

规格书编号

SPEC NO :

# 产品规格书

# SPECIFICATION

CUSTOMER 客户: \_\_\_\_\_  
PRODUCT 产品: \_\_\_\_\_ SAW FILTER \_\_\_\_\_  
MODEL NO 型号: \_\_\_\_\_ HDF4552 \_\_\_\_\_  
PREPARED 编制: \_\_\_\_\_ CHECKED 审核: \_\_\_\_\_  
APPROVED 批准: \_\_\_\_\_ DATE 日期: \_\_\_\_\_ 2008-1-30 \_\_\_\_\_

客户确认 CUSTOMER RECEIVED:		
审核 CHECKED	批准 APPROVED	日期 DATE

无锡市好达电子有限公司  
Shoulder Electronics Limited



**1.Features**

- \_ RF bandpass filter for CDMA450 Tx. Part
- \_ Usable bandwidth 5MHz (452.5MHz ~ 457.5 MHz)
- \_ High attenuation
- \_ No matching 50Ω single-ended operation
- \_ Ceramic Surface Mounted Device Package ( 3.8 mm \*3.8 mm )

**2. Maximum Ratings**

Parameter	Rating	Unit
Operating Temperature Range	-30~85	°C
Storage Temperature Range	-40~85	°C
DC Voltage VDC	10	V
Power Handling Capability	27	dBm

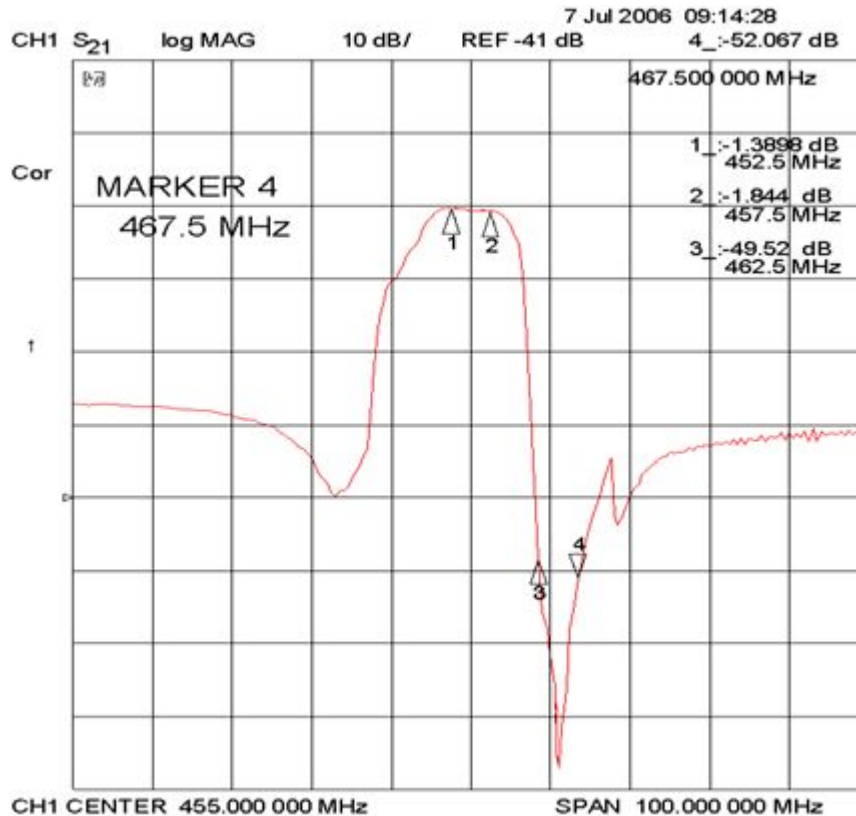
**2-1-1Electrical characteristics( T=25°C)**

		Minimum	Typical	Maximum
Center Frequency ( F0 )	MHz	-	455.0	-
Insertion Loss (F0 +/- 2.5 MHz)	dB	-	2.0	2.8
Amplitude Ripple (F0 +/- 2.5 MHz)	dB	-	0.8	1.2
VSWR (F0 +/- 2.5 MHz)		-	1.4	2.0
Relative Attenuation				-
0.3 MHz ~ 350.0 MHz	dB	25	30	
350.0 MHz ~ 441.0 MHz		25	30	
462.5 MHz ~ 467.5 MHz		40	-	
467.5 MHz ~ 1200 MHz		25	30	
1200 MHz ~ 2000 MHz		20	-	
Input/Output Impedance	Ω	-	50	-

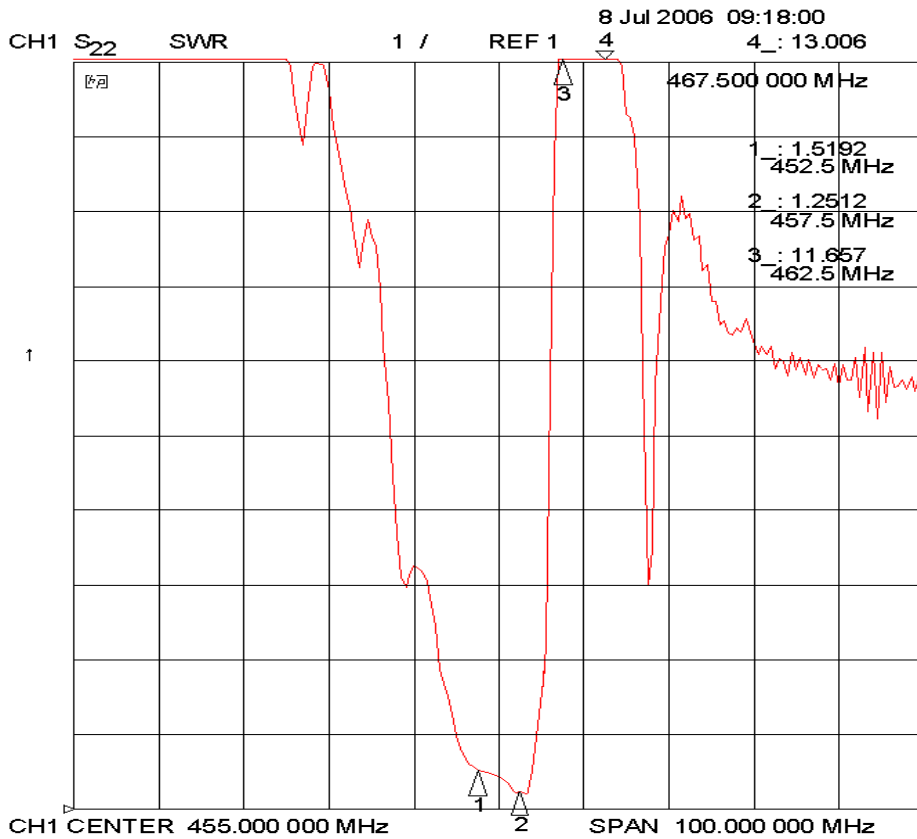
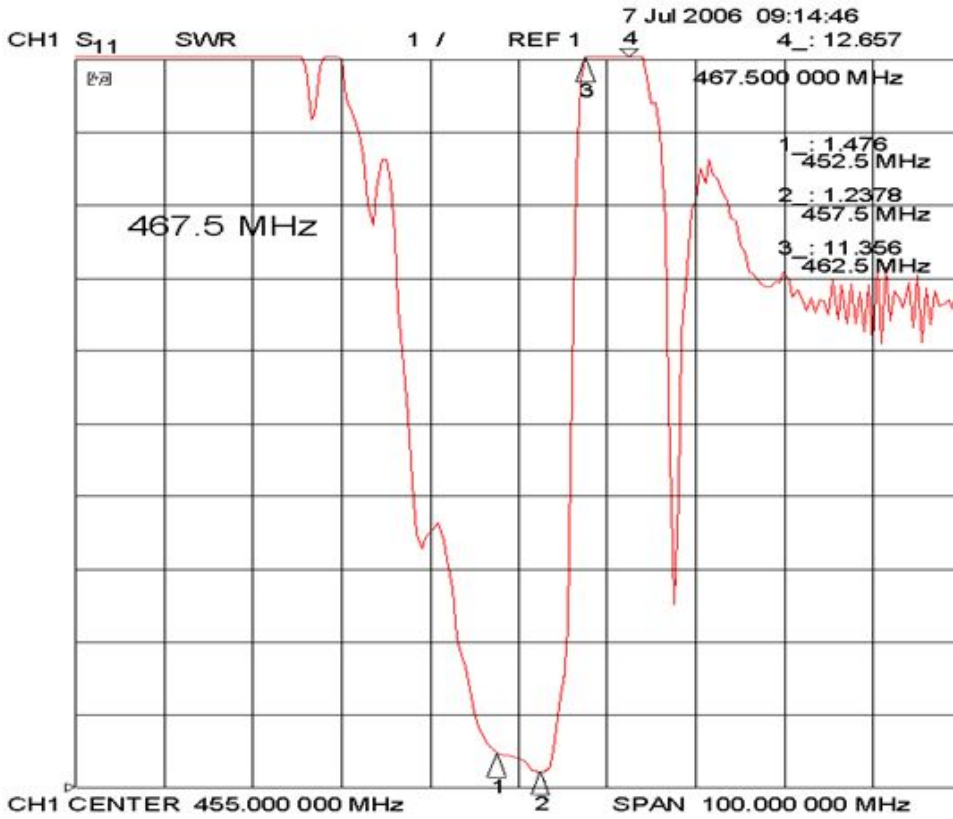
2-1-2.Electrical characteristics( T=+70°C~-20°C)

		Minimum	Typical	Maximum
Center Frequency ( F0 )	MHz	-	455.0	-
Insertion Loss (F0 +/- 2.5 MHz)	dB	-	2.0	3.5
Amplitude Ripple (F0 +/- 2.5 MHz)	dB	-	0.8	1.2
VSWR (F0 +/- 2.5 MHz)		-	1.4	2.0
Relative Attenuation				-
0.3 MHz ~ 350.0 MHz	dB	25	30	
350.0 MHz ~ 441.0 MHz		25	30	
462.5 MHz ~ 467.5 MHz		30	-	
467.5 MHz ~ 1200 MHz		25	30	
1200 MHz ~ 2000 MHz		20	-	
Input/Output Impedance	Ω	-	50	-

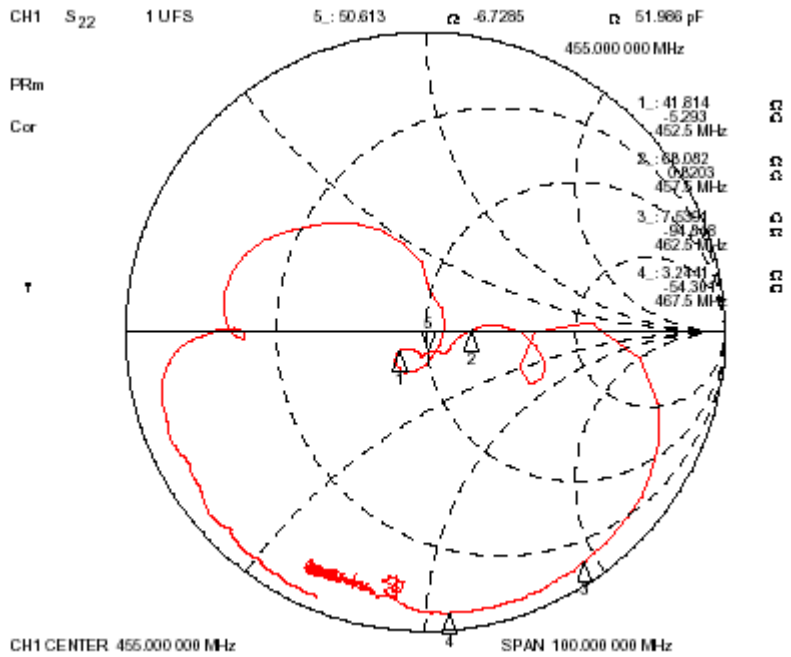
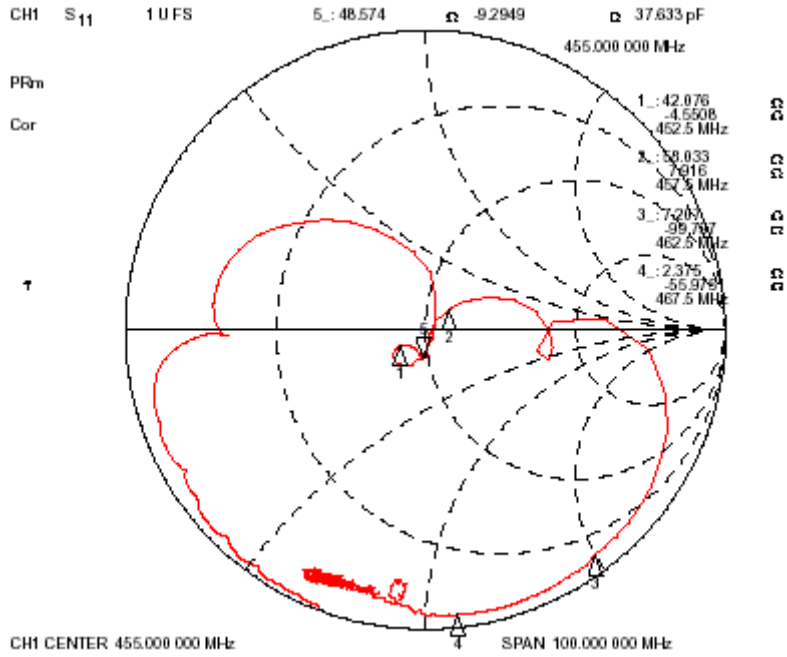
2-2.Typical frequency response



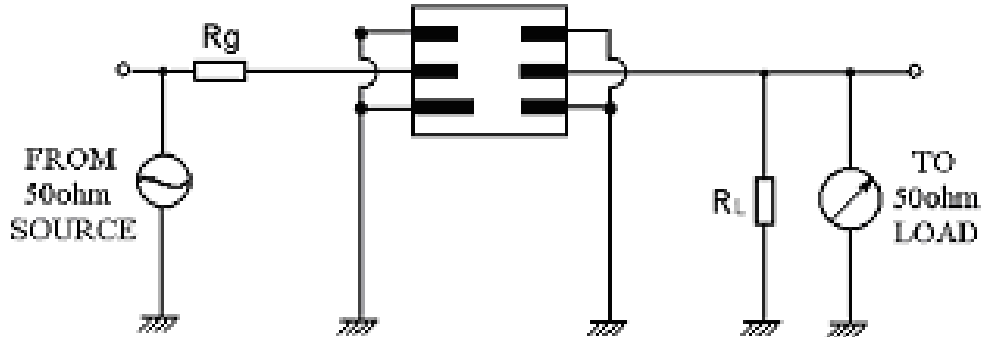
2-3 Input / Output VSWR Charts



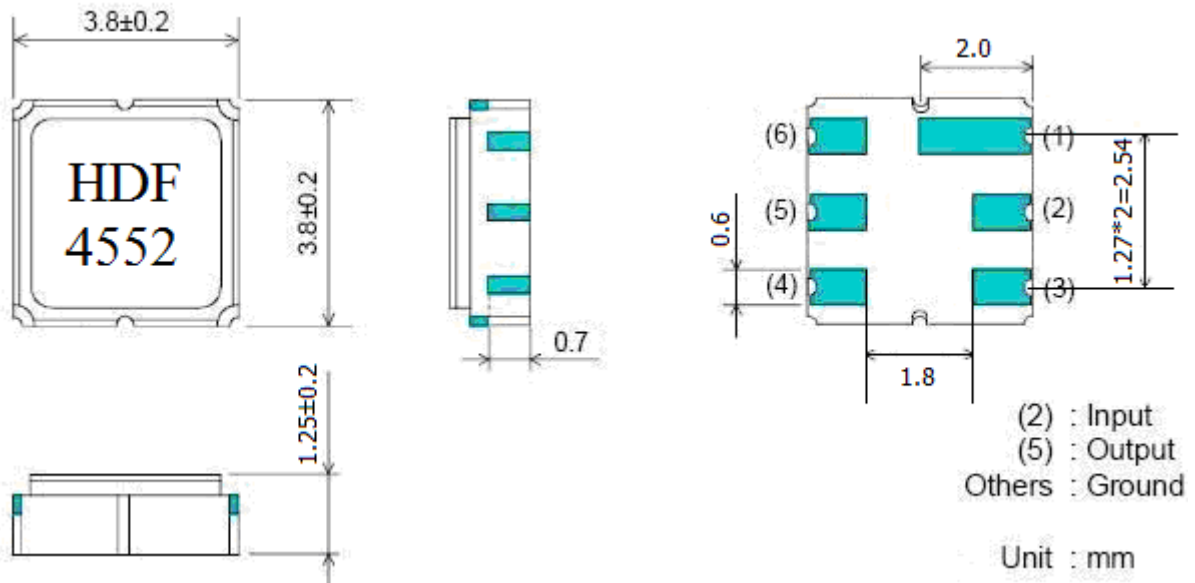
2-4 Input / Output Smith Charts



### 3. TEST CIRCUIT

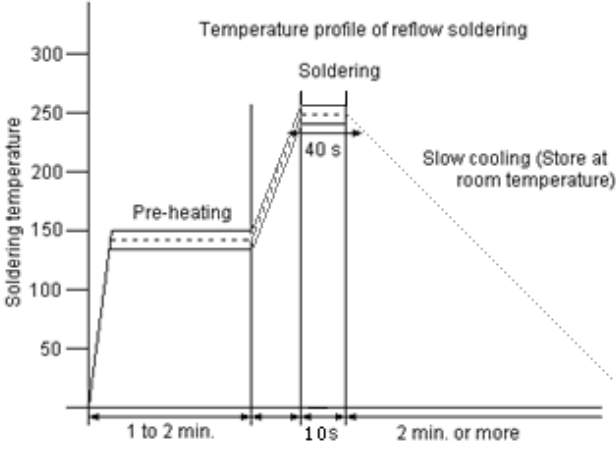


### 4. DIMENSION



### 5.Environmental Performance Characteristics

Item	Condition	Specifications
High temperature	The specimen shall be store at a temperature of $85\pm 2^{\circ}\text{C}$ for $96\pm 4\text{h}$ . Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	Mechanical characteristics and specifications in electrical
Low temperature	The specimen shall be store at a temperature of $-30\pm 3^{\circ}\text{C}$ for $96\pm 4\text{h}$ . Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	

Humidity	The specimen shall be store at a temperature of 40±2℃ with relative humidity of 90% to 96% for 96±4h. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	characteristics shall be satisfied. There shall be no excessive change in appearance.																				
Thermal shock	<p>The specimen shall be subjected to 8 continuous cycles each as shown below. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.</p> <table border="1" data-bbox="432 658 1002 958"> <thead> <tr> <th></th> <th>Temperature</th> <th>Duration</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+25℃=&gt;-40℃</td> <td>0.5h</td> </tr> <tr> <td>2</td> <td>-40℃</td> <td>4h</td> </tr> <tr> <td>3</td> <td>-40℃=&gt;+85℃</td> <td>2h</td> </tr> <tr> <td>4</td> <td>+85℃</td> <td>4h</td> </tr> <tr> <td>5</td> <td>+85℃=&gt;+25℃</td> <td>0.5h</td> </tr> <tr> <td>6</td> <td>+25℃</td> <td>1h</td> </tr> </tbody> </table>			Temperature	Duration	1	+25℃=>-40℃	0.5h	2	-40℃	4h	3	-40℃=>+85℃	2h	4	+85℃	4h	5	+85℃=>+25℃	0.5h	6	+25℃
	Temperature	Duration																				
1	+25℃=>-40℃	0.5h																				
2	-40℃	4h																				
3	-40℃=>+85℃	2h																				
4	+85℃	4h																				
5	+85℃=>+25℃	0.5h																				
6	+25℃	1h																				
Resistance to Soldering heat	<p>Reflow soldering method Peak: 255 ±5 ℃, 220 ±5℃, 40s At electrode temperature of the specimen.</p>  <p>The specimen shall be passed through the reflow furnace with the condition shown in the above profile for 1 time. The specimen shall be stored at standard atmospheric conditions for 1h, after which the measurement shall be made. Test board shall be 1.6 mm thick. Base material shall be glass fabric base epoxy resin.</p>																					
Solder ability	Immerse the pins melt solder at 260℃+5/-0℃ for 5 sec.	More then 95% of total area of the pins should be																				



		covered with solder
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**6. Mechanical Test**

Items	Conditions	Specifications
Vibration	600-3300rpm amplitude 1.5mm 3 directions 2 H each	There shall be no damage.
Drop	On maple plate from 1m high 3 times	
Lead pull	Pull with 1kg force for 30 seconds	
Lead bend	90° bending with 500g weigh 2 times	

**7. REMARK**

7.1 Static voltage

Static voltage between signal load & ground may cause deterioration & destruction of the component. Please avoid static voltage.

7.2 Ultrasonic cleaning

Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

7.3 Soldering

Only leads of component may be soldered. Please avoid soldering another part of component.

**8. Packing**

8.1 Dimensions

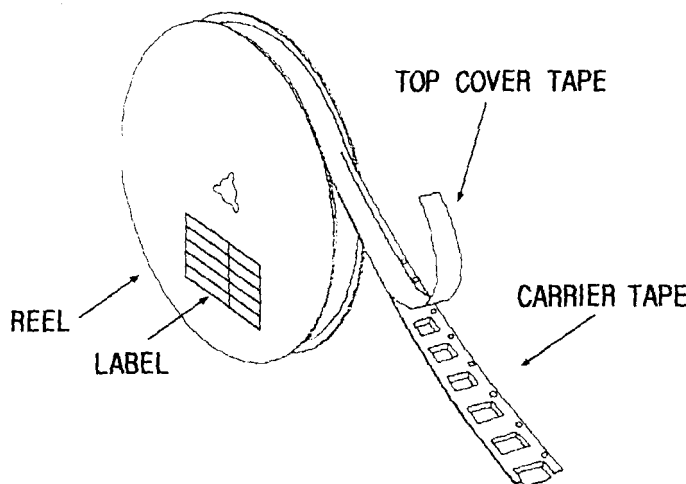
- (1) Carrier Tape: Figure 1
- (2) Reel: Figure 2
- (3) The product shall be packed properly not to be damaged during transportation and storage.

8.2 Reeling Quantity

- 1000 pcs/reel 7"
- 3000 pcs/reel 13"

8.3 Taping Structure

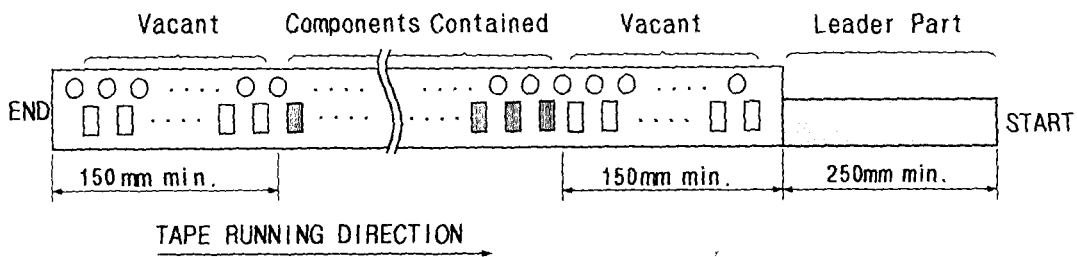
- (1) The tape shall be wound around the reel in the direction shown below.



(2) Label

Device Name	
User Product Name	
Quantity	
Lot No.	

(3) Leader part and vacant position specifications.

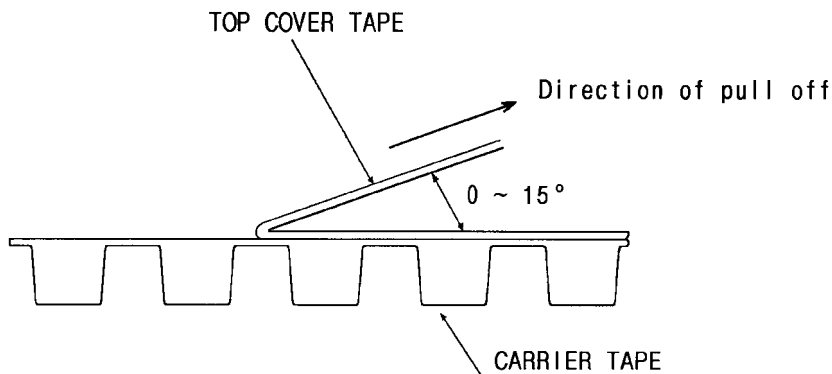


## 9. TAPE SPECIFICATIONS

9.1 Tensile Strength of Carrier Tape: 4.4N/mm width

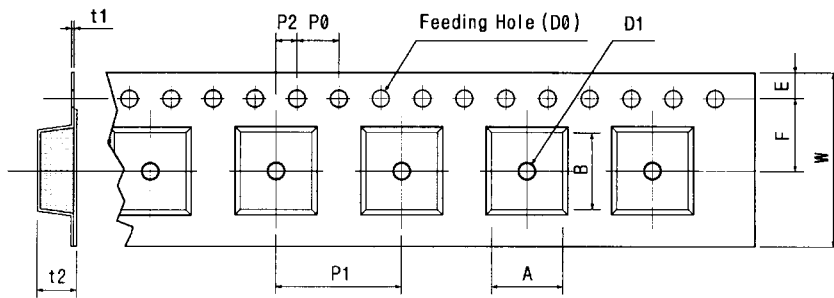
9.2 Top Cover Tape Adhesion (See the below figure)

- (1) pull off angle: 0~15°
- (2) speed: 300mm/min.
- (3) force: 20~70g



[Figure 1] Carrier Tape Dimensions

[Unit:mm]

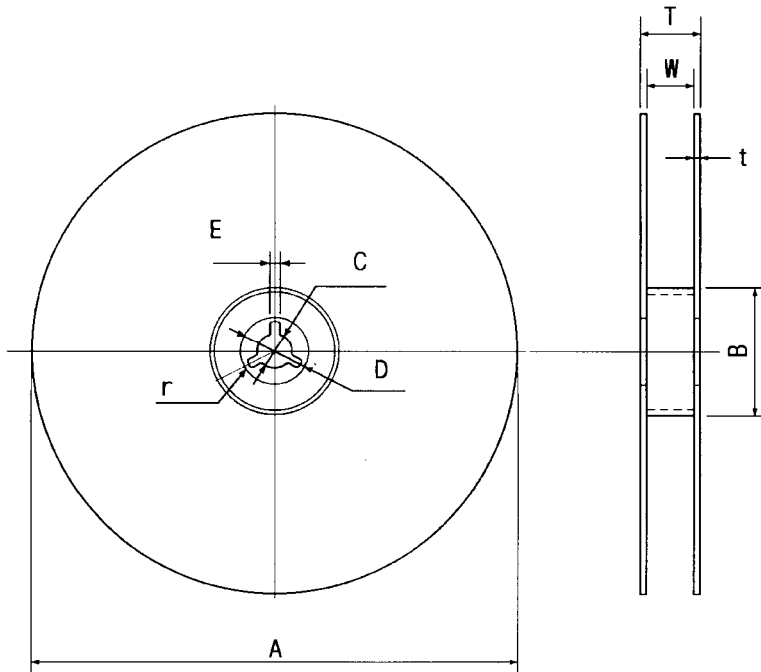


Tape Running Direction

W	F	E	P0	P1	P2	D0	D1	t1	t2	A	B
12.00	5.50	1.75	4.00	8.00	2.00	Ø1.50	Ø1.0	0.25	1.65	4.04	4.10
±0.30	±0.10	±0.10	±0.10	±0.10	±0.10		±0.25	±0.05	±0.10	±0.10	±0.10

[Figure 2]

[Unit:mm]



A	B	C	D	E	W	t	r
Ø330	Ø100	Ø13	Ø21	2	13	3	1.0
±1.0	±0.5	±0.5	±0.8	±0.5	±0.3	max.	max.