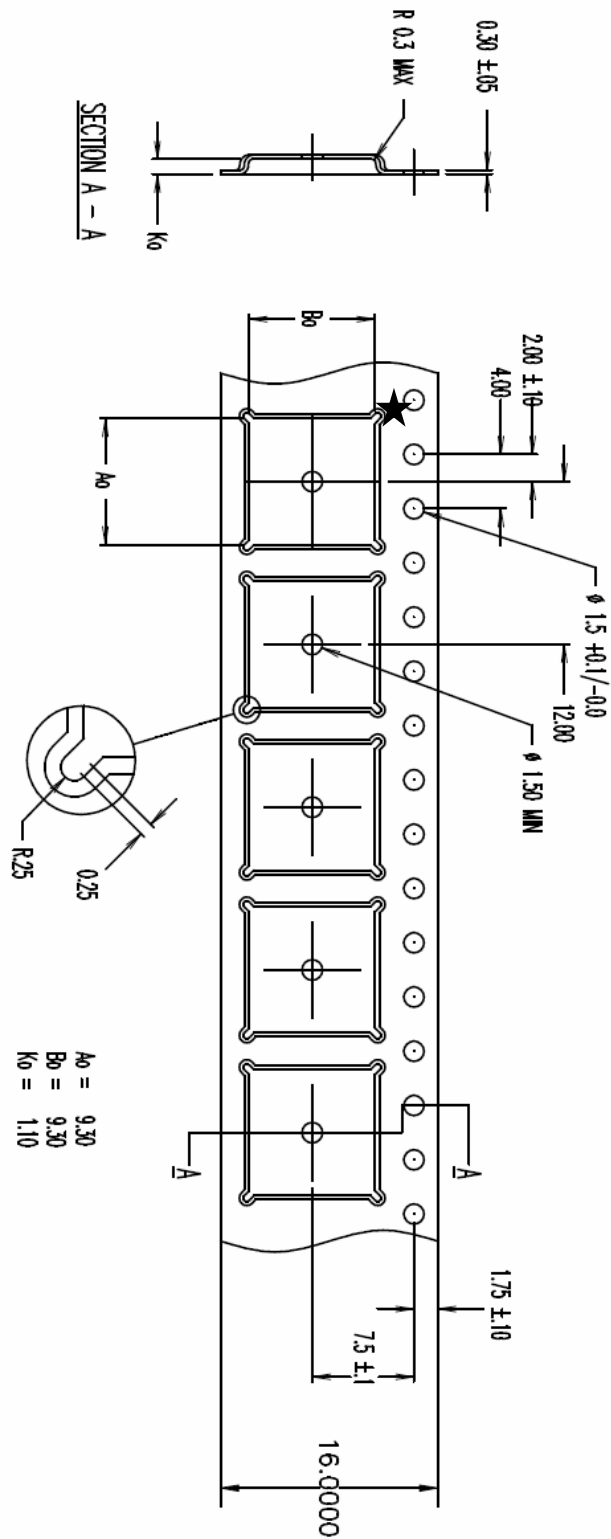


Figure 57.1 FT601Q, FT602Q Tape Dimensions

★ Pin 1 Identifier

58 FT4222HQ Reel Dimensions

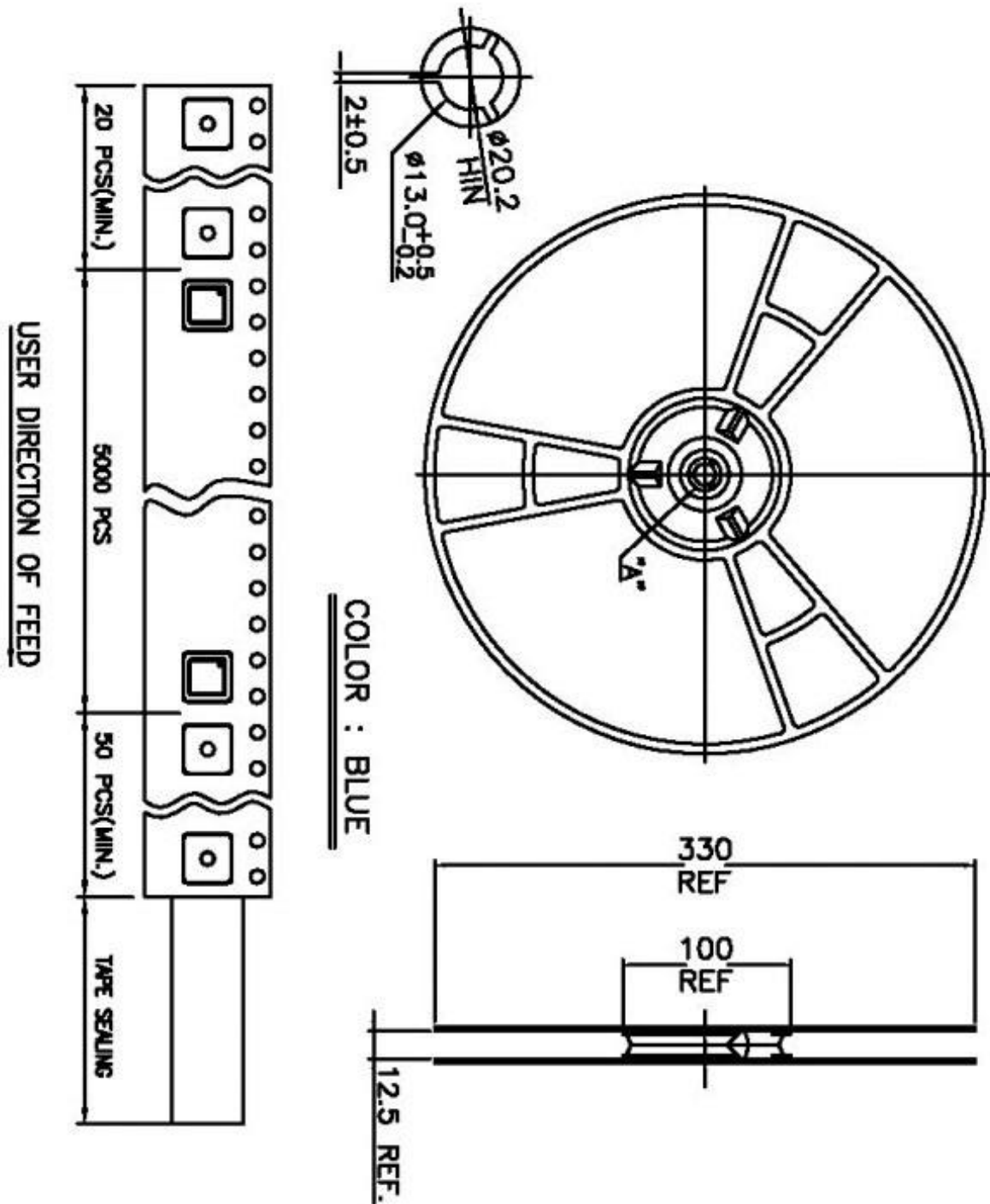


Figure 58.1 FT4222HQ Reel Dimensions

60 FT4222HQ Tray Dimensions

- NOTES:**
1. (S.R. OHMSQ) MEANS SURFACE ELECTRIC RESISTIVITY OF THE TRAY.
 2. THE MOLDED TRAY'S MATERIAL SHALL BE RIGID ENOUGH TO AVOID DAMAGE TO THE COMPONENTS DURING HANDLING, LOADING, BACKING, TESTING, SHIPPING AND PLACING.
 3. TRAYS ARE STACKABLE WITHOUT INTERFERENCE AND WILL NOT STICK TOGETHER DURING UNSTACKING OPERATION.
 4. WARPAGE IS WITHIN 0.76 mm.
 5. THE CELLS MARKED WITH CROSS SYMBOL ARE FOR VACUUM PICKUP AREA AND WITHOHT THRU HOLES.
 6. TOTAL USABLE CELLS 14X35=490.
 7. ALL DIMENSIONS ARE IN MILLIMETERS.

★ Pin 1 Identifier

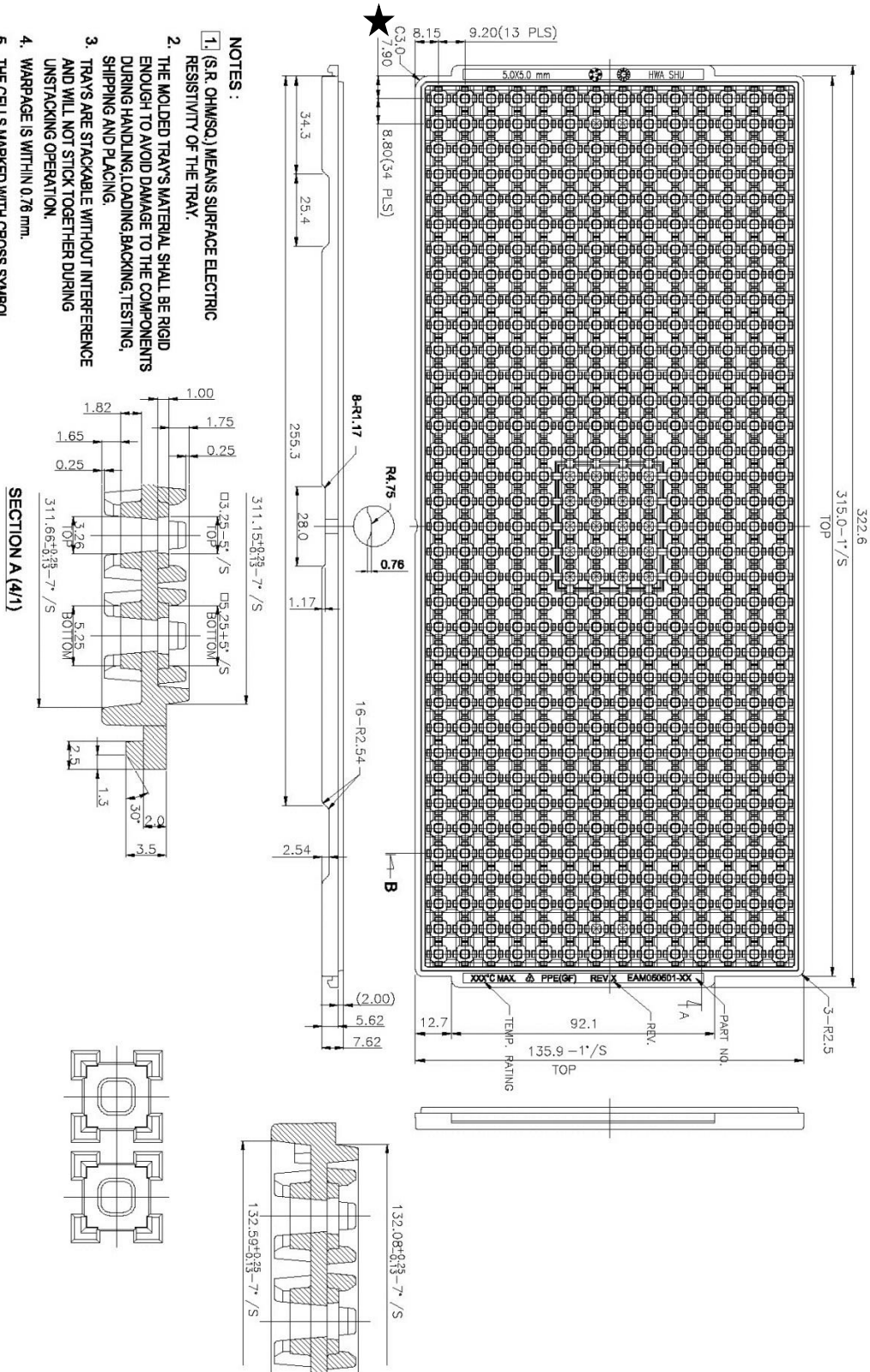


Figure 60.1 FT4222HQ Tape Dimensions

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Appendix A – References

Document References

NA

Acronyms and Abbreviations

Terms	Description
LQFP	Low Profile Quad Flat Pack
QFN	Quad Flat No-Leads Package
TSSOP	Thin Shrink Small Outline Package
VNC2	Vinculum-II

Appendix B – List of Figures and Tables

List of Figures

Figure 3.1 – FT232BL, FT245BL and FT2232D Tape Dimensions.....	7
Figure 4.1 – FT232BL, FT245BL and FT2232D Reel Dimensions	8
Figure 5.1 – FT232BQ and FT245BQ Tape Dimensions.....	9
Figure 6.1 – FT232BQ and FT245BQ Reel Dimensions.....	10
Figure 7.1 – FT232RL and FT245RL Tape Dimensions	11
Figure 8.1 – FT232RL and FT245RL Reel Dimensions.....	12
Figure 9.1 – FT232RL and FT245RL Tube Dimensions	13
Figure 10.1 – FT232RQ and FT245RQ Tape Dimensions	14
Figure 11.1 – FT232RQ and FT245RQ Reel Dimensions.....	15
Figure 12.1 FT232RQ and FT245RQ Tray Dimensions	16
Figure 13.1 – FT2232HL and FT4232HL Tape Dimensions	17
Figure 14.1 – FT2232HL and FT4232HL Reel Dimensions	18
Figure 15.1 FT2232HL and FT4232HL Tray Dimensions.....	19
Figure 16.1 – FT2232HQ and FT4232HQ Tape Dimensions	20
Figure 17.1 – FT2232HQ and FT4232HQ Reel Dimensions.....	21
Figure 18.1 FT2232HQ and FT4232HQ Tray Dimensions	22
Figure 19.1– FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Reel Dimensions.....	23
Figure 20.1 - FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Tape Dimensions	24
Figure 21.1 – FT2232H-56Q, FT4232H-56Q, VNC2-48Q1C, FT232HQ – QFN Tray Dimensions	25
Figure 22.1 – VNC1L – A – Reel Vendor Part No. RD33008SW	26
Figure 23.1 – VNC1L – A – Cover Tape Vendor Part No. AA13305NP	27
Figure 24.1 – VNC1L – A – Carrier Tape Vendor Part No. Q07X07-A.....	28
Figure 25.1 – FT311D-32L1C, FT312D-32L1C, VNC2-32L1C – LQFP Reel Dimensions	29
Figure 26.1 - FT311D-32L1C, FT312D-32L1C, VNC2-32L1C – LQFP Carrier Tape Dimensions	30
Figure 27.1 - VNC2-48L1C, FT232HL – LQFP Reel Dimensions	31
Figure 28.1 - VNC2-48L1C, FT232HL – LQFP Carrier Tape Dimensions.....	32
Figure 29.1- FT311D-32L1C, FT312D-32L1C, VNC2-32L1C, VNC2-48L1C, FT232HL - LQFP Tray Dimensions.....	33
Figure 30.1 - FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C –QFN Reel Dimensions	34
Figure 31.1 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C – QFN Carrier Tape Dimensions	35
Figure 32.1 FT311D-32Q1C, FT312D-32Q1C, VNC2-32Q1C – QFN Tray Dimensions	36
Figure 33.1 FT200XD, FT234XD Reel Dimensions.....	37
Figure 34.1 FT200XD, FT234XD Tape Dimensions	38
Figure 35.1 FT201XQ, FT220XQ, FT221XQ, FT230XQ, FT231XQ, FT240XQ QFN Reel Dimensions	39
Figure 36.1 FT201XQ, FT220XQ, FT221XQ, FT230XQ, FT231XQ, FT240XQ QFN Tape Dimensions	40

Figure 37.1 FT201XQ, FT220XQ, FT230XQ SSOP Reel Dimensions	41
Figure 38.1 FT201XQ, FT220XQ, FT230XQ SSOP Tape Dimensions.....	42
Figure 39.1 FT221XQ, FT231XQ, FT240XQ SSOP Reel Dimensions	43
Figure 40.1 FT221XQ, FT231XQ, FT240XQ SSOP Tape Dimensions.....	44
Figure 41.1 FT120T TSSOP Reel Dimensions	45
Figure 42.1 FT120T TSSOP Tape Dimensions.....	46
Figure 43.1 FT120Q Reel Dimensions	47
Figure 44.1 FT120Q QFN Tape Dimensions.....	48
Figure 45.1 FT201XS, FT220XS, FT230XS, FT240XS Reel Dimensions	49
Figure 46.1 FT221XS, FT231XS Reel Dimensions	50
Figure 47.1 FT231XS Tube Dimensions	51
Figure 48.1 FT313H-QFN Reel Dimensions	52
Figure 49.1 FT313H-QFN Tape Dimensions	53
Figure 50.1 FT313H-LQFP Reel Dimensions	54
Figure 51.1 FT313H-LQFP Tape Dimensions	55
Figure 52.1 FT313H-TQFP Reel Dimensions	56
Figure 53.1 FT313H-TQFP Tape Dimensions	57
Figure 54.1 FT600Q Reel Dimensions	58
Figure 55.1 FT600Q Tape Dimensions	59
Figure 56.1 FT601Q, FT602Q Reel Dimensions	60
Figure 57.1 FT601Q, FT602Q Tape Dimensions.....	61
Figure 58.1 FT4222HQ Reel Dimensions	62
Figure 59.1 FT4222HQ Tape Dimensions.....	63
Figure 60.1 FT4222HQ Tape Dimensions.....	64

List of Tables

Table 2.1 – Tape and Reel Quantities	5
Table 2.2 – Tube/Tray Quantities	6

Appendix C – Revision History

Document Title : AN_116 FTDI Devices Tape, Reel, Tray & Tube Dimensions
 Document Reference No. : FT_000154
 Clearance No. : FTDI# 98
 Product Page : <https://www.ftdichip.com/Products/ICs.htm>
 Document Feedback : [Send Feedback](#)

Revision	Changes	Date
1.0	Initial Release (based on and supersedes AN232B-11)	2009-08-11
1.1	Added the VNC2 tray and T&R dimensions drawings	2010-05-24
1.2	Updated VNC2 tray dimensions drawings	2011-01-17
1.3	Added pin 1 identifier to tapes	2011-02-17
1.4	Added FT232H tape/reel /tray dimensions	2011-11-07
1.5	Add Reel & Tape information of FTX series chips, FT12 series chips, FT311D and FT313H ; Updated contacts page ;	2012-12-06
1.6	Added section FT231XS tube dimension; Added FT234XD tape and reel (same as FT200XD); Added FT200XD, FT234XD pin 1 identifier; Added FT600Q, FT601Q and FT602Q	2017-07-12
1.7	Added Reel & Tape information for FT4222HQ	2017-11-02
1.8	Added Pin 1 identifier for FT4222HQ	2018-05-08
1.9	Correction Pin 1 identifier for FT200XD & FT234XD	2018-06-06
2.0	Update Added Tape, Reel & Tray images - Added for FT2232H-56Q, FT4232H-56Q, FT232RQ, FT245RQ, FT4222HQ, FT312D-32L & FT312D-32Q. Updated Tape, Reel & Tray images for FT232RQ, FT245RQ, FT2232HL, FT4232HL, FT311D-32L, VNV2-32L, VNC2-48L, FT232HL, FT311D-32Q, VNC2-32Q, VNC2-48Q, FT232HQ, FT2232HQ, FT4232HQ Tray sections, Ft232RL, FT245RL.	2019-04-30