



Spectron[®]
Technologies

Data Sheet
387.5MHz SAW 3838
SPT387M38E

V1.0

Features:

- Ceramic Package for Surface Mounted Technology (SMT)
- RoHS compatible
- Package size 3.80x3.80x1.50mm³
- Electrostatic Sensitive Device(ESD)

Specifications:

- Operation Temperature:-40°C to +85°C
- Compact miniature size
 - 3.8 mm × 3.8 mm footprint
 - 1.50 mm max-height

Applications:

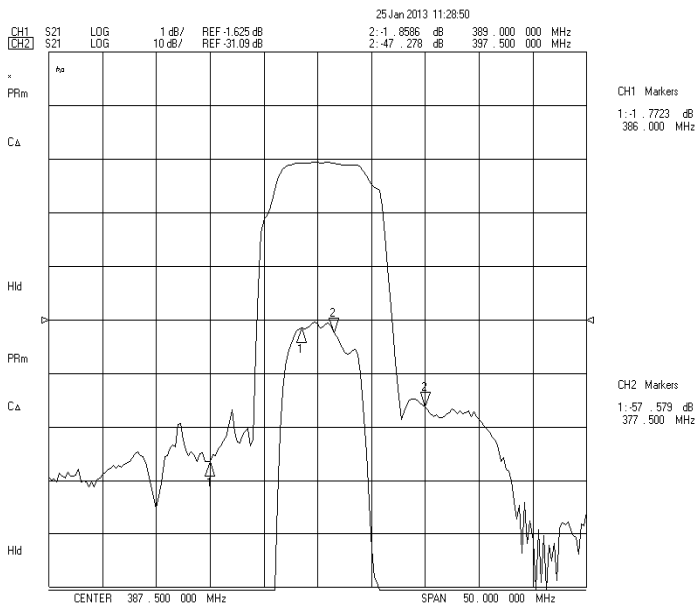
- Low-loss SAW component
- Low amplitude ripple
- Sharp rejections at both out-bands
- Usable passband 3 MHz

Electrical Specifications. Test Temperature: 25°C±2°C

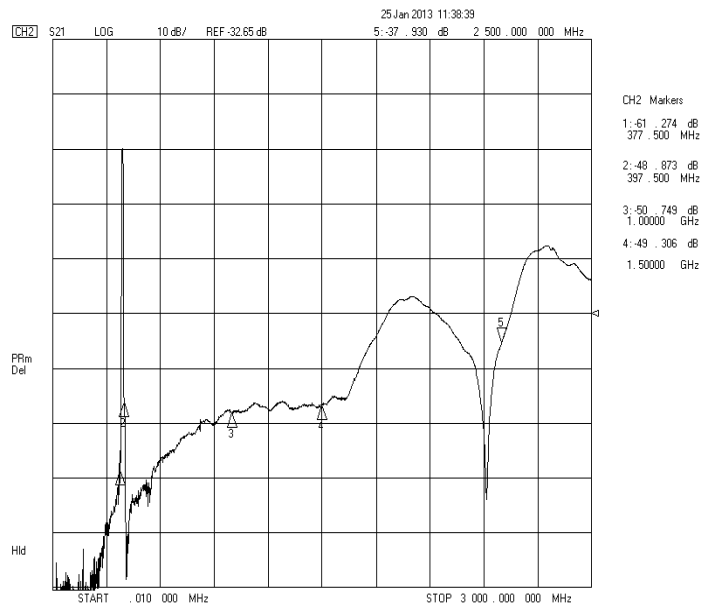
Item		Minimum	Typical	Maximum	Unit
Center Frequency	fc		387.50		MHz
Insertion Loss(min)	IL		1.7	2.0	dB
Insertion Loss	386.00 - 389.00 MHz	IL	2.0	3.0	dB
Amplitude Ripple (p-p)	386.00 - 389.00 MHz	$\Delta\alpha$	0.5	0.8	dB
Group Delay Ripple	386.00 - 389.00 MHz	GDR	20.0	40.0	ns
Absolute Attenuation	α				
	DC - 378.00 MHz	40.0	45.0		dB
	397.00 - 1000.00MHz	40.0	45.0		dB
	1000.00 - 1500.00 MHz	40.0	45.0		dB
Input VSWR	386.00 - 389.00 MHz		1.8:1	2.0:1	/
Output VSWR	386.00 - 389.00 MHz		1.8:1	2.0:1	/

Frequency Characteristics.

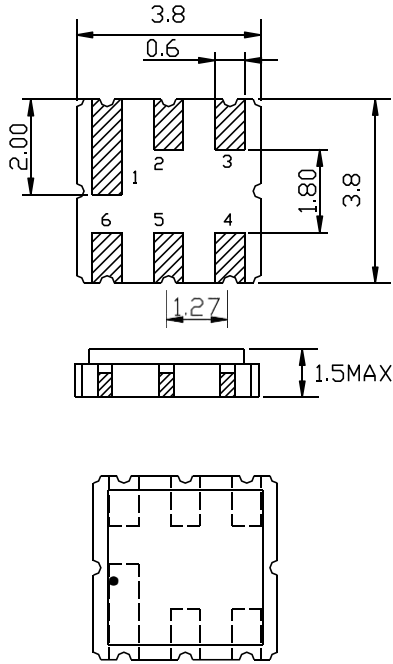
Frequency Response



Frequency Response (wideband)

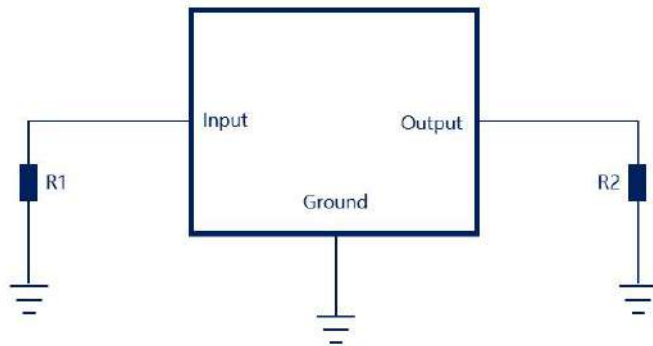


Package & Dimensions



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

Matching



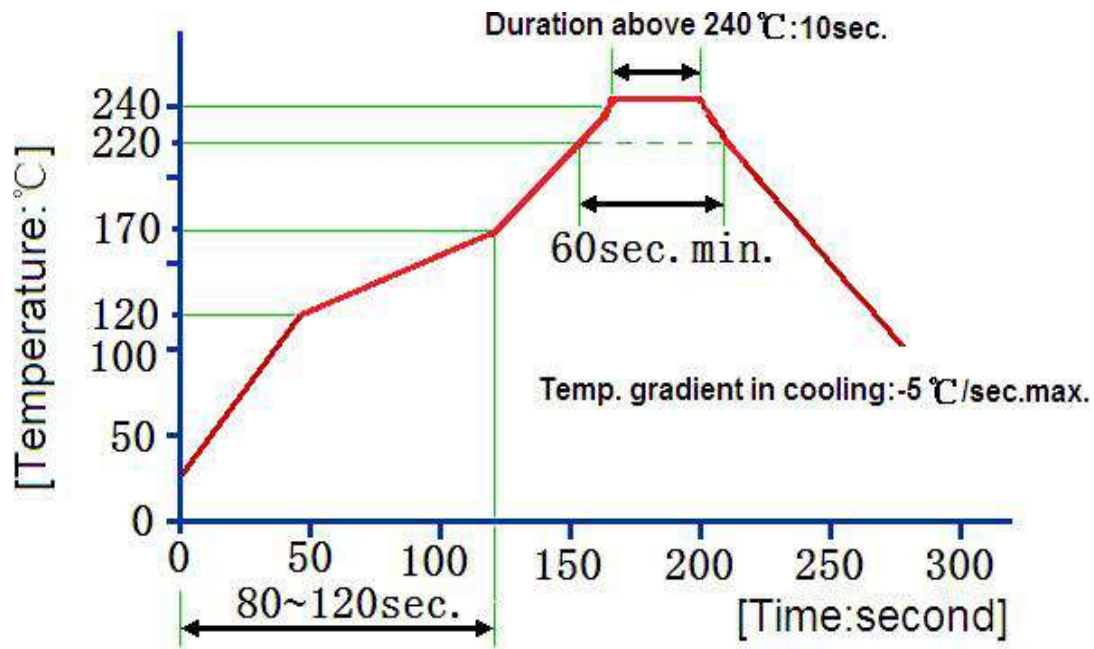
Port	Matching Component ¹
Input	R1: 50Ω
Output	R2: 50Ω

Matching component values shown are recommended based on the Spectron evaluation board. Value adjustment may be required on the end-user's circuit boards for the selected component manufacturer and PCB material.

Maximum Ratings

Item		Value	Unit
DC Voltage	V _{DC}	3	V
Operation Temperature	T	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +85	°C
RF Power Dissipation	P	10	dBm

Recommended Reflow Soldering Diagram



Reflow cycles: 3 cycles max.

Ordering Information

Part Number	Number of Devices	Container
SPT387M38E	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: $\text{TA}=-55^{\circ}\text{C}\pm 3^{\circ}\text{C}$, $\text{TB}=85^{\circ}\text{C}\pm 2^{\circ}\text{C}$, $t_1=t_2=30\text{min}$, 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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