

TMX IT07

SAW Filter datasheet

3.0 x 3.0 x 1.3 mm, SMD

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Features

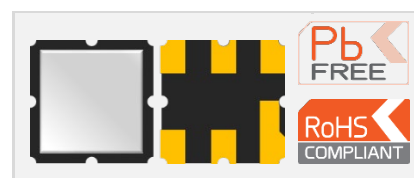
Features

- 1220 MHz center frequency
- Ceramic package for Surface Mounted Technology
- Passband: 40 MHz
- No external matching is required

Applications

- Wireless applications

3.0 x 3.0 x 1.3 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 permissive voltage			12	V
Maximum Input Power Handling			15	dBm

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

Parameter	Min.	Typ. ¹	Max.	Unit
Center frequency (f_c)		1220		MHz
Bandwidth (BW, passband width)	40.00			MHz
Insertion loss (IL, 1200 – 1240 MHz)		2.5	2,7	dB
Amplitude ripple (1200 – 1240 MHz)		0.9	1.5	dB
30 dB Bandwidth		79	85	MHz
Rejection				
From DC to 1160 MHz	40	45		dB
From 1160 to 1185 MHz	20	25		
From 1185 to 1195 MHz		5		
From 1245 to 1255 MHz		5		
From 1255 to 1300 MHz	15	20		
From 1300 to 1500 MHz	40	45		
From 1500 to 1732 MHz	37	43		
VSWR (1200 – 1240 MHz)		1.5	2.0	
Source Impedance ² (Single ended)		50		Ω
Load Impedance ² (Single ended)		50		Ω

¹ Typical values are nominal performances at room temperature

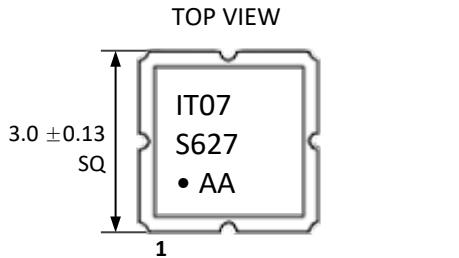
² No external matching is required

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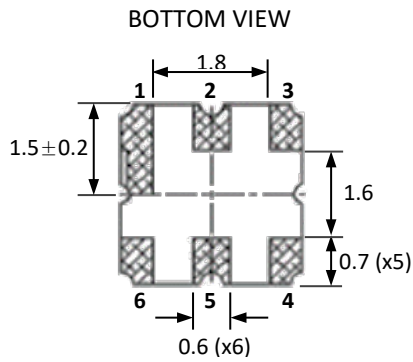
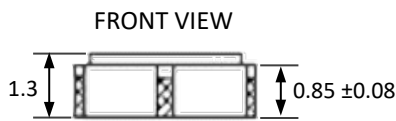
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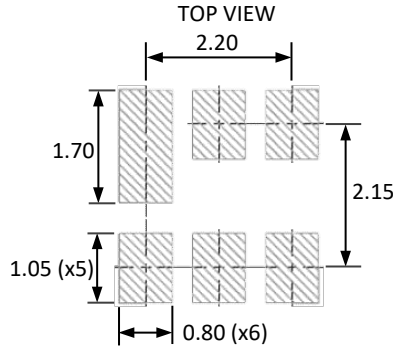
Model Outline, Pin Connection and Marking



Marking	Note
Line 1	IT07 RakoXpress designation
Line 2	S627 S = Production code 6 = The last digit of year 2016 27 = Week 36 of the year
Line 3	•AA • = Identify black dot AA = Internal Code (Wafer Batch)



RECOMMENDED PAD LAYOUT

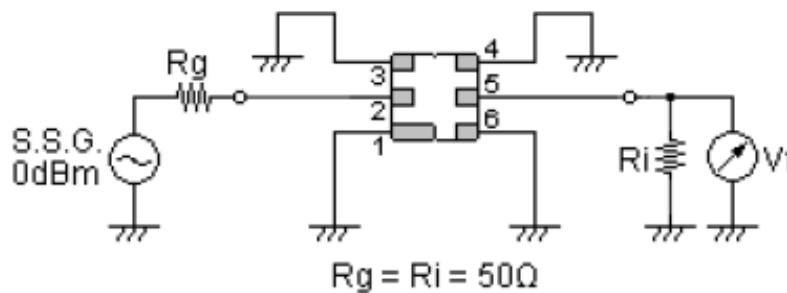


Pin	Connections
2	Input
5	Output
1, 3, 4, 6	Case Ground

Unit: mm

Test Circuit

50 Ω / 50 Ω Configuration

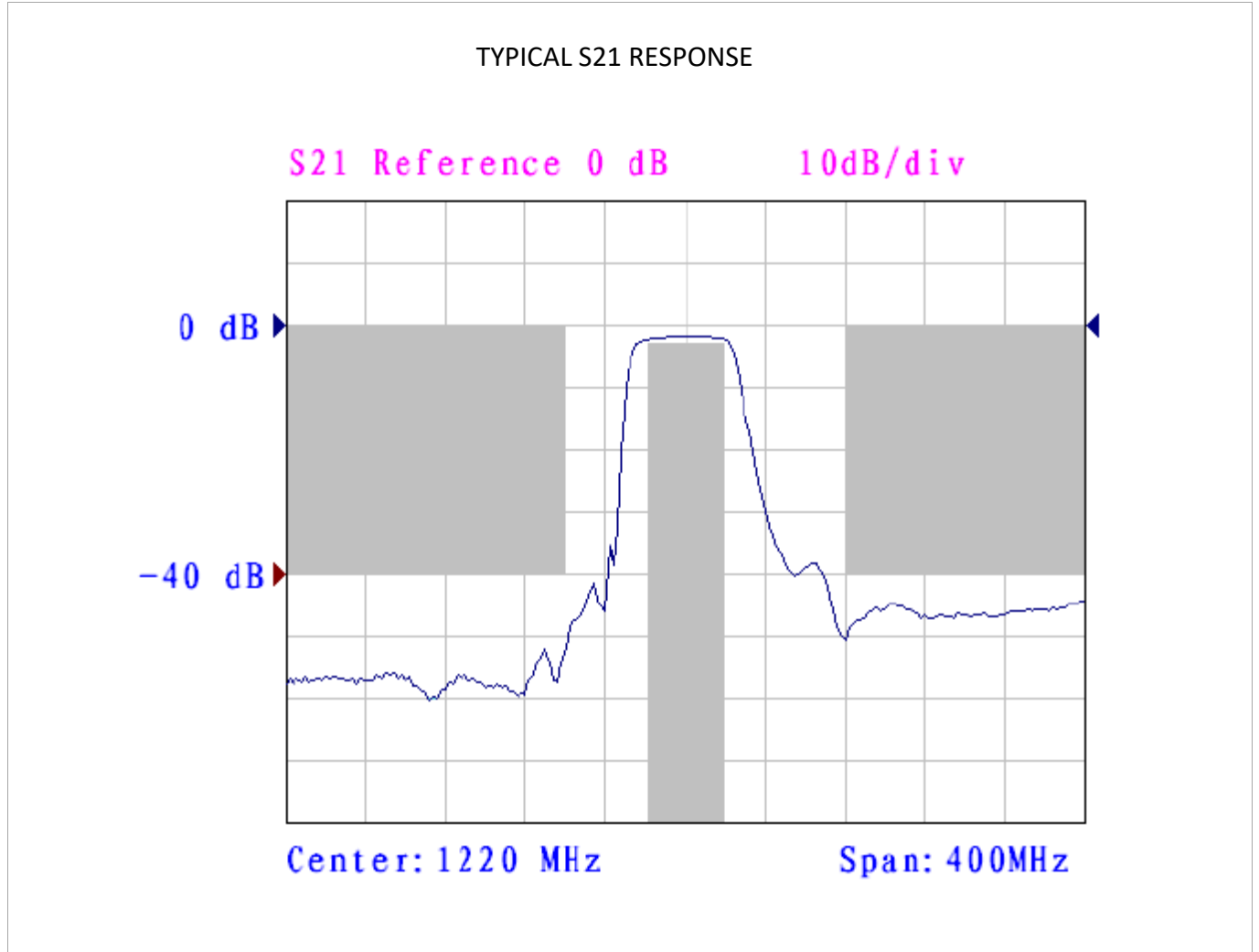


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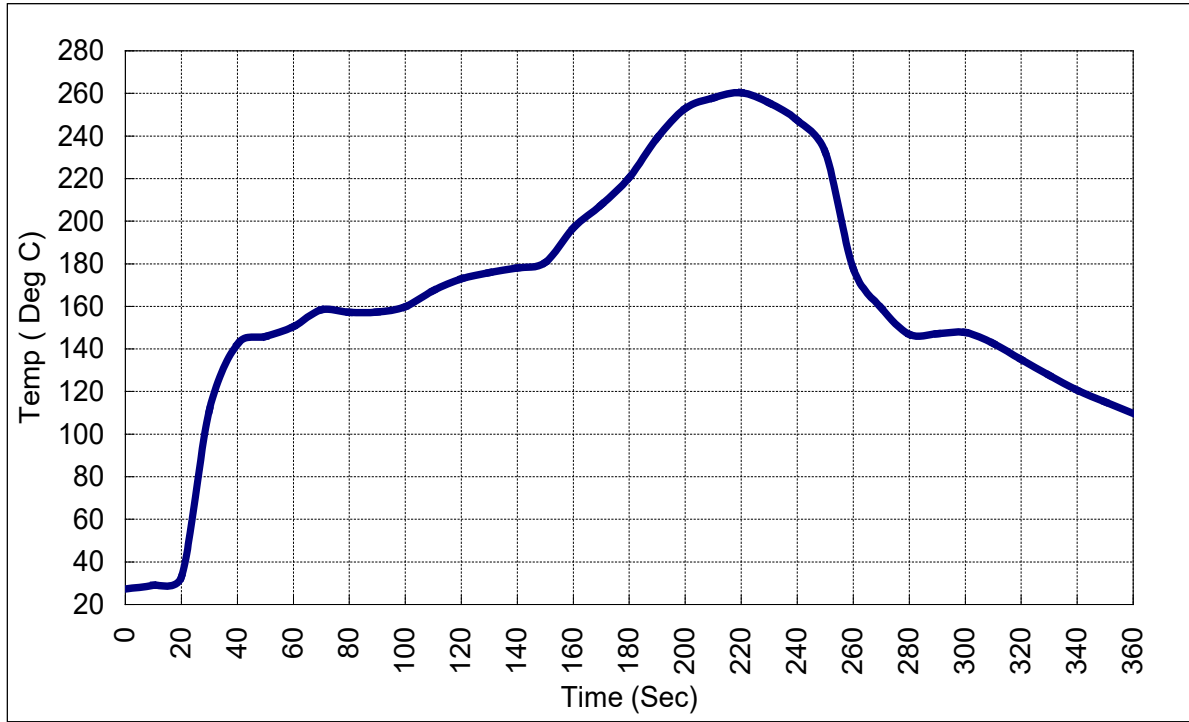
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Frequency Characteristics



Recommended Reflow Soldering Profile



NOTE:

- The components shall remain within the electrical specifications after it soldered on the 1mm thickness PCB board and dipped in the solder at $260 \pm 5^{\circ}\text{C}$ during 10 ± 1 seconds.
- The components shall remain within the electrical specifications after it soldered by electric iron, solder at $350 \pm 10^{\circ}\text{C}$ during 3~4 seconds. Recovery time: 2 ± 0.5 hour.
- Ultrasonic cleaning may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.
- Only leads of components may be soldered. Please avoid soldering another part of the component.

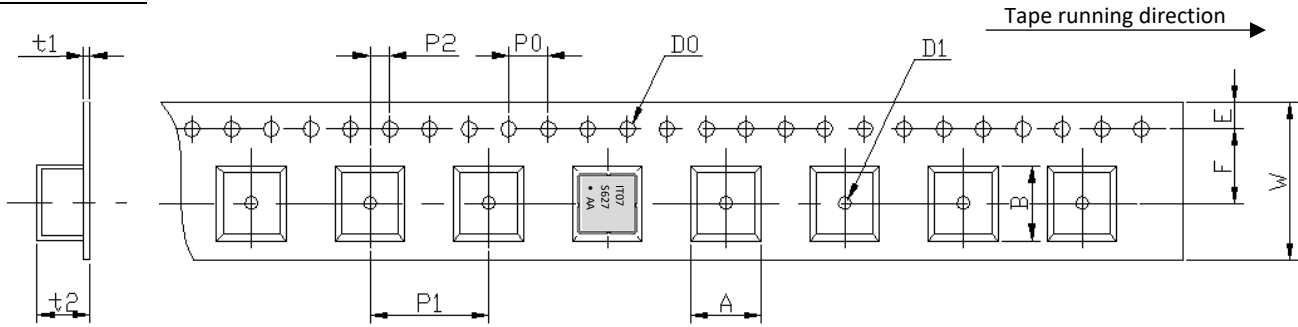
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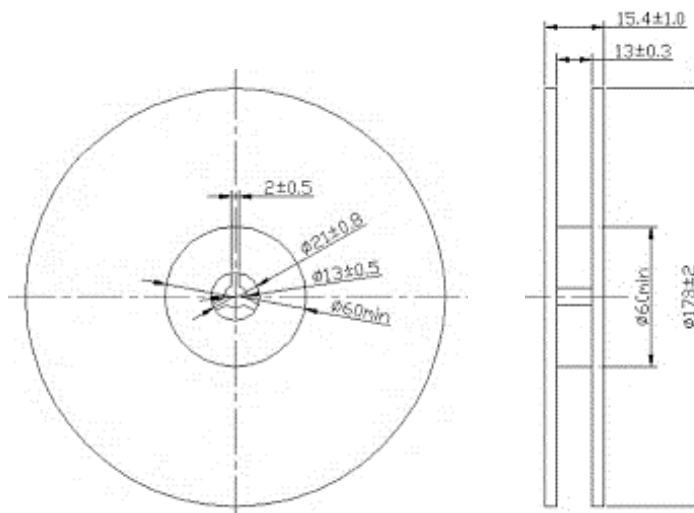
Tape and Reel Specifications

TAPE DETAILS:



Parameter	Code	Dimension	Tolerance
Height of component hole	A	3.3 max	± 0.1
Width of component hole	B	3.3 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	4.0	± 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	± 0.3
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 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.
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.