

# 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**

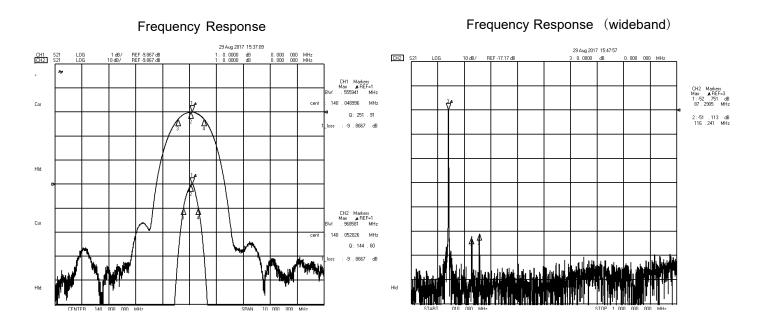
**Table 1** Electrical Specifications.

Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc		140.00		MHz
Insertion Loss(min)	TE		9.9	15.0	dB
1.5 dB Bandwidth	BW <sub>1.5dB</sub>	0.53	0.55		MHz
Amplitude Ripple (p-p) 139.735-140.265 MHz	Δa		1.0	1.5	dB
Absolute Attenuation	а	35.0	51.0		dB

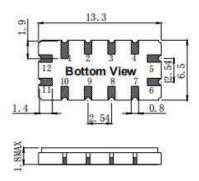
- 1. Min/Max specifications are guaranteed at the indicated temperature (unless otherwise noted).
- 2. Typical data is the average value (arithmetic mean) of the parameter over the indicated band at +25°C
- 3.Terminating source impedance:50  $\!\Omega$

Terminating load impedance:  $50\Omega$ 

Figure 1 Electrical Characteristics: Frequency response.

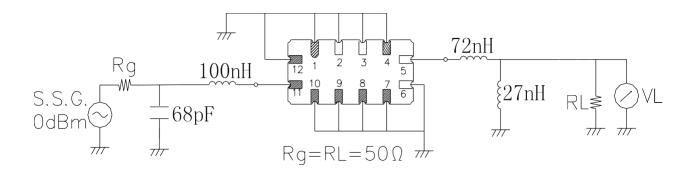


# Package & Dimensions



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

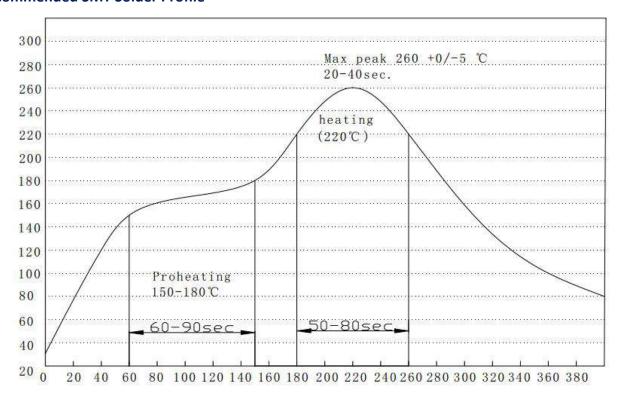
# **Test circuit**



## **Maximum Ratings**

ltem		Value	Unit
Operation Temperature	Т	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-55 ~+125	°C
RF Power Dissipation	Р	10	dBm

## **Recommended SMT Solder Profile**



# Reliability

No.	Test item	Test condition
1	Temperature Storage	Temperature: $85^{\circ}\text{C}\pm2^{\circ}\text{C}$ , Duration: 250h, Recovery time: $2h\pm0.5h$ (2) Temperature: $-55^{\circ}\text{C}\pm3^{\circ}\text{C}$ , Duration: 250h, Recovery time: $2h\pm0.5h$
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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