



Data Sheet
243.95MHz SAW 3838
SPT243M3838A

V1.0

Description:

The Spectron SPT243M3838A is a SAW filter designed for applications in RF module, IOT equipments and Information& Communications filed.

The SPT243M3838A provides +10dBm power handling, low insertion loss and high out of band rejection.

The design and manufacturing of the SPT243M3838A exploit Spectron's exclusive TSAWtechnology to deliver competitive performance against state of the art at a low cost.

The SPT243M3838A is compatible with highvolume, 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
- Compact miniature size
 - 3.8 mm \times 3.8 mm footprint
 - 1.5mm max-height

Applications:

- RF module
- IOT equipments
- Information& Communications Devices

Electrical Specifications

Table 1 Electrical Specifications.

Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc		243.95		MHz
Insertion Loss(min)	IL		1.5	2.5	dB
Insertion Loss	Fc ±110KHz		1.5	3.0	dB
Passband Width @3dB		550	600		KHz
Amplitude Ripple (p-p)	Fc ±110KHz	$\Delta\alpha$	0.6	1.5	dB
Group Delay Ripple	Fc ±110KHz	GDR	1.2	1.6	μs
Absolute Attenuation	α				
	Fc ±600KHz	20.0	25.0		dB
	Fc ±1.2MHz	35.0	40.0		dB
	Fc ±21.6MHz	50.0	55.0		dB

Note: Test Temperature: 25°C ±2°C

Figure 1 Electrical Characteristics: Frequency response

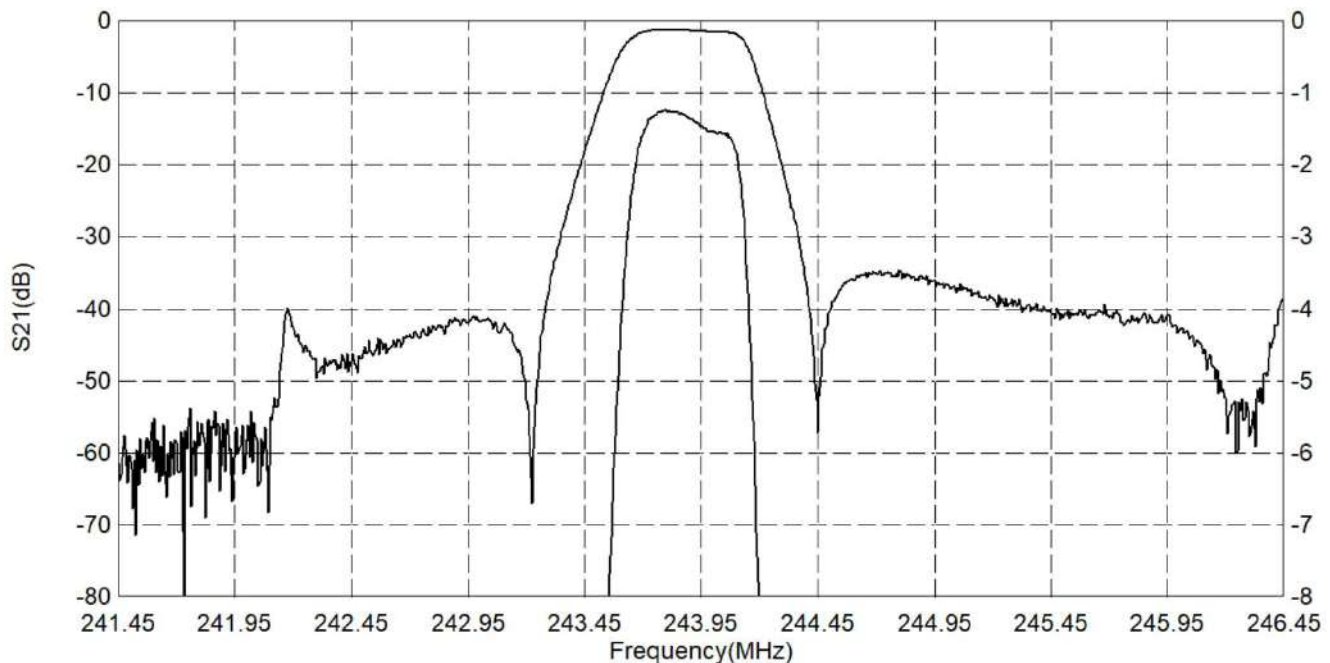


Figure 2 Electrical Characteristics: Input return loss

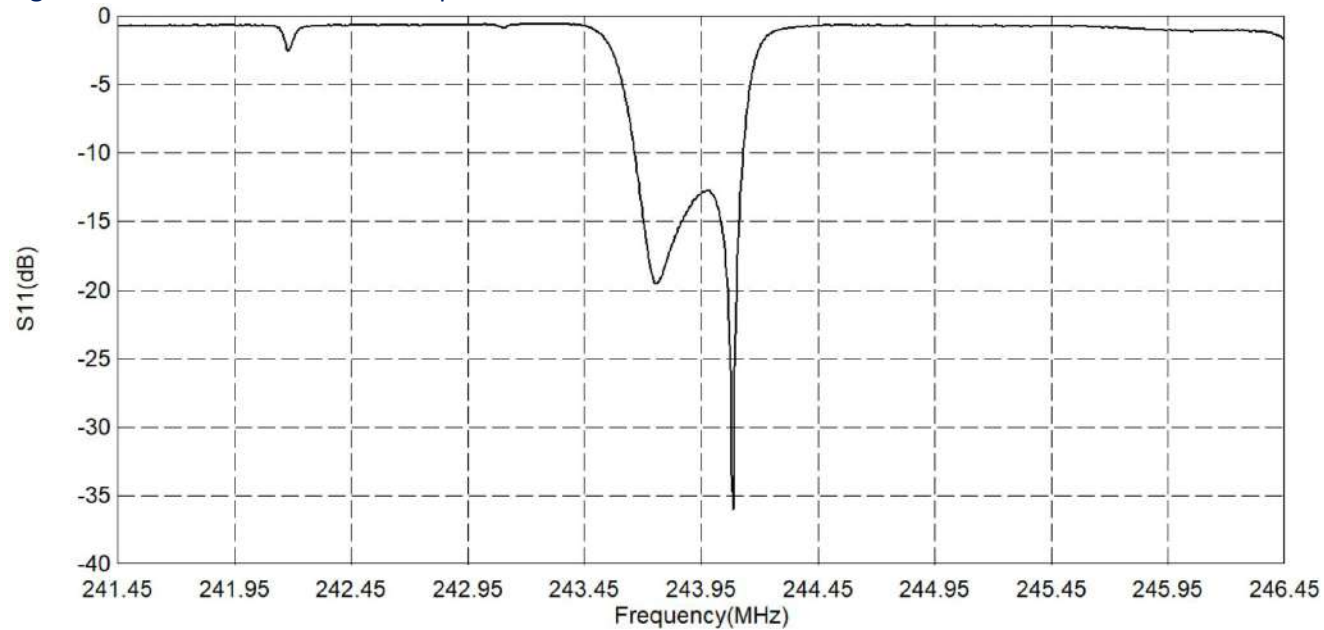
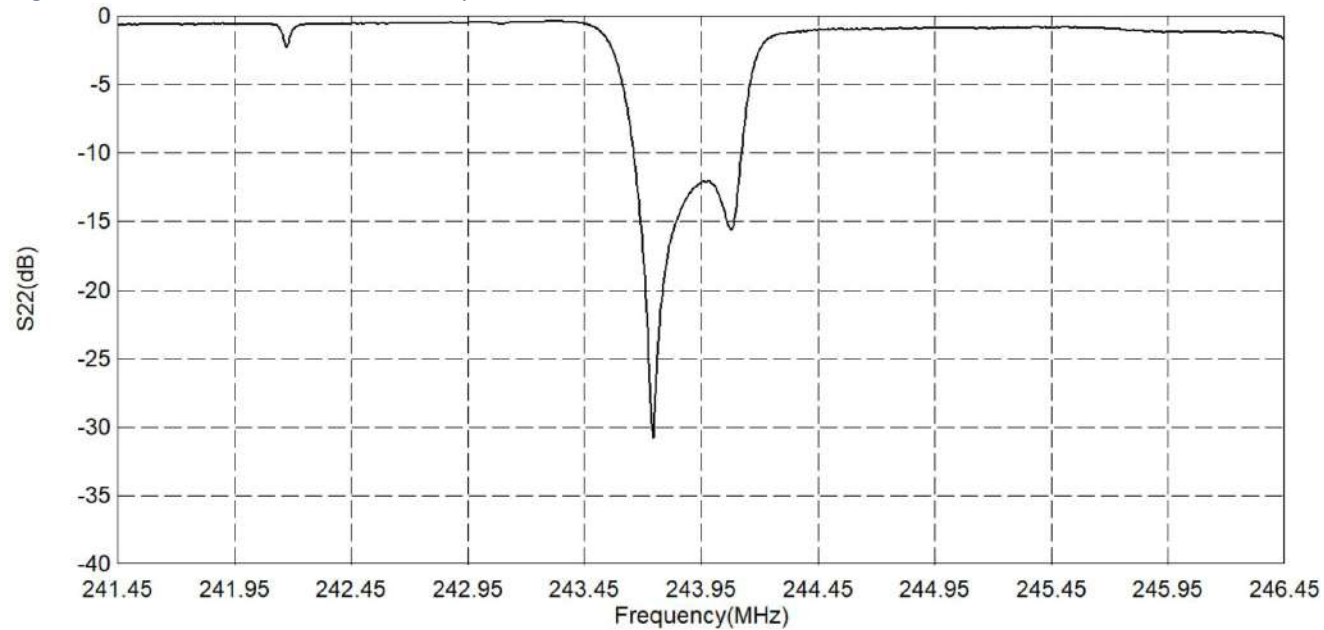
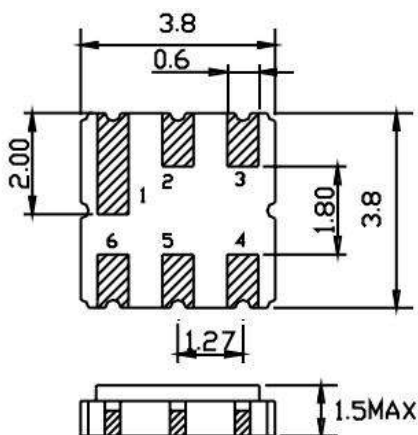


Figure 2 Electrical Characteristics: Output return loss



Package & Dimensions^{1,2}

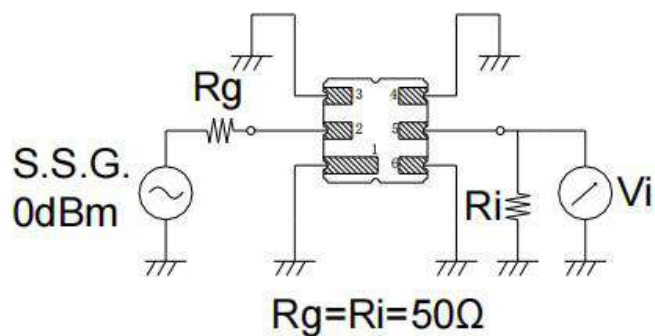


Pin No.	Description
2	Input
5	Output
1,3,4,6	Ground

1.All tolerances are ± 0.1 mm and the unit is mm

2.All dimensions are in millimeters.

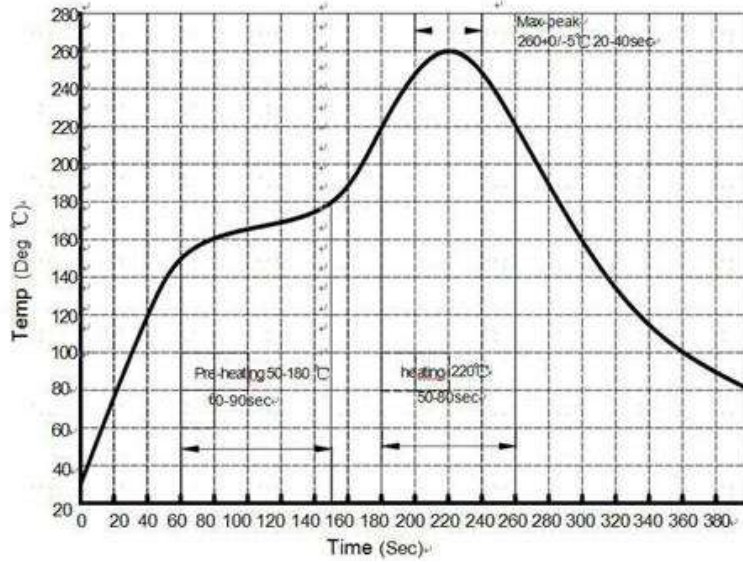
Test circuit



Maximum Ratings

Item		Value	Unit
DC Voltage	VDC	5	V
Operation Temperature	T	-40 ~ 85	$^{\circ}\text{C}$
Storage Temperature	T _{stg}	-40 ~ 85	$^{\circ}\text{C}$
RF Power Dissipation	P	20	dBm

Recommended SMT Solder Profile



Ordering Information

Part Number	Number of Devices	Container
SPT243M3838A	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 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°C±5°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°C±5°C , Duration: 10±1s (2) Temperature of Soldering Iron: 350°C±10°C, Duration: 3~4s, Recovery time : 2 ± 0.5h

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