

# Data Sheet 433.92MHz SAW 3030 SPT433M3030A

V1.0

#### **Description:**

The Spectron SPT433M3030A is a SAW filter that work frequency ranges from 433 to 434.71MHz.It is designed for applications in remote controls, IOT equipments and Information& Communications filed.

The SPT433M3030A provides +15 dBm power handling, low insertion loss and high out of band rejection.

The design and manufacturing of the SPT433M3030A exploit Spectron's exclusive TSAW technology to deliver competitive performance against state of the art at a low cost.

The SPT433M3030A is compatible with high volume, lead-free SMT soldering processes.

#### **Features:**

- Single-Ended Input and Output
- Terminating Impedance: 50 Ω
- Environmental
  - RoHS Compliant

### **Specifications:**

- Operation Temperature:-40°C to +85°C
- Usable passband 1.71 MHz
- Compact miniature size
  - $3.0 \text{ mm} \times 3.0 \text{ mm}$  footprint
  - 1.25 mm max-height

### **Applications:**

- Remote controls
- IOT equipments
- Information& Communications Devices

# **Electrical Specifications**

**Table 1** Electrical Specifications. Test Temperature:  $25^{\circ}C \pm 2^{\circ}C$ 

Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc		433.92		MHz
Insertion Loss(min)	IL		1.8	2.0	dB
Insertion Loss 433.00–434.71MHz	IL		2.0	2.5	dB
Amplitude Ripple (p-p) 433.00–434.71MHz	Δα		0.5	1.0	dB
3dB bandwidth	BW3dB		7.0	7.5	MHz
Group Delay Ripple 433.00–434.71MHz	GDR		20.0	50.0	ns
Absolute Attenuation	а				
DC - 380.00MHz		55.0	60.0		dB
380.00 - 413.50MHz		50.0	55.0		dB
413.50 - 424.00MHz		43.0	48.0		dB
443.75 - 454.00MHz		35.0	40.0		dB
454.00 - 470.00MHz		45.0	50.0		dB
470.00 - 650.00MHz		50.0	55.0		dB
650.00 -1000.00MHz		45.0	50.0		dB
Input VSWR 433.00–434.71MHz			1.8:1	2.0:1	/
Output VSWR 433.00–434.71MHz			1.8:1	2.0:1	/

Figure 1 Electrical Characteristics: Frequency response.

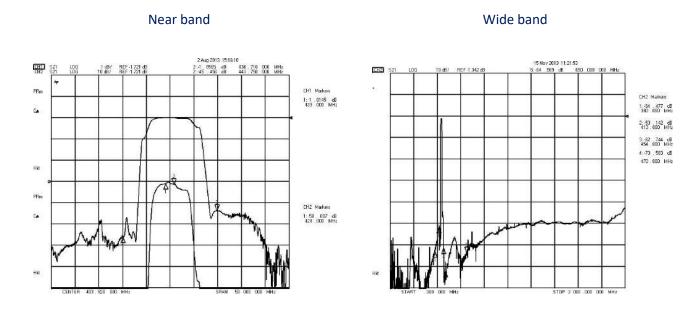


Figure 2 Electrical Characteristics: Delay Ripple & Phase Linearity & VSWR.

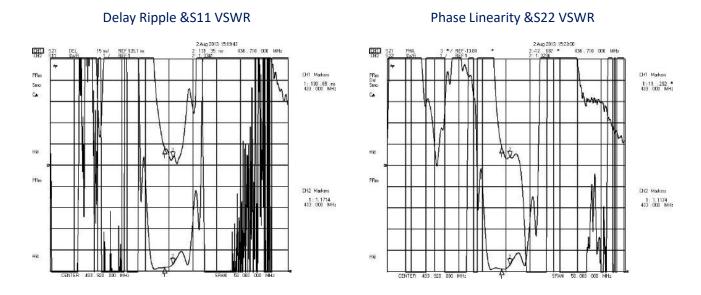
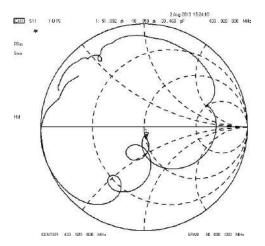
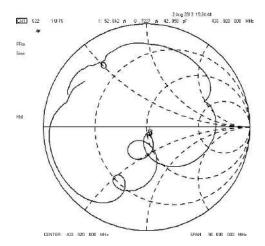


Figure 3 Electrical Characteristics: Delay Ripple & Phase Linearity & VSWR.

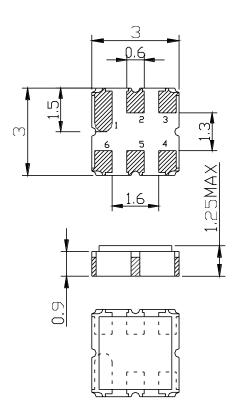
S11 Smith Chart



### S22 Smith Chart

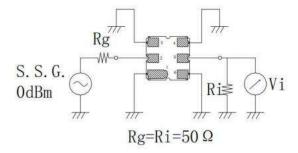


# Package & Dimensions



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

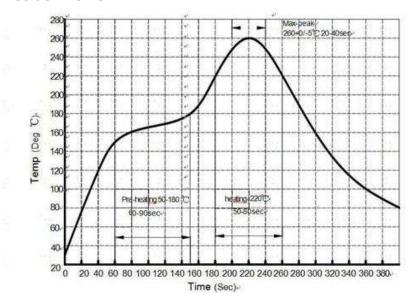
### **Test circuit**



### **Maximum Ratings**

Item		Value	Unit
DC Voltage	VDC	3	V
Operation Temperature	Т	-40 ~ +85	°C
Storage Temperature	T <sub>Stg</sub>	-55 ~+125	°C
RF Power Dissipation	Р	15	dBm

### **Recommended SMT Solder Profile**



### **Ordering Information**

Part Number	Number of Devices	Container	
SPT433M3030A	1000pcs	Tape and Reel	

# Reliability

No.	Test item	Test condition		
1	Temperature Storage	Temperature: 85°C±2°C, Duration: 250h, Recovery time: 2h±0.5h  (2) Temperature: -55°C±3°C, Duration: 250h, Recovery time: 2h±0.5h		
2	Humidity Test	Conditions: 60°C±2°C ,90~95% RH Duration: 250h		
3	Thermal Shock	Heat cycle conditions: TA=-55°C±3°C, TB=85°C±2°C, 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°C±5°C Duration: 3.0s5.0s  Depth: DIP2/3 , SMD1/5		
7	Resistance to Soldering Heat	<ul> <li>(1) Thickness of PCB:1mm , Solder condition: 260°C±5°C , Duration: 10±1s</li> <li>(2) Temperature of Soldering Iron: 350°C±10°C, Duration: 3~4s,</li> <li>Recovery time : 2 ± 0.5h</li> </ul>		

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