

TMX HT07

SAW Filter datasheet

3.0 x 3.0 x 1.1 mm, SMD

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Features

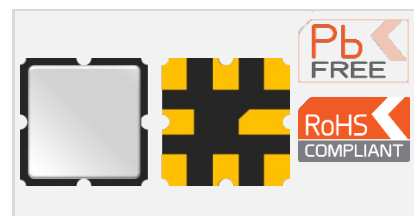
Features

- 433.6 MHz center frequency
- Ceramic package for Surface Mounted Technology
- PassBand width: 433.300 to 433.900 MHz
- Low amplitude ripple
- L C matching network required for operation at 50 Ω

Applications

- Wireless applications:

3.0 x 3.0 x 1.1 mm



Maximum Ratings

Parameter	Min.	Typ.	Max.	Unit
Storage temperature range (T_{stg})	-40		85	$^{\circ}\text{C}$
Operating temperature range (T_A)	-20		85	$^{\circ}\text{C}$
DC permissive voltage			12	V
Maximum Input Power Level			15	dBm
ESD Voltage (HB)			150	V

Frequency and Electrical Characteristics (Reference temperature @ 25 $^{\circ}\text{C}$)

Parameter	Min.	Typ. ¹	Max.	Unit
Center frequency (f_c)		433.92		MHz
Bandwidth (BW, passband width)	0.60			MHz
Insertion Loss (IL, 433.300 – 433.900 MHz)		2.8	3.5	dB
Amplitude ripple (433.300 – 433.900 MHz)		0.5	1.2	dB
Absolute Attenuation				
From 0 to 418.5 MHz	40	45		dB
From 418.5 to 430.0 MHz	30	35		
From 448.0 to 465.0 MHz	35	40		
From 465.0 to 1500 MHz	40	45		
Source impedance (Single ended)		50		Ω
Load impedance (Single ended)		50		Ω

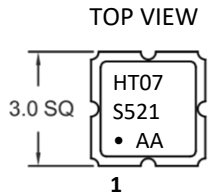
¹ Typical values are nominal performances at room temperature

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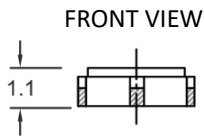
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Model Outline, Pin Connection and Marking

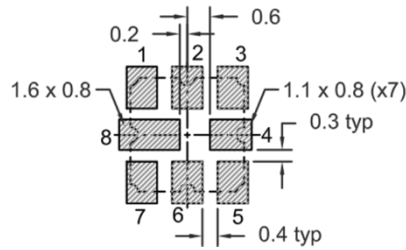
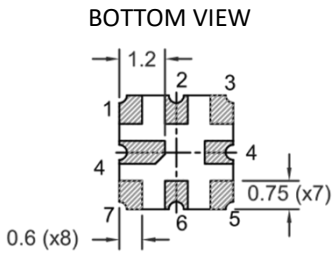


Marking		Note
Line 1	HT07	Rakonxpress designation
Line 2	S521	S = Production Code 5 = Year 2015 21 = Week 21
Line 3	•AA	• = Identify black dot AA = Internal Code (Wafer Batch)



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

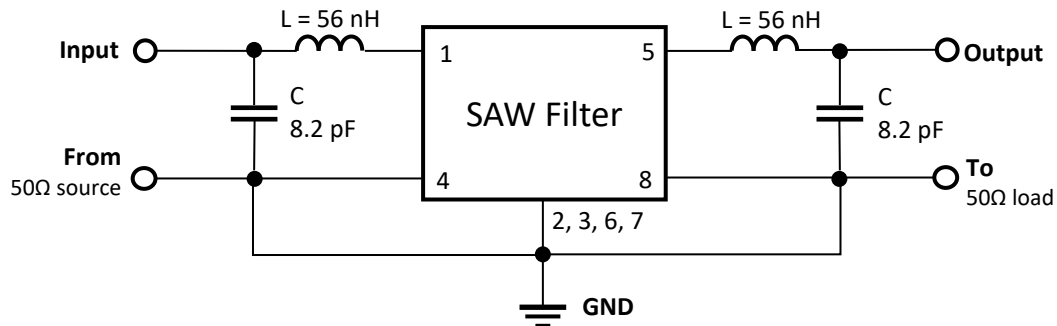
RECOMMENDED PAD LAYOUT TOP VIEW



Unit: mm

Test Circuit

50 Ω unbalanced



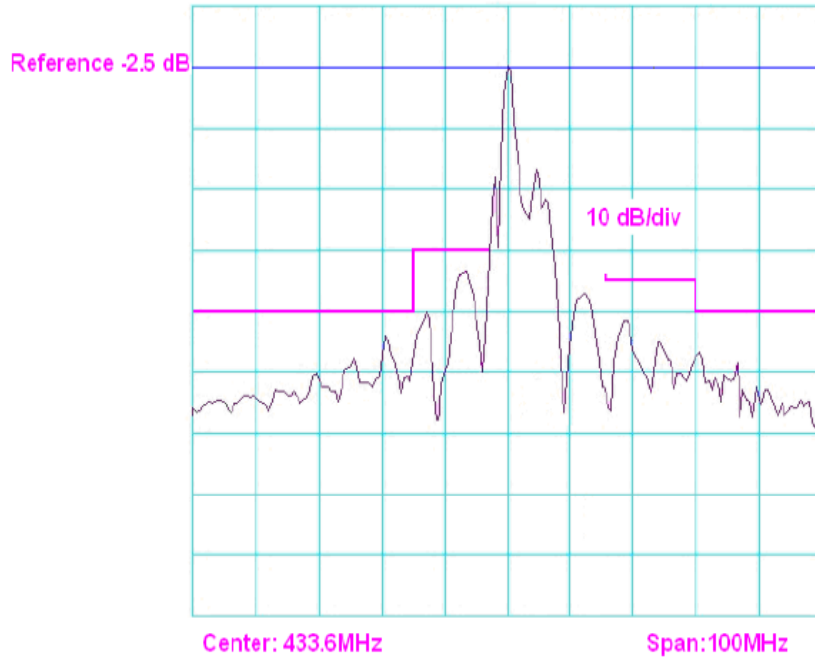
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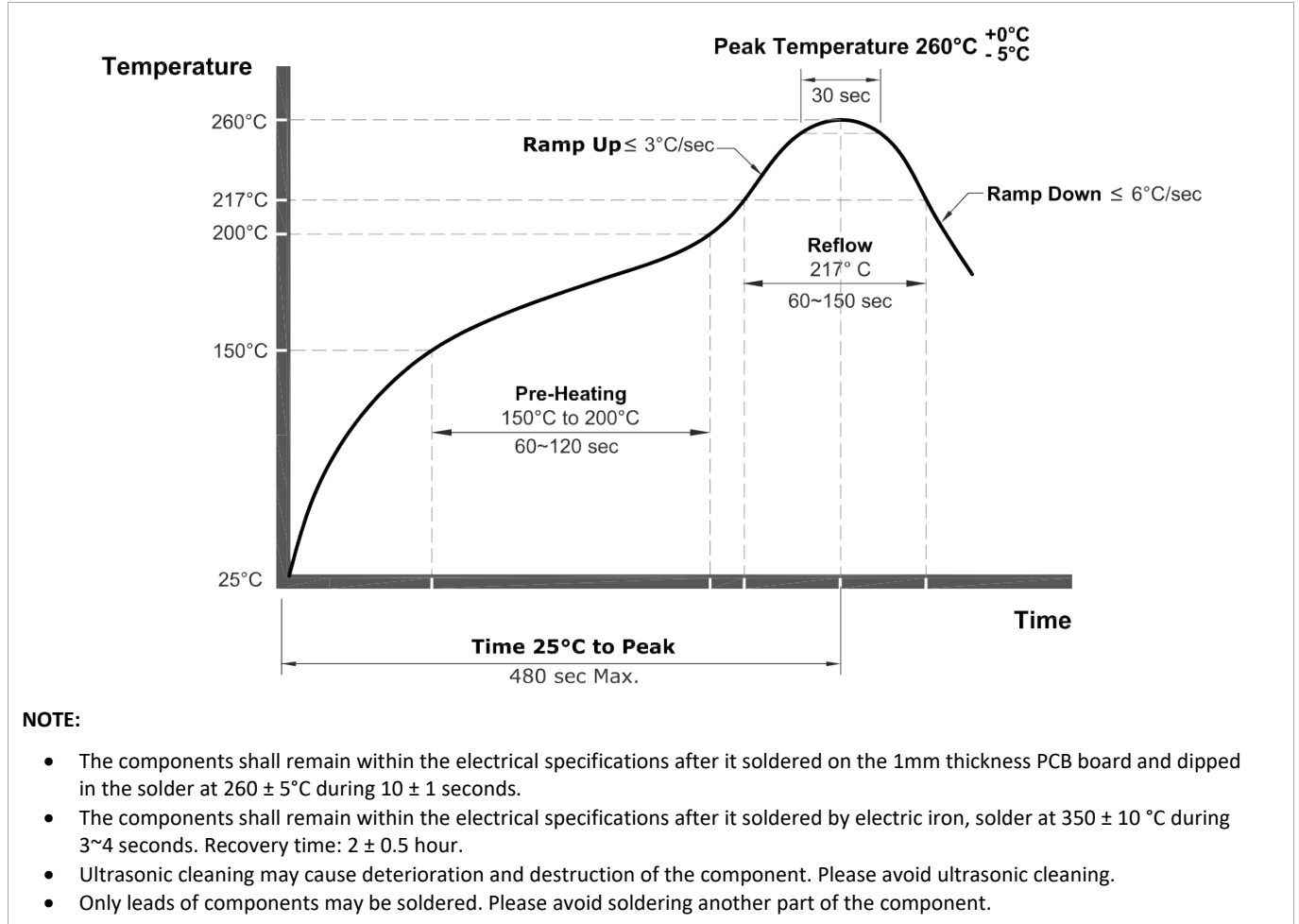
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Frequency Characteristics

TYPICAL S21 RESPONSE



Recommended Reflow Soldering Profile

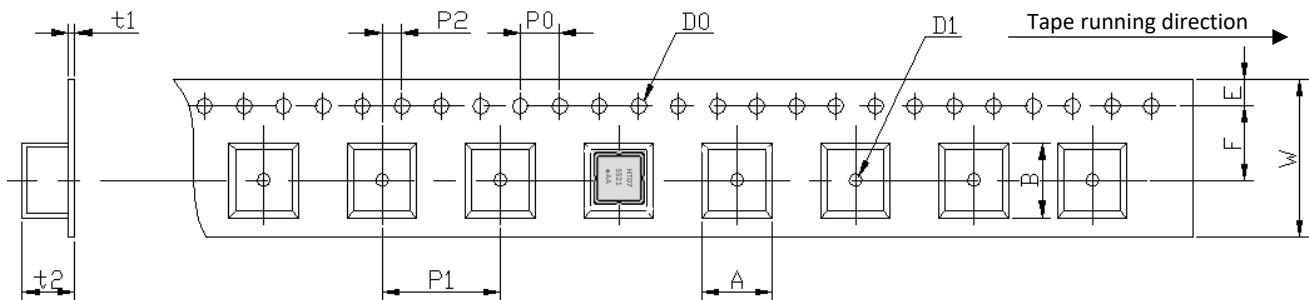
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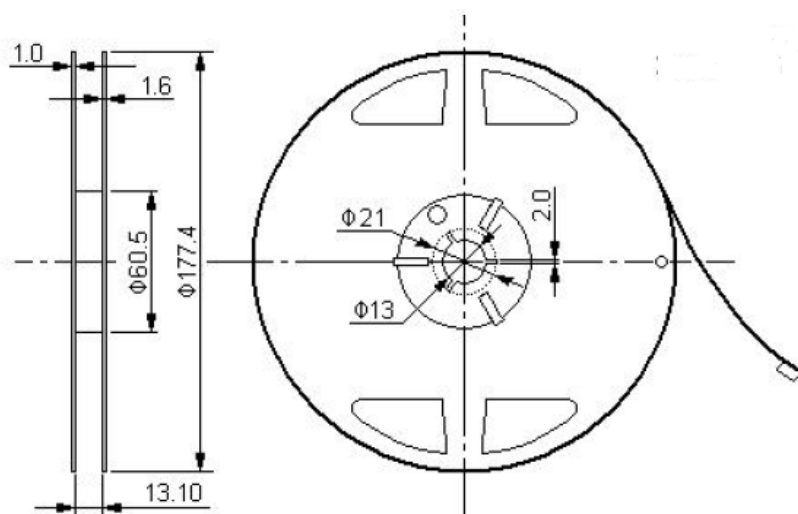
Tape and Reel =

TAPE DETAILS:



Parameter	Code	Dimension	Tolerance
Height of component hole	A	3.3 max	
Width of component hole	B	3.3 max	
Diameter of sprocket hole	D ₀	Φ 1.5	± 0.1
Diameter of feed hole	D ₁	Φ 1.55	± 0.05
Pitch of sprocket hole	P ₀	4.0	± 0.2
Length from hole center to component center	P ₁	4.0	± 0.1
Length from Pocket hole center to sprocket hole center	P ₂	2.0	± 0.05
Width of carrier tape	W	12.0	± 0.1
Width of adhesive tape	F	5.5	± 0.05
Gap of hold down tape and carrier tape	E	1.75	± 0.1
Thickness of Embossed tape sheet	t ₁	0.31 max	
Thickness of Embossed tape	t ₂	1.7 max	

REEL DETAILS:



NOTE:

- Unit: mm
- Standard Packing Quantity (SPQ) is 2000 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.
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.
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.