Spectron® Technologies

Data Sheet
140MHz IF SAW Filter
SPTF1681

V1.0

Description:

The Spectron SPTF1681 is a IF SAW filter designed for applications in wireless module and repeater and Information& Communications filed .

The SPTF1681 provides +10 dBm power handling, low insertion loss and high out of band rejection.

The design and manufacturing of the SPTF1681 exploit Spectron's exclusive TSAW technology to deliver competitive performance against state of the art at a low cost.

The SPTF1681 is compatible with high volume, lead-free SMT soldering processes.

Features:

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

Specifications:

- Operation Temperature:-40°C to +85°C
- 1dB passband 0.4 MHz
- Compact miniature size
  13.30x6.50x1.80mm3

Applications:

- Information& Communications Devices
- Repeater
- Wireless module

Electrical Specifications

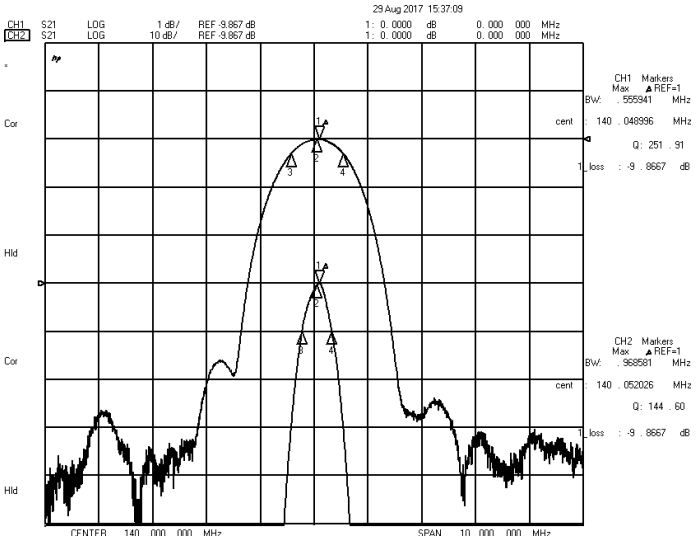
Table 1 Electrical Specifications.

Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc		140.00		MHz
Insertion Loss(min)	IL		9.9	15.0	dB
1.5 dB Bandwidth	$BW_{1.5dB}$	0.53	0.55		MHz
Amplitude Ripple (p-p) 139.735-140.265 MHz	△a		1.0	1.5	dB
Absolute Attenuation	a	35.0	51.0		dB

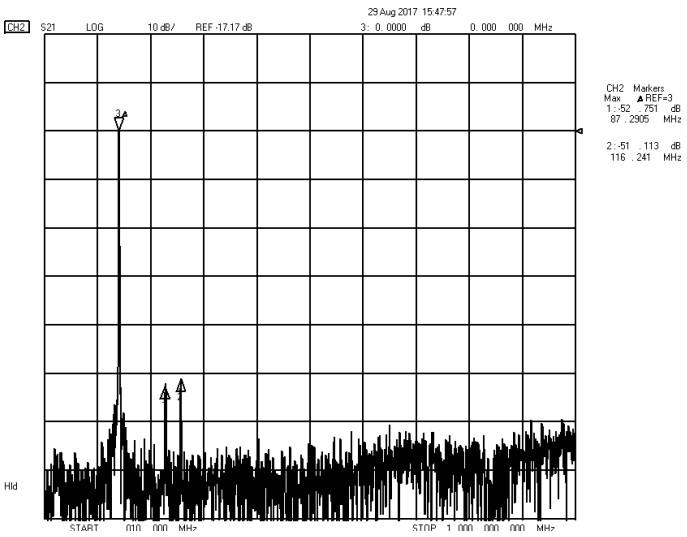
1. Min/Max specifications are guaranteed at the indicated temperature (unless otherwise noted).
2. Typical data is the average value (arithmetic mean) of the parameter over the indicated band at +25°C
3. Terminating source impedance:50Ω
   Terminating load impedance: 50Ω

Figure 1 Electrical Characteristics: Frequency response.

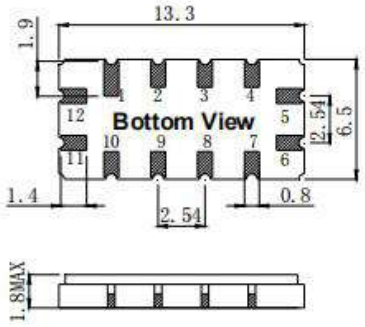
Frequency Response



Frequency Response （wideband）

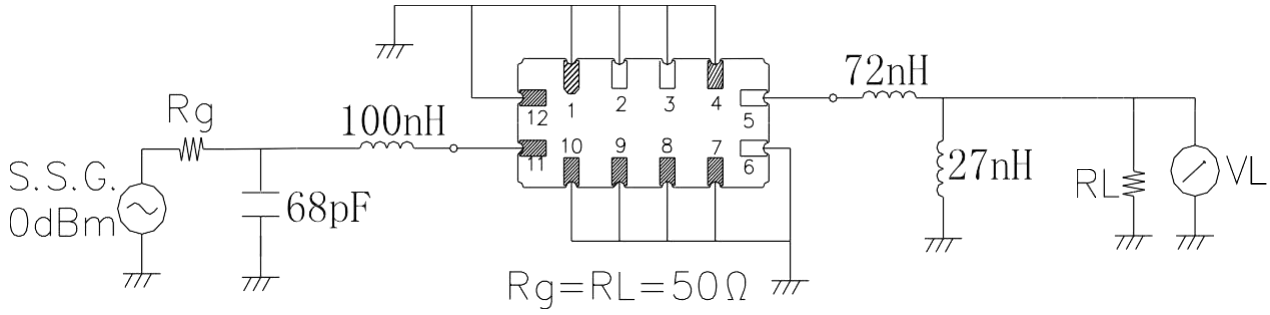


Package & Dimensions



Pin No.	Description
11	Input
5	Output
1,2,3,4,6,7,8,9,10,12	Ground

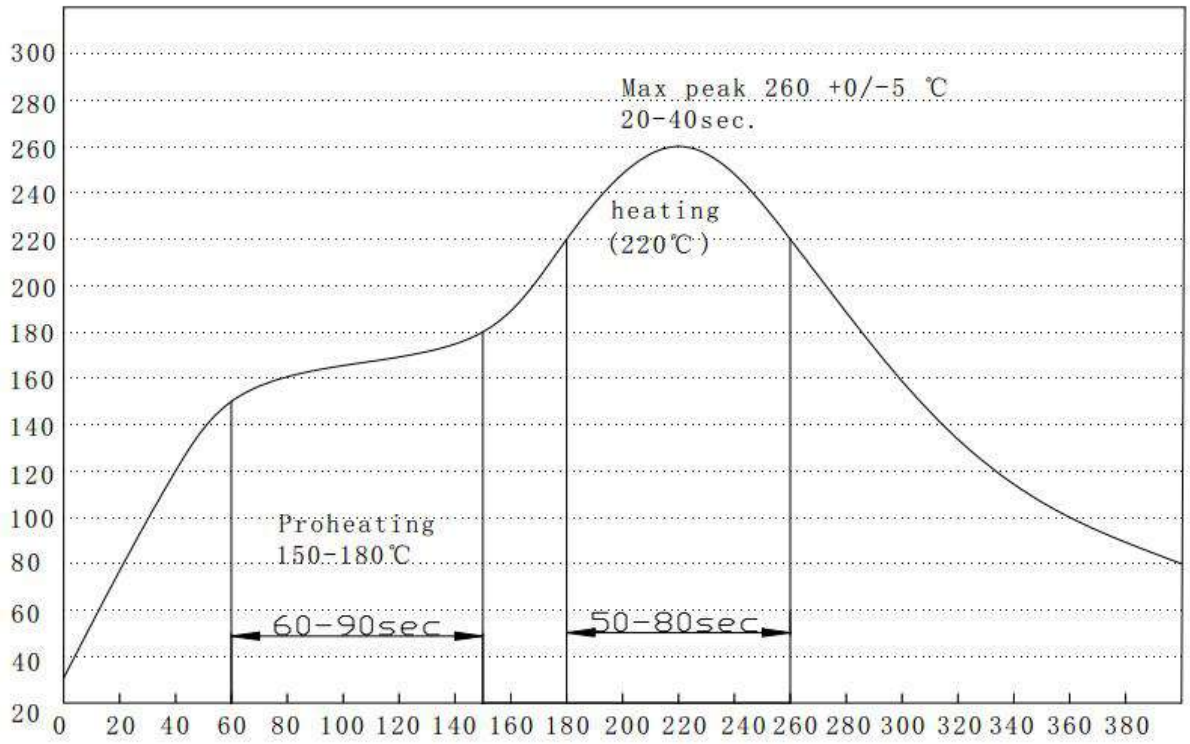
Test circuit



Maximum Ratings

Item		Value	Unit
Operation Temperature	T	-40 ~ +85	℃
Storage Temperature	T_{stg}	-55 ~ +125	℃
RF Power Dissipation	P	10	dBm

Recommended SMT Solder Profile



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