



Data Sheet

868.3MHz SAW 3030

SPT868M3030A

V1.0

Description:

The Spectron SPT868M3030A is a SAW filter that work frequency ranges from 863.3 to 873.3MHz. It is designed for applications in RF module, IOT equipments and Information & Communications filed.

The SPT868M3030A provides +20dBm power handling, low insertion loss and high out of band rejection.

The design and manufacturing of the SPT868M3030A exploit Spectron's exclusive TSAW technology to deliver competitive performance against state of the art at a low cost.

The SPT868M3030A 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 10MHz
- Compact miniature size
 - 3.0 mm \times 3.0 mm footprint
 - 1.25 mm max-height

Applications:

- RF module
- IOT equipments
- Information & Communications Devices

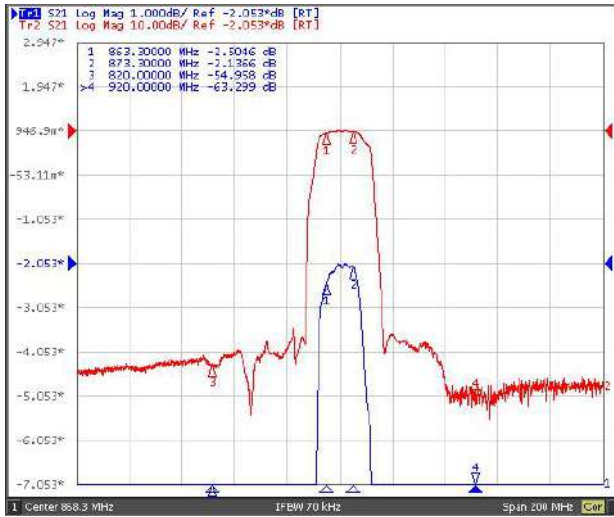
Electrical Specifications**Table 1** Electrical Specifications.

Test Temperature: 25°C±2°C

Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc		868.30		MHz
Insertion Loss(min)	IL		2.1	3.0	dB
Insertion Loss	863.30 – 873.30 MHz IL		2.5	3.5	dB
Amplitude Ripple (p-p)	863.30 – 873.30 MHz $\Delta\alpha$		0.6	1.0	dB
Group Delay Ripple	863.30 – 873.30 MHz		25.0	60.0	ns
Absolute Attenuation	α				
	DC- 820.00 MHz	45.0	50.0		dB
	920.00 - 1100.00 MHz	45.0	50.0		dB
	1100.00 - 1500.00 MHz	40.0	45.0		dB
Input VSWR	863.30 – 873.30 MHz		1.6:1	2.0:1	
Output VSWR	863.30 – 873.30 MHz		1.6:1	2.0:1	

Figure 1 Electrical Characteristics: Frequency response.

Frequency Response



Frequency Response (wideband)

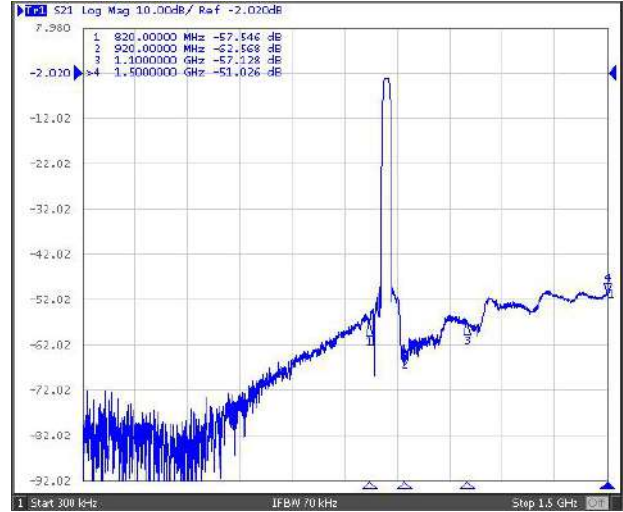
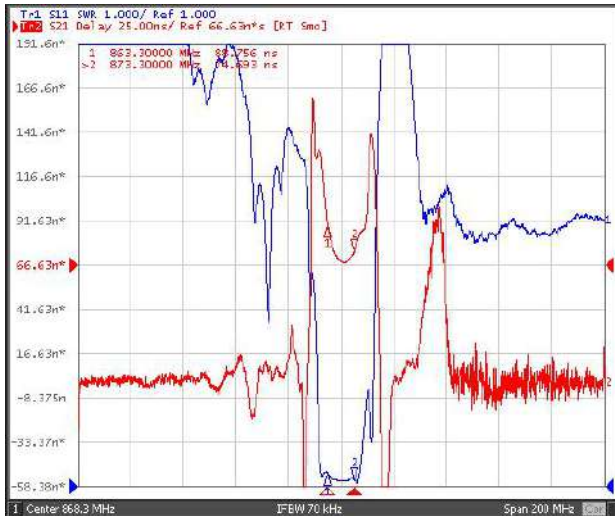
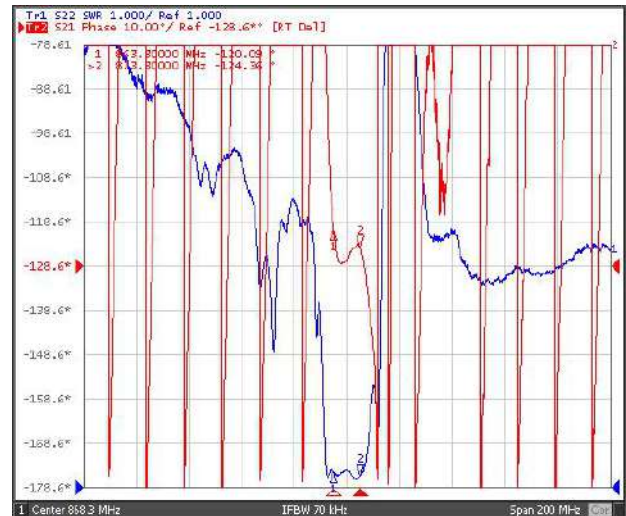


Figure 2 Electrical Characteristics: Delay Ripple & Phase Linearity & VSWR.

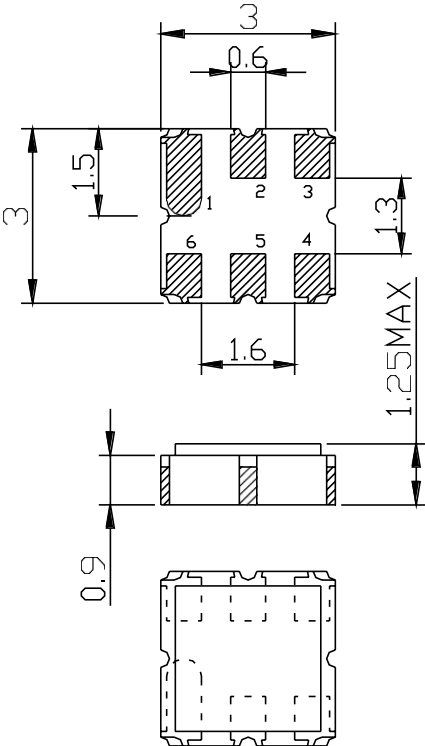
Delay Ripple & S11 VSWR



Phase Linearity & S22 VSWR

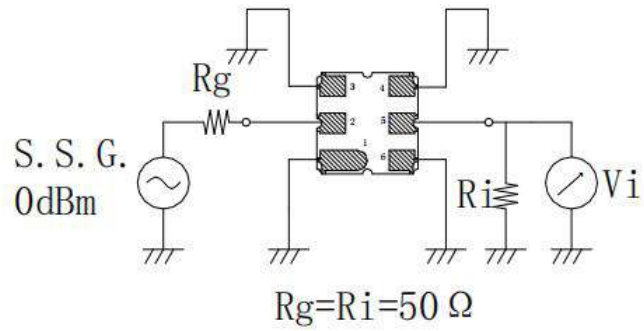


Package & Dimensions



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

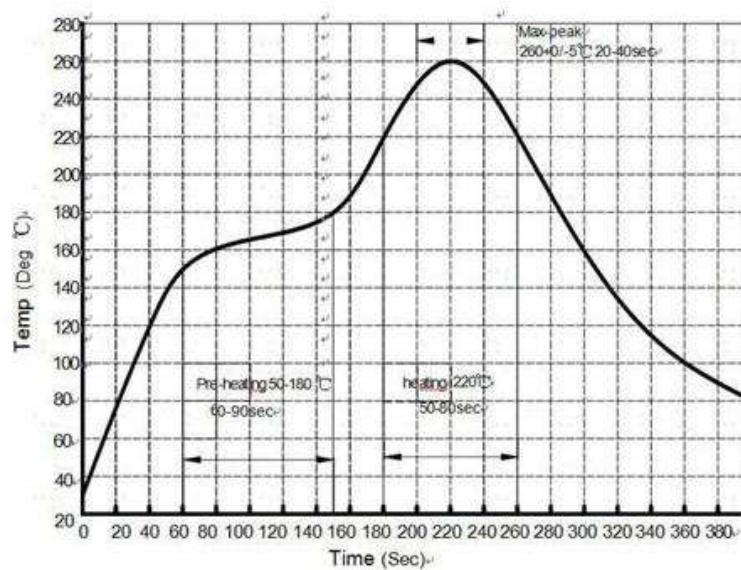
Test circuit



Maximum Ratings

Item		Value	Unit
DC Voltage	VDC	5	V
Operation Temperature	T	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +125	°C
RF Power Dissipation	P	20	dBm

Recommended SMT Solder Profile



Ordering Information

Part Number	Number of Devices	Container
SPT868M3030A	1000pcs	Tape and Reel

Reliability

No.	Test item	Test condition
1	Temperature Storage	Temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$, Duration: 250h , Recovery time: $2\text{h} \pm 0.5\text{h}$ (2) Temperature: $-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$, Duration: 250h , Recovery time: $2\text{h} \pm 0.5\text{h}$
2	Humidity Test	Conditions: $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 90~95% RH Duration: 250h
3	Thermal Shock	Heat cycle conditions: TA= $-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$, TB= $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$, $t_1=t_2=30\text{min}$, Switch time: $\leq 3\text{min}$, Cycle time: 100 times, Recovery time: $2\text{h} \pm 0.5\text{h}$.
4	Vibration Fatigue	Frequency of vibration: 10~55Hz Directions: X,Y and Z Amplitude:1.5mm Duration: 2h
5	Drop Test	Cycle time: 10 times Height: 1.0m
6	Solder Ability Test	Temperature: $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Duration: 3.0s--5.0s Depth: DIP--2/3 , SMD--1/5
7	Resistance to Soldering Heat	(1) Thickness of PCB:1mm , Solder condition: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$, Duration: $10 \pm 1\text{s}$ (2) Temperature of Soldering Iron: $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$, Duration: 3~4s, Recovery time : $2 \pm 0.5\text{h}$

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