

Approved by:

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SPECIFICATION

PRODUCT: SAW FILTER

MODEL: X2703TS3

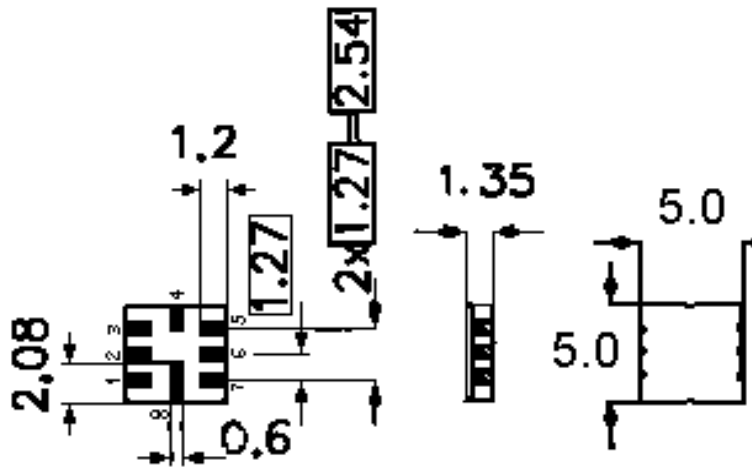
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1. OUTLINE DRAWING AND DIMENSION

Ceramic package QCC8 (Unit:mm)



Pin configuration	
6.	Ant
1.	Rx
3.	Tx
5.7.	Ant ground
2.	Tx ground
4.8.	Case/Rx ground

2. MARKING

HDD
902

- ① Logo: HD
- ② Model No.: D902

3. PERFORMANCE

3-1. APPLICATION

SAW Duplexer for Cordless Telephone
Center Frequency Rx(f_R): 903.75MHz
Center Frequency Tx(f_T): 926.25MHz

3-2. MAXIMUM RATING

CHARACTERISTICS	RATING	UNITS
DC Permissive Voltage	0	V
Maximum Input Power	5	dBm
Operating Temperature Range	-20 ~ +60	$^{\circ}$ C
Storage Temperature Range	-40 ~ +85	$^{\circ}$ C

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3 -3. ELECTRICAL CHARACTERISTICS

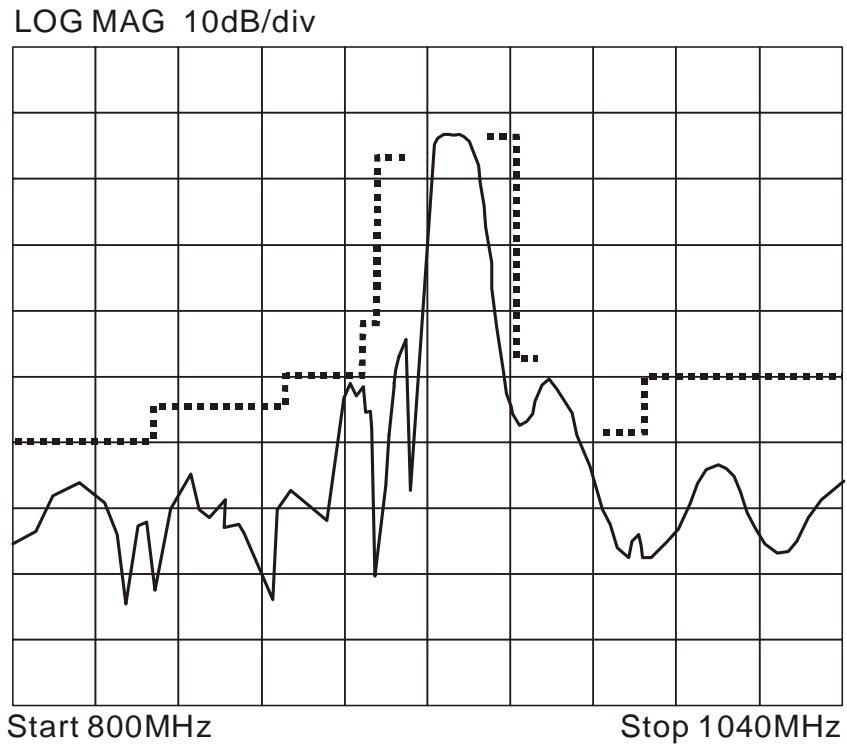
3-3-1. TABLE

CHARACTERISTICS	Frequency	Specification
Center Frequency Rx (f_R) Center Frequency Tx (f_T)	903.75MHz 926.25MHz	
Passband Width at 3dB		$f_R \pm 1.0\text{MHz}$ Min. $f_T \pm 1.0\text{MHz}$ Min.
Insertion Loss	$f_R - 1.0\text{MHz} \sim f_R + 1.0\text{MHz}$ $f_T - 1.0\text{MHz} \sim f_T + 1.0\text{MHz}$	4.5dB Max. 4.5dB Max
Passband Ripple	$f_R - 1.0\text{MHz} \sim f_R + 1.0\text{MHz}$ $f_T - 1.0\text{MHz} \sim f_T + 1.0\text{MHz}$	1.5dB Max. 1.5dB Max.
StopBand AttenuationTx	450.00MHz ~ 840.00MHz 840.00MHz ~ 882.00MHz 882.00MHz ~ 903.50MHz 903.50MHz ~ 906.20MHz 935.00MHz ~ 946.00MHz 972.00MHz ~ 985.00MHz 985.00MHz ~ 1350.00MHz 1350.00MHz~1800.00MHz	45 dB Min 40 dB Min 35 dB Min 30 dB Min 35 dB Min 42 dB Min 38 dB Min 25 dB Min
Stop Band Attenuation Rx	450.00MHz ~ 840.00MHz 840.00MHz ~ 855.00MHz 855.00MHz ~ 884.00MHz 884.00MHz ~ 889.50MHz 923.80MHz ~ 927.60MHz 945.20MHz ~ 960.00MHz 960.00MHz ~ 1050.00MHz 1050.00MHz~1350.00MHz 1350.00MHz~1800.00MHz	45 dB Min 42 dB Min 30 dB Min 35 dB Min 40 dB Min 20 dB Min 42 dB Min 38 dB Min 21 dB Min
Isolation between Rx and Tx	$f_R - 1.0\text{MHz} \sim f_R + 1.0\text{MHz}$ $f_T - 1.0\text{MHz} \sim f_T + 1.0\text{MHz}$	35 dB Min 35 dB Min
Terminating Impedance (Z_0)		50 Ω

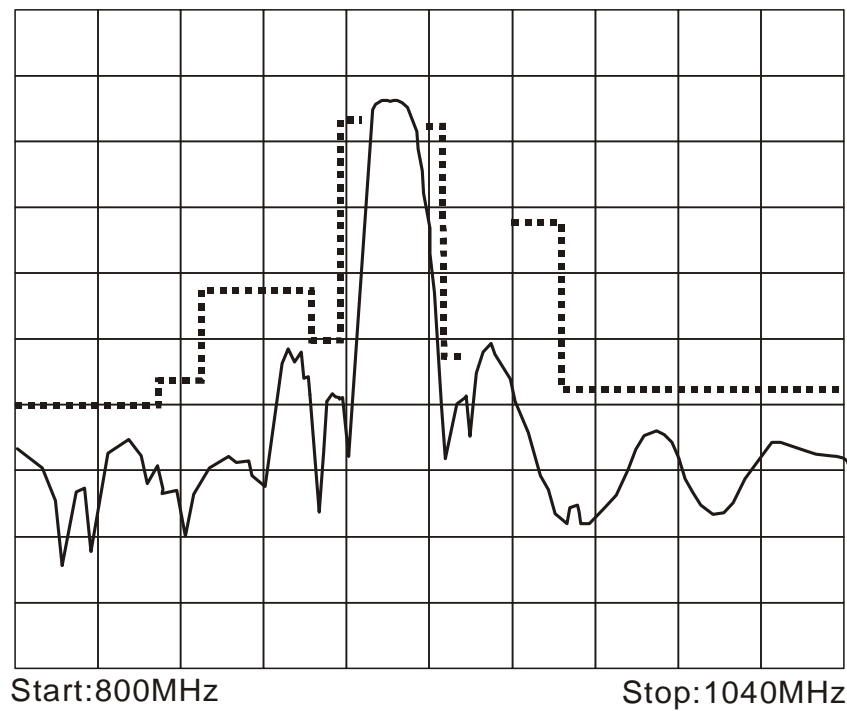
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3-3-2. GRAPH

1. Frequency response(Tx → ANT)

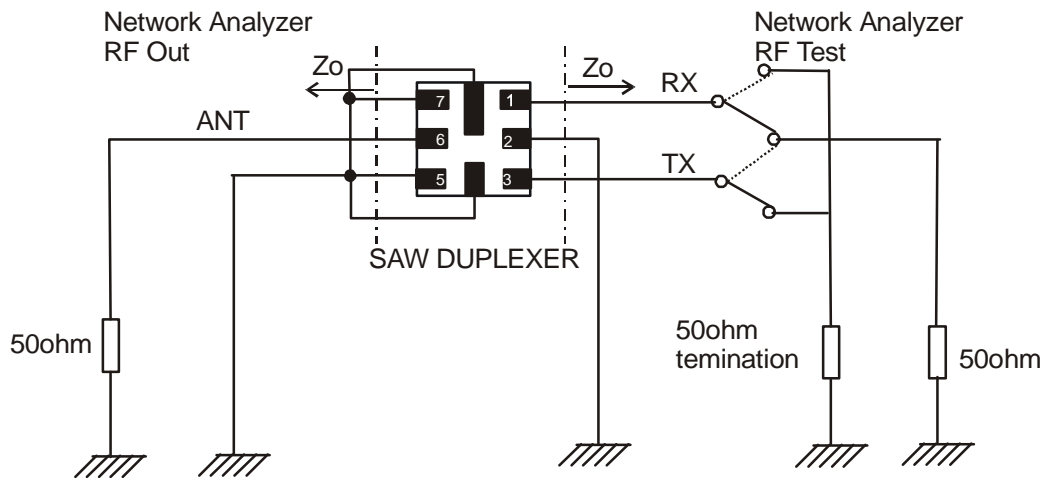
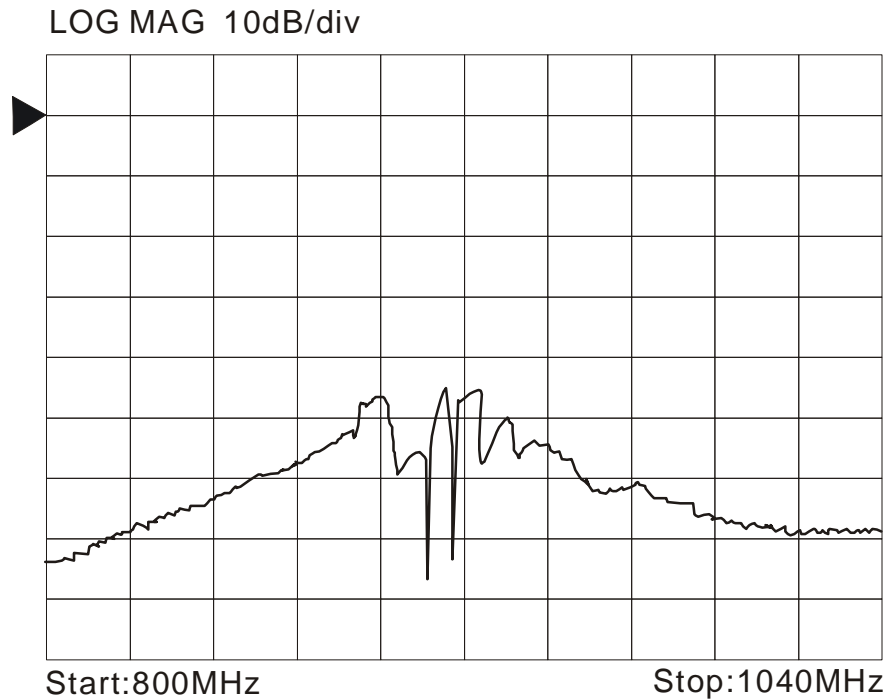


2. Frequency response (ANT → Rx)



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③ Frequency response (Tx→Rx)



4. RELIABILITY

4-1. LIFE TESTT

ITEM	TEST CONDITION	LIMIT
High Temperature Exposure Low Temperature Exposure Moisture Resistance	Ta = + 85 ± 2°C, 100H Ta = -30 ± 2°C, 100H Ta = + 40 ± 2°C, RH 95%, 120H	After the test, specimen would be kept at room temperature for 2 hours. Specimen shall meet the electrical specification.

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4-2. HEAT CYCLE, SOLDERING TEST

ITEM	TEST CONDITION	LIMIT
Temperature Cycle	-20 ⁰ C,30min ← → +110 ⁰ C,30min 10 cycle	Same as 4-1
Solder ability	Immerse in soldering bath at 230 ± 5 ⁰ C, 5 ± 1sec.	More than 3/4 area If the soldering pad must be covered with new solder.
Resistance to Soldering Heat (Reflow)	Preheat: 180 ⁰ C, 2min. Reflow: 240 ⁰ C, 10sec.	Same as 4-1

4-3. MECHANICAL TEST

ITEM	TEST CONDITION	LIMIT
Vibration	Amplitude=1.5mm, 10 ← → 55Hz, sweep time=1min, 3direction each 2H Peak	Same as 4 -1
Shock	acceleration=1500G, durati on=0.5msec, wave form=half-sin, 6 direction each 3 shocks.	

5. CAUTION

- 5-1. This is an electrostatic sensitive device. Please avoid static voltage during operation and storage.
- 5-2. Sudden change of temperature shall be avoided ,deterioration If the characteristics can occur.
- 5-3. Ultrasonic vibration may cause deterioration and destruction of the components
Please avoid ultrasonic cleaning.

6. Packing

6.1 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.

6.2 Reeling Quantity

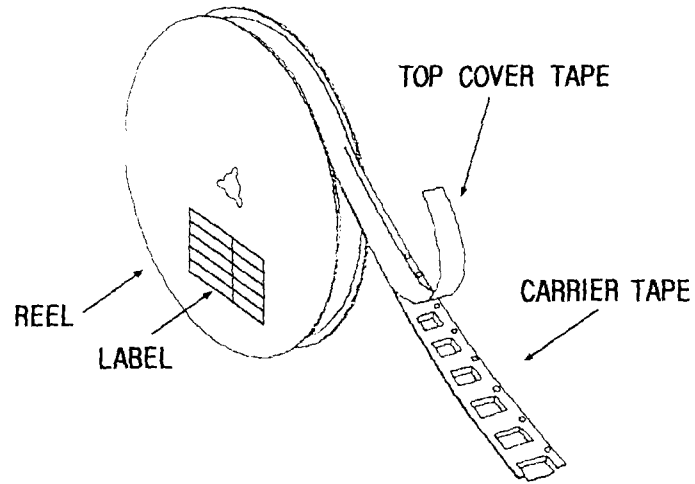
1000 pcs/reel 7”

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3000 pcs/reel 13"

6.3 Taping Structure

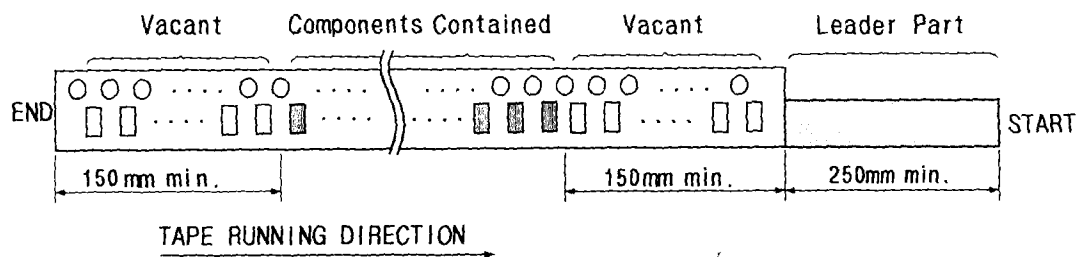
(1) The tape shall be wound around the reel in the direction shown below.



(2) Label

Device Name	
User Product Name	
Quantity	
Lot No.	

(3) Leader part and vacant position specifications.



7. TAPE SPECIFICATIONS

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

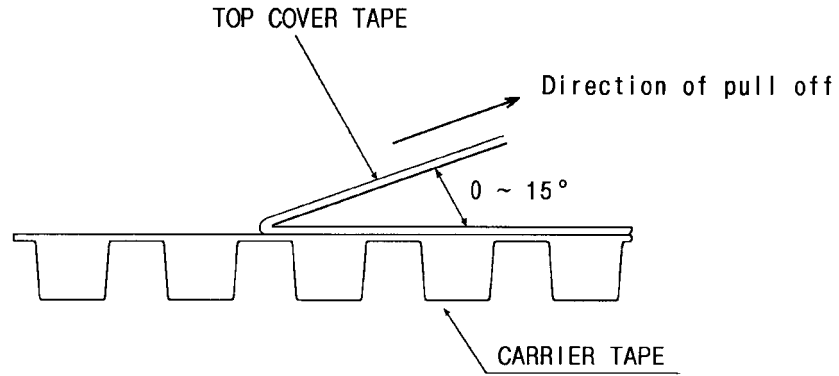
7.2 Top Cover Tape Adhesion (See the below figure)

(1) pull off angle: 0~15°

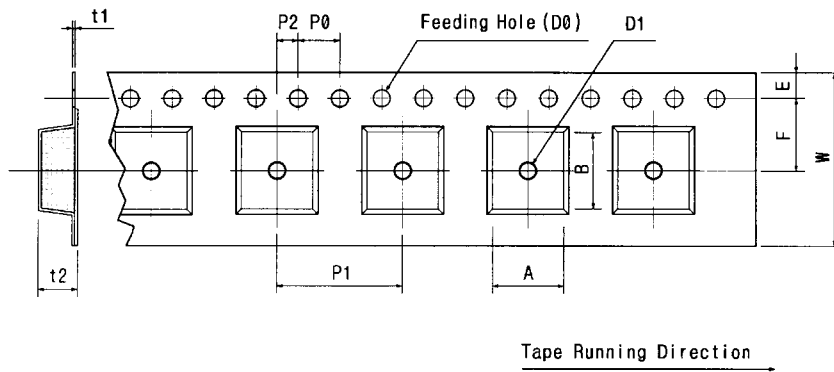
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(2) speed: 300mm/min.

(3) force: 20~70g



[Figure 1] Carrier Tape Dimensions



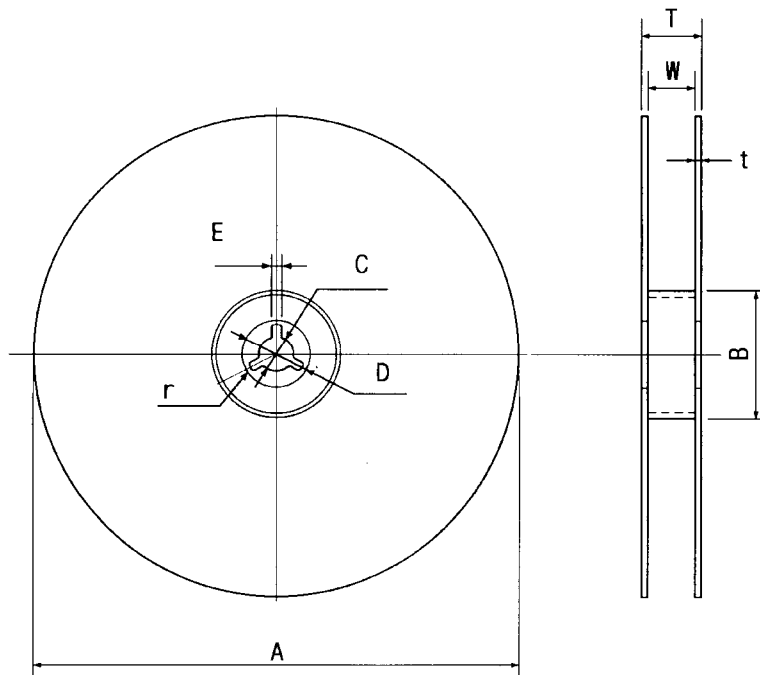
[Unit:mm]

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		0.25	1.65	4.04	4.10
±0.30	±0.10	±0.10	±0.10	±0.10	±0.10			±0.05	±0.10	±0.10	±0.10

[Figure 2]

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[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.

8. REVISION

Date	Page	Revision	Reason