TMX FT06

SAW Filter datasheet

5.0 x 5.0 mm, SMD

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Issue: Rev 2, 14 December 2022

TMX FT06

SAW Bandpass Filters | Wireless Communications

Features

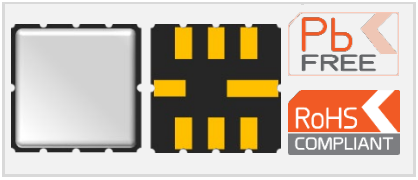
Features

- 433.42 MHz center frequency
- Ceramic package for Surface Mounted Technology

Applications

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

5.0 x 5.0 mm



Maximum Ratings

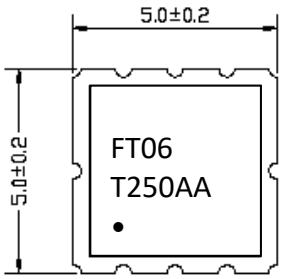
Parameter	Min.	Typ.	Max.	Unit
Storage temperature range (T_{stg})	-40		85	°C
Operating temperature range (T_A)	-40		85	°C
DC voltage (V_{DC})			12	V
Maximum Input Power			10	dBm

Frequency and Electrical Characteristics (Reference temperature @ 25°C)

Parameter	Min.	Typ.[1]	Max.	Unit
Center frequency (fc)		433.42		MHz
Bandwidth (BW, passband width)	0.32			MHz
Insertion Loss (IL, 433.30 – 433.620 MHz)		2.0	4.5	dB
Amplitude ripple (433.26 – 433.620 MHz)		1.0	2.0	dB
Relative attenuation (relative to IL)				
From 10.00 to 414.00 MHz	45.0	50.0		
From 414.00 to 428.00 MHz	40.0	45.0		
From 428.00 to 432.42 MHz	15.0	20.0		dB
From 434.42 to 442.00 MHz	10.0	15.0		
From 442.00 to 550.00 MHz	35.0	40.0		
From 550.00 to 1000.00 MHz	45.0	50.0		
Temperature coefficient of frequency (TCf)		-0.03		ppm/K
External Impedance Match				
Series Inductance L		33		nH
Shunt Capacitance C		56		pF

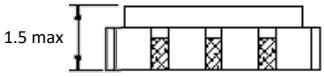
Model Outline, Pin Connection and Marking

TOP VIEW



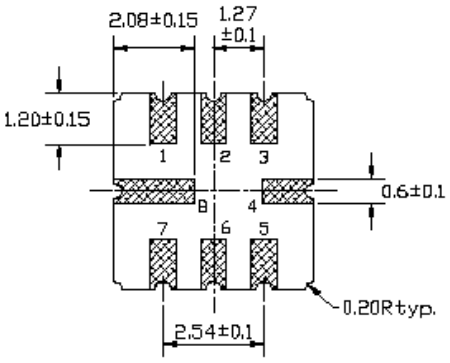
Marking		Note
Line 1	FT06	Reference to RakonXpress part number with only the last 4 digits
Line 2	T250AA	T = Partner identifier 2 = Last digit of the year 50 = Number of week in the year AA = Lot number in the week (from AA to ZZ)
Line 3	•	• = Identify black dot

FRONT VIEW



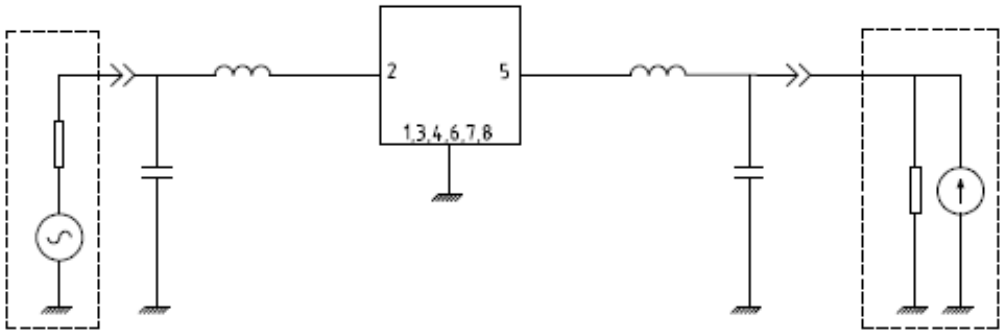
SIDE VIEW

BOTTOM VIEW

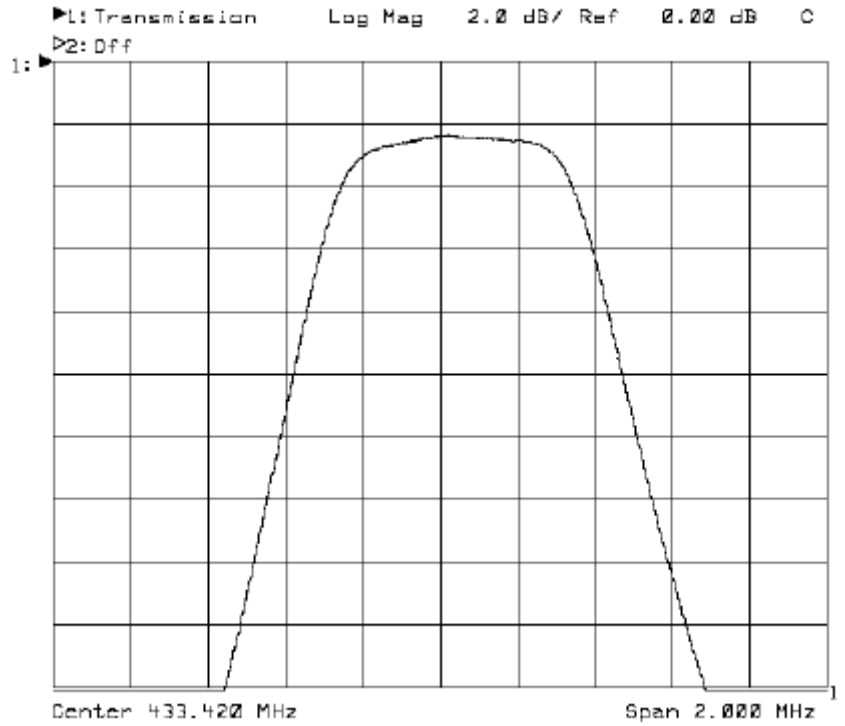


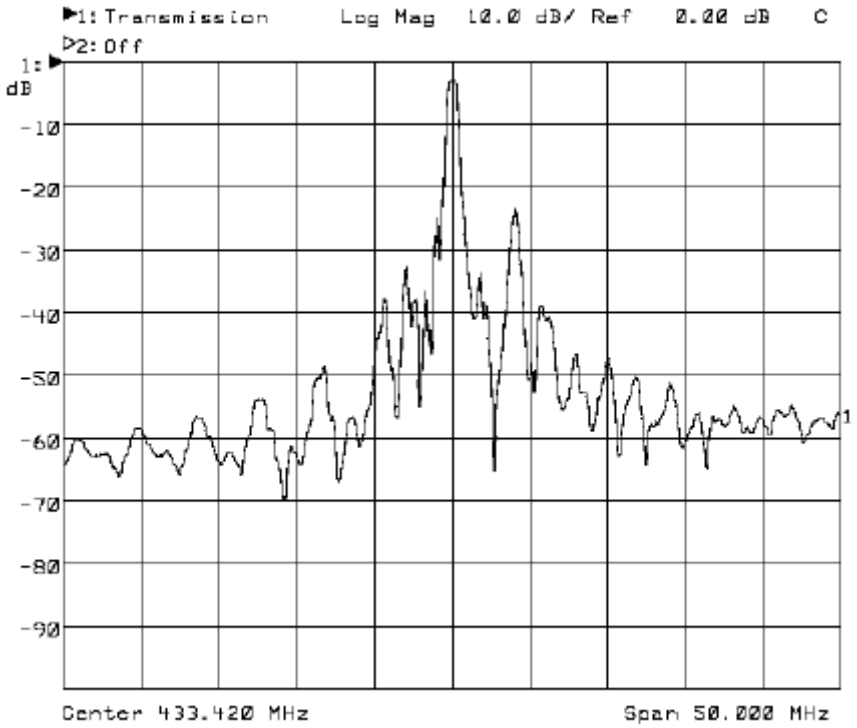
Pin	Connections
1	Input Ground
2	Input
5	Output
6	Output Ground
4, 8	Case Ground
Other	Ground

Test Circuit



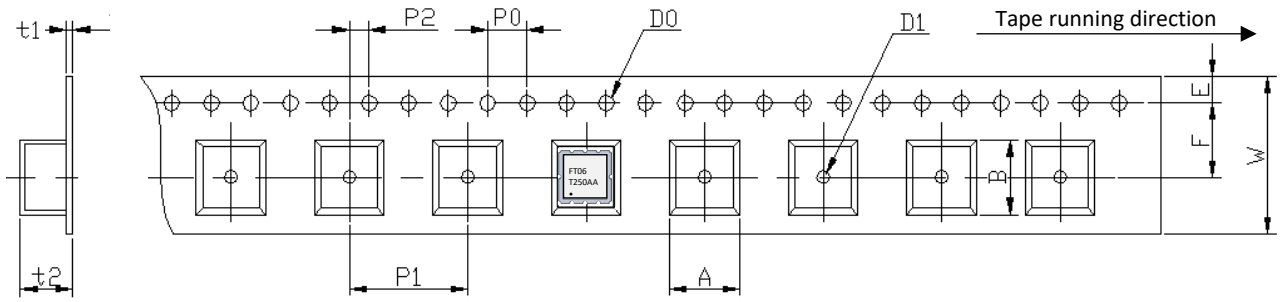
Frequency Characteristics





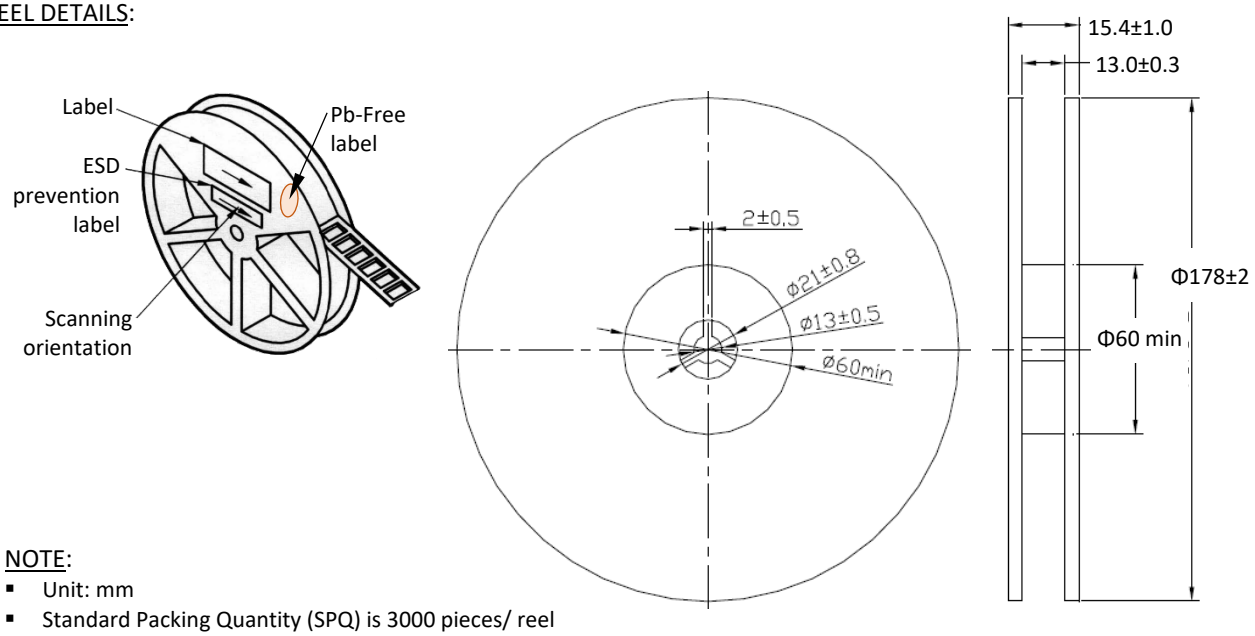
Packaging

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_0	Φ 1.5	± 0.1
Diameter of feed hole	D_1	Φ 1.5	± 0.25
Pitch of sprocket hole	P_0	4.0	± 0.2
Length from hole center to component center	P_1	8.0	± 0.1
Length from Pocket hole center to sprocket hole center	P_2	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 Ebossed tape sheet	t1	0.31 max	
Thickness of Ebossed tape	t2	1.95 max	

REEL DETAILS:



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

Reliability Test

Parameter	Test condition / Description
Thermal Shock	The components shall remain within the electrical specifications after being kept at the condition of heat cycle conditions: TA=-40° C ±3° C, TB=85° C ±2° C, t1=t2=30min, switch time ≤3min & cycle time: 100 times, recovery time: 2h±0.5h.
Temperature Storage	High Temperature Storage: The components shall remain within the electrical specifications after being kept at the 85°C ±2°C for 500 hours, recovery time: 2h ±0.5h. Low Temperature Storage: The components shall remain within the electrical specifications after being kept at the -40°C ±3°C for 500 hours, recovery time: 2h ±0.5h.
Humidity test	The components shall remain within the electrical specifications after being kept at the condition of ambient temperature 60°C ±2°C, and 90~95% RH for 500 hours.
Drop test	The components shall remain within the electrical specifications after random free drops 10 times from height of 1.0 meter onto concrete floor, and the specimens shall meet the electrical specifications shall meet the electrical specifications in table 5, external visual inspection.
Vibration Fatigue	The components shall remain within the electrical specifications after loaded vibration at 10~55Hz, amplitude 1.5mm, X, Y, Z, direction, during 2 hours.
Mechanical Shock	The components shall remain within the electrical specifications after 1000 shocks, acceleration 392 m/s^2 , duration 6ms.
Terminal Strength	The force 10±1 seconds of 19.6N is applied to each terminal, and 45° in the same direction 2 times with 2N bending force (Exception: SMD)
Resistance to soldering heat	The components shall remain within the electrical specifications after it soldered on the 1mm-thickness PCB board and dipped in the solder at 260°C ±5°C for 10 ±1 seconds. The components shall remain within the electrical specifications after it soldered by electric iron, solder at 350°C ±10°C for 3~4 seconds, recovery time: 2h ±0.5h.
Solderability test	At the condition of temperature 245°C ±5°C Depth: DIP 2/3, SMD 1/5, time: 3.0s-5.0s, 80% or more of the immersed surface shall be covered with solder and well-proportioned.
Note	As a result of the particularity of inner structure of SAW products, the components can easily be breakdown by electrostatic shock; so it's mandatory to pay attention to ESD protect during the tests.