Spectron® Technologies

Data Sheet
433.92MHz SAW 3030
SPT433M3030R

V1.1

Description:

The Spectron SPT433M3030R is a SAW Resonator that work Center frequency ranges from 433.845 to 433.995MHz.It is designed for applications in remote controls, IOT equipments and Information& Communications filed.

The SPT433M3030R provides +15 dBm power handling, low insertion loss .

The design and manufacturing of the SPT433M3030R exploit Spectron's exclusive TSAW technology to deliver competitive performance against state of the art at a low cost.

The SPT433M3030R is compatible with high volume, lead-free SMT soldering processes.

Features:

- Terminating source impedance: 50Ω
- Terminating load impedance: 50Ω
- Environmental
  - RoHS Compliant

Specifications:

- Operation Temperature:-40°C to +85°C
- Compact miniature size
  - 3.0 mm × 3.0 mm footprint
  - 1.25 mm max-height

Applications:

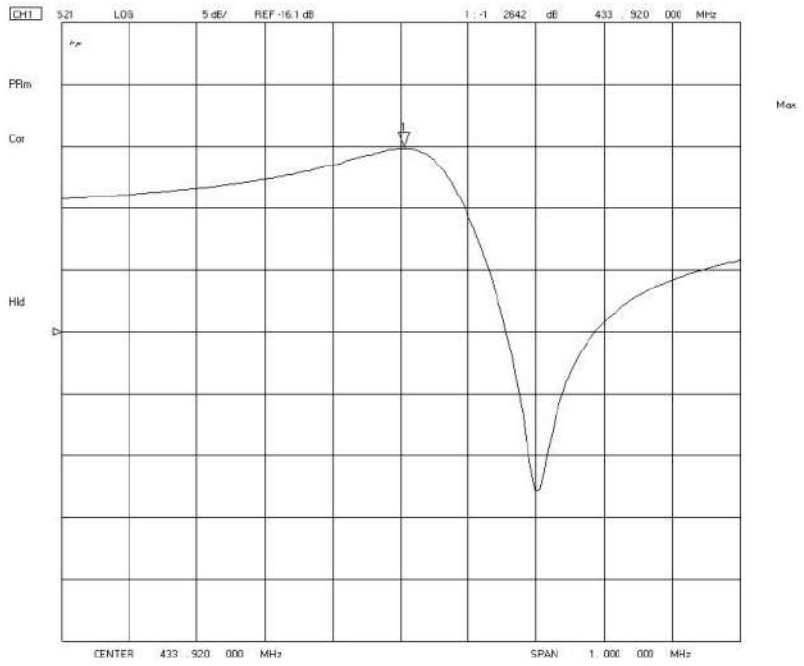
- Remote controls

Electrical Specifications

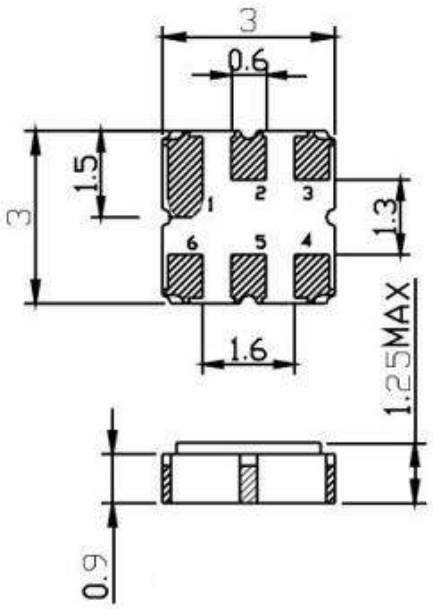
Table 1 Electrical Specifications.

Item			Unites	Minimum	Typical	Maximum
Center Frequency			MHz	433.845	433.92	433.995
Insertion Loss			dB		1.3	1.8
Quality Factor Unload Q					15174	
50Ω Loaded Q					1771	
Stability						
	Freq.temp.Coefficient		ppm/℃2		0.032	
Frequency Aging			ppm/yr		<±10	
DC. Insulation Resistance			MΩ	1		
RF Equivalent RLC Model		Motional Resistance	Ω		13	22
		Motional Inductance	μH		73.6	
		Motional Capacitance	fF		1.83	
Transducer Static Capacitance			pF		2.4	

Figure Electrical Characteristics: Frequency response.



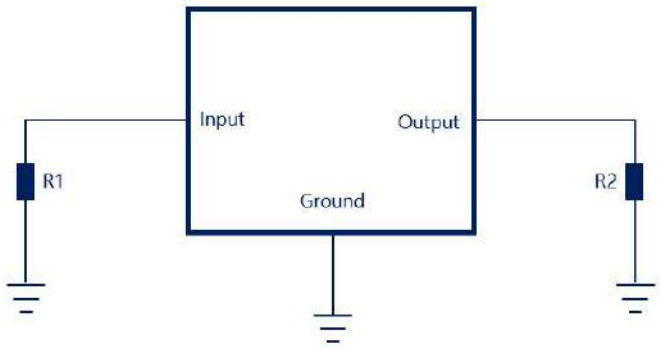
Package & Dimensions



Pin No.	Description
2	Input
5	Output
1,3,4,6	Case Ground

All dimensions are in millimeters. Angles are in degrees. All tolerances are ±0.1mm unless other specified.

Matching



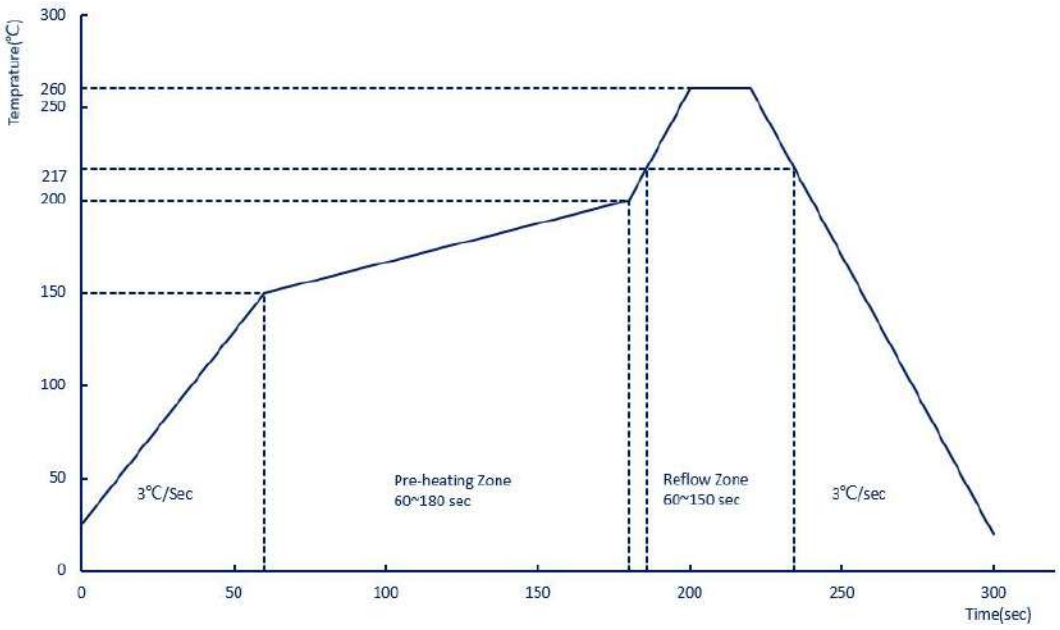
Port	Matching Component[1]
Input	R1: 50Ω
Output	R2: 50Ω

Matching component values shown are recommended based on the Spectron evaluation board.
Value adjustment may be required on the end-user's circuit boards for the selected component manufacturer and PCB material.

Maximum Ratings

Item		Value	Unit
Operation Temperature	T	-40 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +85	℃
RF Power Dissipation	P	15	dBm

Recommended SMT Solder Profile



Ordering Information

Part Number	Number of Devices	Container
SPT433M3030R	1000pcs or 3000pcs	Tape and Reel

Reliability

No.	Test item	Test condition
1	Temperature Storage	Temperature: 85℃±2℃ , Duration: 250h , Recovery time: 2h±0.5h (2) Temperature: –55℃±3℃ , Duration: 250h ,Recovery time: 2h±0.5h
2	Humidity Test	Conditions: 60℃±2℃ ,90~95% RH Duration: 250h
3	Thermal Shock	Heat cycle conditions: TA=-55℃±3℃, TB=85℃±2℃, t1=t2=30min, Switch time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h.
4	Vibration Fatigue	Frequency of vibration: 10~55Hz Amplitude:1.5mm Directions: X,Y and Z Duration: 2h
5	Drop Test	Cycle time: 10 times Height: 1.0m
6	Solder Ability Test	Temperature: 245℃±5℃ Duration: 3.0s--5.0s Depth: DIP--2/3 , SMD--1/5
7	Resistance to Soldering Heat	(1) Thickness of PCB:1mm , Solder condition: 260℃±5℃ , Duration: 10±1s (2) Temperature of Soldering Iron: 350℃±10℃, Duration: 3~4s, Recovery time : 2 ± 0.5h