Spectron® Technologies

Data Sheet
347.5MHz SAW 5050
SPT347M5050A

V1.0

Description:

The Spectron SPT347M5050A is a SAW filter that work frequency ranges from 343 to 352MHz.It is designed for applications in IOT, wireless module and Information& Communications filed.

The SPT347M5050A provides +20 dBm power handling, low insertion loss and high out of band rejection.

The design and manufacturing of the SPT347M5050A exploit Spectron's exclusive TSAW technology to deliver competitive performance against state of the art at a low cost.

The SPT347M5050A is compatible with high volume, lead-free SMT soldering processes.

Features:

- Single-Ended Input and Output
- Terminating Impedance： 50 Ω
- RoHS Compliant
- Package size 5.00x5.00x1.50mm3

Specifications:

- Operation Temperature:-40°C to +85°C
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 9 MHz
- 3dB bandwidth TYP 16MHz

Applications:

- Information& Communications Devices
- IOT
- Wireless module

Electrical Specifications

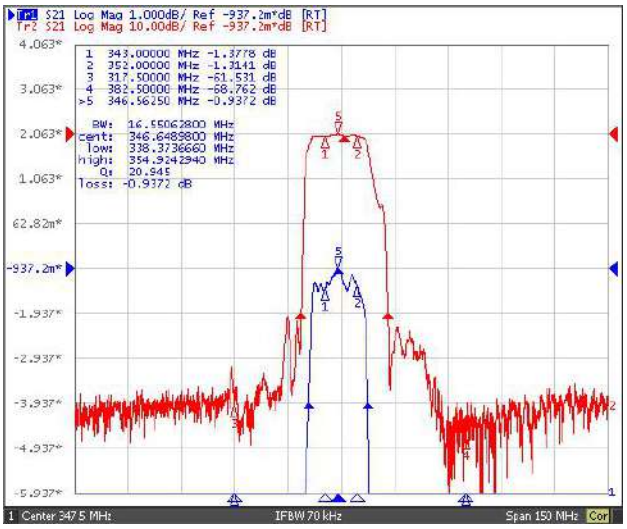
Table 1 Electrical Specifications.

Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc		347.50		MHz
Insertion Loss(min)	IL		1.0	2.0	dB
Insertion Loss 343.00 – 352.00 MHz	IL		1.4	3.0	dB
Amplitude Ripple (p-p) 343.00 – 352.00 MHz	△α		0.5	1.0	dB
3 dB Bandwidth	BW_{3dB}	10.0	16.0		MHz
40 dB Bandwidth	BW_{40dB}		24.4	40.0	MHz
Group Delay Ripple 343.00 – 352.00 MHz			25.0	60.0	ns
Absolute Attenuation	α				
DC - 247.50 MHz		50.0	55.0		dB
247.50 - 317.50 MHz		50.0	55.0		dB
381.50 - 447.50 MHz		50.0	55.0		dB
447.50 - 800.00 MHz		45.0	50.0		dB
800.00 - 1000.00 MHz		40.0	45.0		dB
Input VSWR 343.00 – 352.00 MHz			1.7:1	2.0:1	
Input VSWR 343.00 – 352.00 MHz			1.7:1	2.0:1	

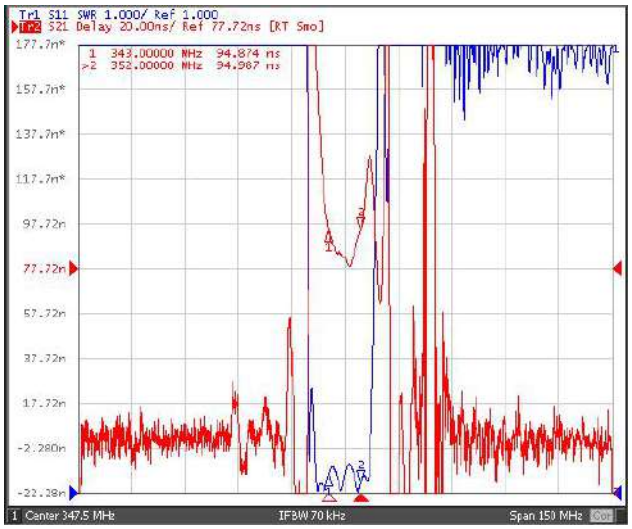
1. Min/Max specifications are guaranteed at the indicated temperature (unless otherwise noted).
2. Typical data is the average value (arithmetic mean) of the parameter over the indicated band at +25°C

Figure 1 Electrical Characteristics: Frequency response.

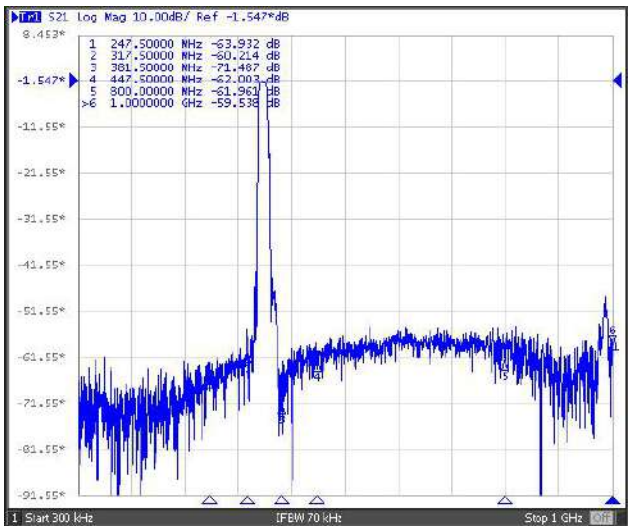
Frequency Response



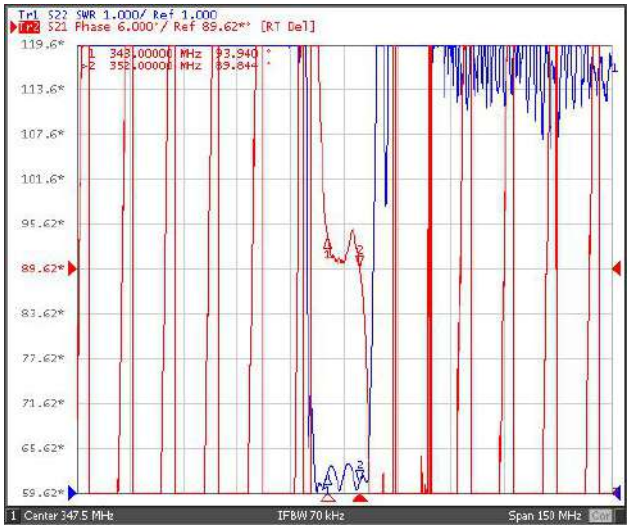
Delay Ripple & S11 VSWR



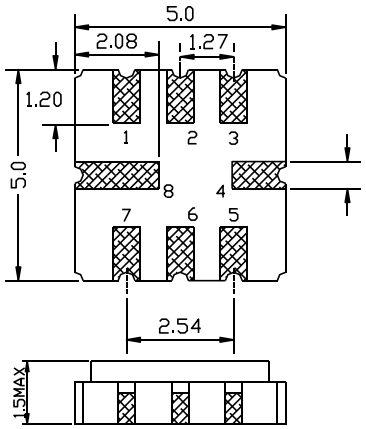
Frequency Response （wideband）



Phase Linearity & S22 VSWR

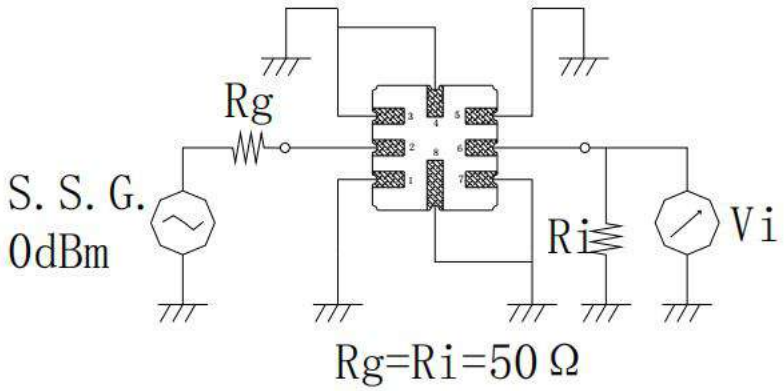


Package & Dimensions



Pin No.	Description
2	Input
6	Output
1,3,4,5,7,8	Ground

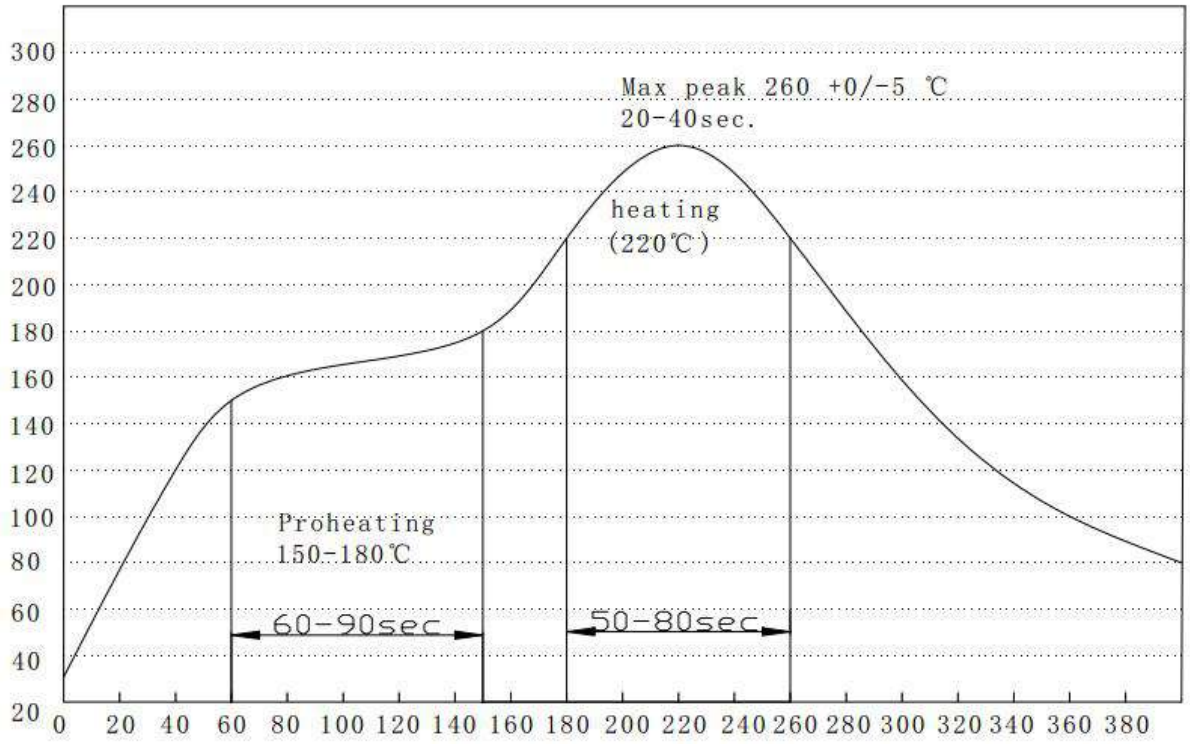
Test circuit



Maximum Ratings

Item		Value	Unit
Operation Temperature	T	-40 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +125	℃
RF Power Dissipation	P	20	dBm

Recommended SMT Solder Profile



Ordering Information

Part Number	Number of Devices	Container
SPT347M5050A	1000pcs	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