

## TMX U388

### SAW Filter datasheet

5.0 x 5.0 x 1.3 mm, SMD

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## TMX U388

SAW Bandpass Filters | Wireless Communications

### Features

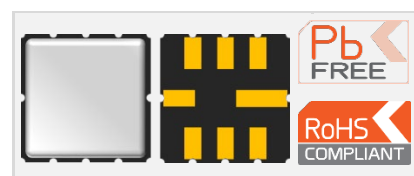
#### Features

- 433.92 MHz center frequency
- Ceramic package for Surface Mounted Technology
- Low Loss: 2.0 dB typical value within PassBand  
Width 433.80 MHz to 434.12 MHz

#### Applications

- Remote control - RF
- Wireless applications:
  - Home appliances
  - Security systems

5.0 x 5.0 x 1.3 mm



### Maximum Ratings

Parameter	Min.	Typ.	Max.	Unit
Storage temperature range ( $T_{stg}$ )	-45		85	°C
Operating temperature range ( $T_A$ )	-40		85	°C
DC Voltage ( $V_{DC}$ )			10	V
AC Voltage ( $V_{PP}$ )			10 (50Hz/60Hz)	V
Input Power			10	dBm

### Frequency and Electrical Characteristics

Parameter	Min.	Typ. <sup>1</sup>	Max.	Unit
Source Impedance <sup>2</sup> (single ended)		50		$\Omega$
Load Impedance <sup>2</sup> (single ended)		50		$\Omega$
Center Frequency (fc)		433.92		MHz
Bandwidth (BW, passband width)		0.32		MHz
Relative attenuation				dB
From 10.0 to 414.0 MHz	45.0	50.0		
From 414.0 to 428.0 MHz	40.0	45.0		
From 428.0 to 432.92 MHz	15.0	20.0		
From 434.92 to 442.0 MHz	10.0	15.0		
From 442.0 to 550.0 MHz	35.0	40.0		
From 550.0 to 1000.0 MHz	45.0	50.0		
Insertion Loss (IL, 433.80 – 434.12 MHz)		2.0	3.5	dB
Pass band				dB
From 433.76 to 434.16 MHz		1.0	2.0	
External impedance match				
Series inductance L		33		nH
Shunt capacitance C		5.6		pF
Temperature coefficient of frequency ( $TC_f$ )		-0.03		ppm/K

<sup>1</sup> Typical values are nominal performances at room temperature

<sup>2</sup> External matching Circuit is required (see drawing below)

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## Model outline, pin connection and marking

**TOP VIEW**

5.0 ± 0.2 SQ

U388  
T227AA

**FRONT VIEW**

1.5 max

**SIDE VIEW**

1.0 ± 0.1

**BOTTOM VIEW**

2.08 ± 0.15    1.27 ± 0.1

1.20 ± 0.15

0.6 ± 0.1

0.20R typ.

2.54 ± 0.1

Marking		Note
Line 1	U388	Reference to RakonXpress part number with only the last 4 digits
Line 2	T227AA	T = Partner identifier 2 = Last digit of the year 27 = Number of week in the year AA = Lot number in the week (from AA to ZZ)
Line 3	•	• = Identify black dot

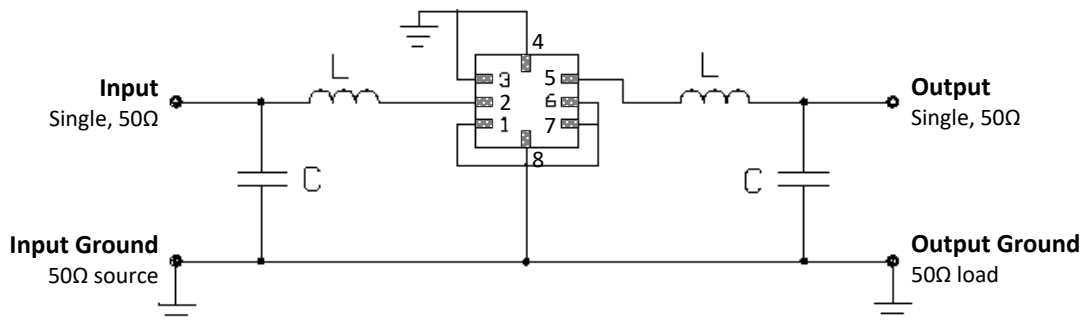
  

Pin	Connections
1	Input Ground
2	Input
5	Output
6	Output Ground
1, 3, 4, 6, 7, 8	Case Ground

Unit: mm

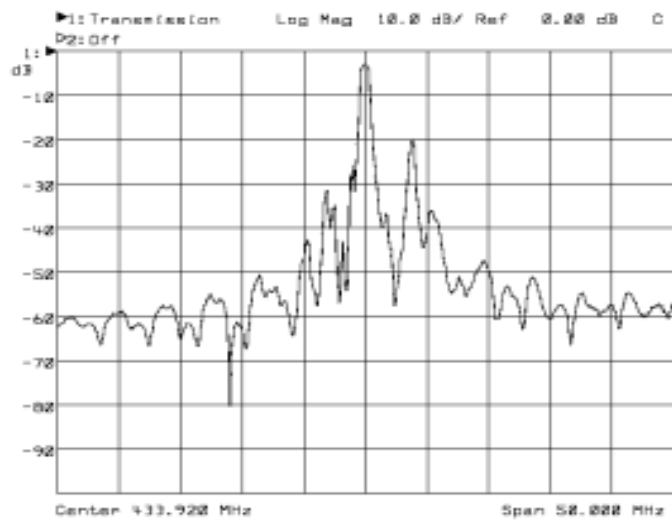
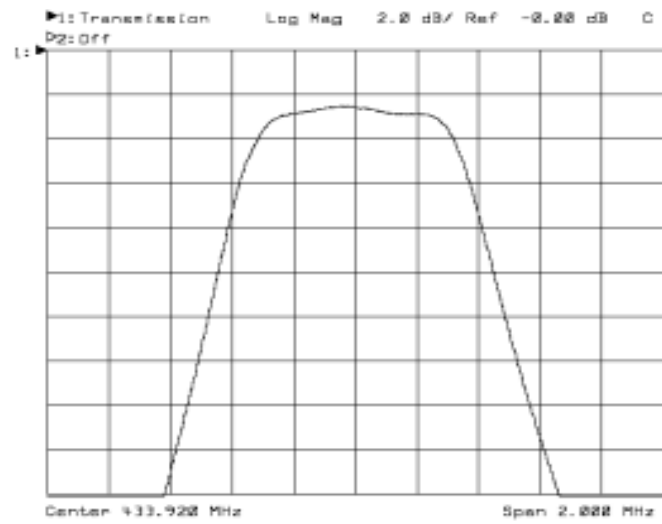
## Test circuit

### 50 Ω / 50 Ω Configuration



Frequency characteristics

TYPICAL S21 RESPONSE



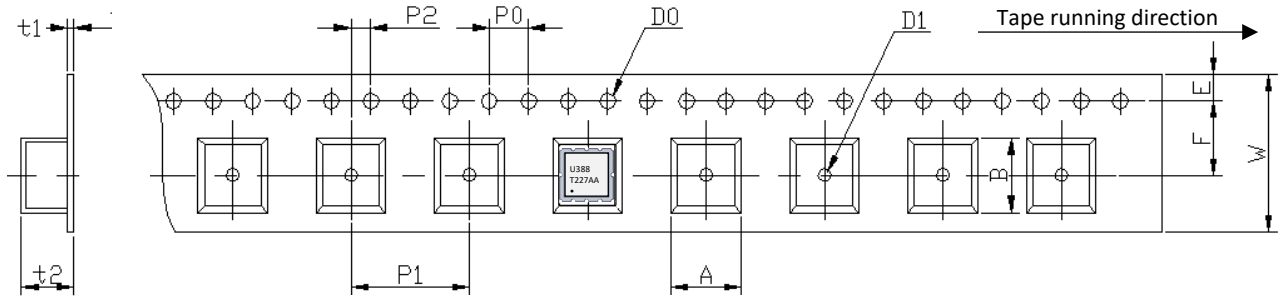
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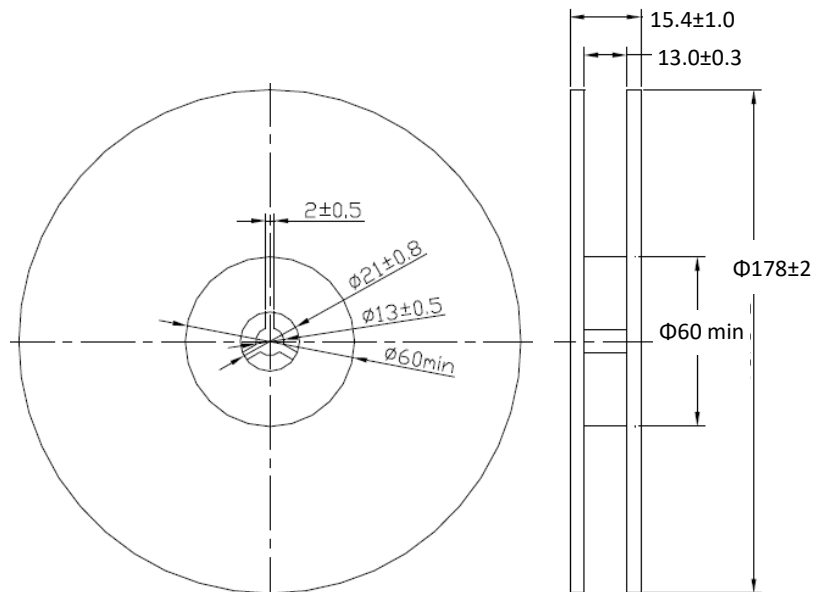
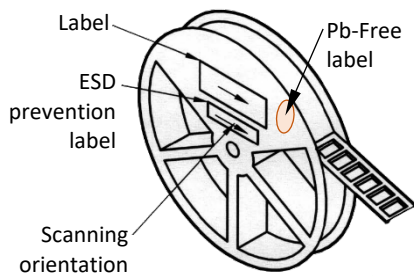
## Packaging

### TAPE DETAILS:



Parameter	Code	Dimension	Tolerance
Height of component hole	A	5.5 max	± 0.1
Width of component hole	B	5.5 max	± 0.1
Diameter of sprocket hole	D <sub>0</sub>	Φ 1.5	± 0.1
Diameter of feed hole	D <sub>1</sub>	Φ 1.5	± 0.25
Pitch of sprocket hole	P <sub>0</sub>	4.0	± 0.2
Length from hole center to component center	P <sub>1</sub>	8.0	± 0.1
Length from Pocket hole center to sprocket hole center	P <sub>2</sub>	2.0	± 0.2
Width of carrier tape	W	12.0	± 0.3
Width of adhesive tape	F	5.5	± 0.1
Gap of hold down tape and carrier tape	E	1.75	± 0.1
Thickness of Embossed tape sheet	t1	0.31 max	
Thickness of Embossed tape	t2	1.95 max	

### REEL DETAILS:



### NOTE:

- Unit: mm
- Standard Packing Quantity (SPQ) is 3000 pieces/ reel