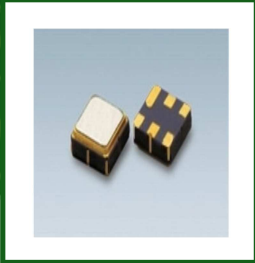


SAW Filters



TEMEXPRESS

TMX IT01

RF SAW Filter for Remote Control
Specification (Rev 1)

▣ Features	P01
▣ Package drawing & Pin out	P01
▣ Marking	P01
▣ Technical characteristics	P02
▣ Measurement circuit	P02
▣ Frequency characteristics	P03
▣ Maximum ratings	P04
▣ Recommended reflow soldering profile	P04
▣ Tape Specifications	P05
▣ Reel Specifications	P05
▣ Reliability tests.....	P06

TMX IT01

RF SAW Filter for Remote Control

Specification (Rev 1)

May 30th, 2016

Features

- ❑ Low Loss RF Filter (typically 2.5dB) within PassBand Width 828.80MHz to 829.20MHz
- ❑ 829 MHz Center Frequency
- ❑ Ceramic package for Surface Mounted Technology
- ❑ Lead-free and RoHS compliance

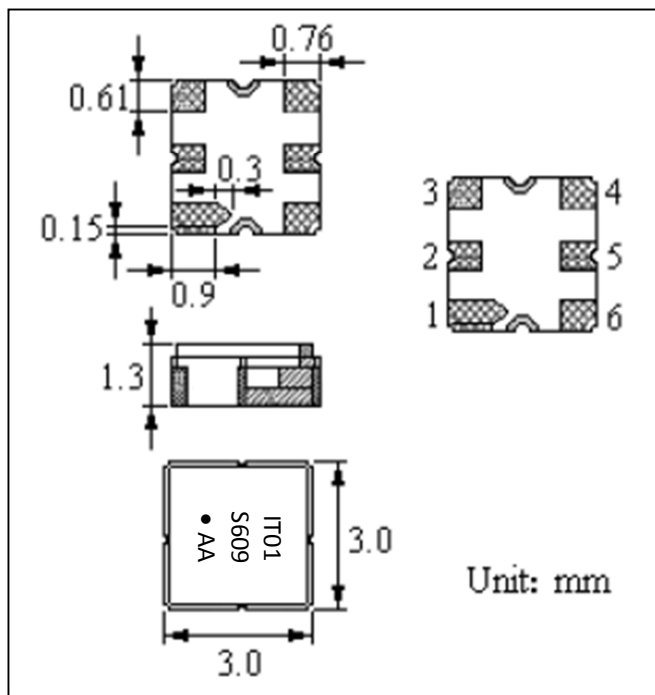
Package drawing & Pin out

The product is in conformance with the European RoHS Recast Directive (100/65/EU).

bottom view

side view

top view



Unit: mm

unit : mm

Pin configuration	
2	Input
5	Output
1, 3, 4, 6	Ground

Marking		
Line 1	IT01	Temexpress designation
Line 2	S609	S is production Code / 6 is Year 2016 & 09 is Week 09
Line 3	AA	AA" is internal production batch code, it corresponds to the wafer

Marking is made by Laser

TMX IT01

RF SAW Filter for Remote Control

Specification (Rev 1)

May 30th, 2016

Technical characteristics

Reference Temperature: +25°C

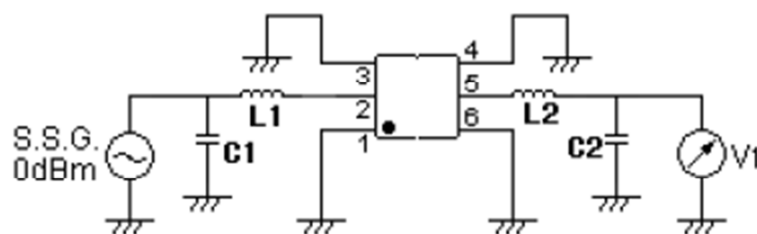
Electrical Parameters	Unit	Minimum	Typical ⁽¹⁾	Maximum
Center Frequency fo	MHz	-	829	-
1 dB Bandwidth	KHz	750	900	1 200
Insertion Loss in 828.80MHz – 829.20MHz	dB	-	2.5	3.5
Amplitude Ripple in 828.80MHz – 829.20MHz	dB	-	0.5	1.0
Absolute Attenuation				
DC ~ 650.00 MHz	dB	40	45	-
650.00 ~ 710.00 MHz	dB	38	43	-
821.00 MHz	dB	30	35	-
832.00 MHz	dB	26	30	-
840.00 ~ 850.00 MHz	dB	25	35	-
850.00 ~ 1000.0 MHz	dB	40	45	-
Frequency Temperature Coefficient	ppm/°C ²	-	0.032	-
Input Impedance	Ohms	-	50	-
Output Impedance	Ohms	-	50	-
Package type & size				
Length x Width	mm		3.0 x 3.0	
Height	mm		1.3	1.5
Pin Out				
Input	2	Output	5	
Case Ground		To be grounded	1, 3, 4, 6	

Note :

(1) Typical values are nominal performances at room temperature

Measurement circuit

50 Ω / 50 Ω Configuration



$$L1=L2=18nH$$

$$C1=C2=1.8pF$$

TMX IT01

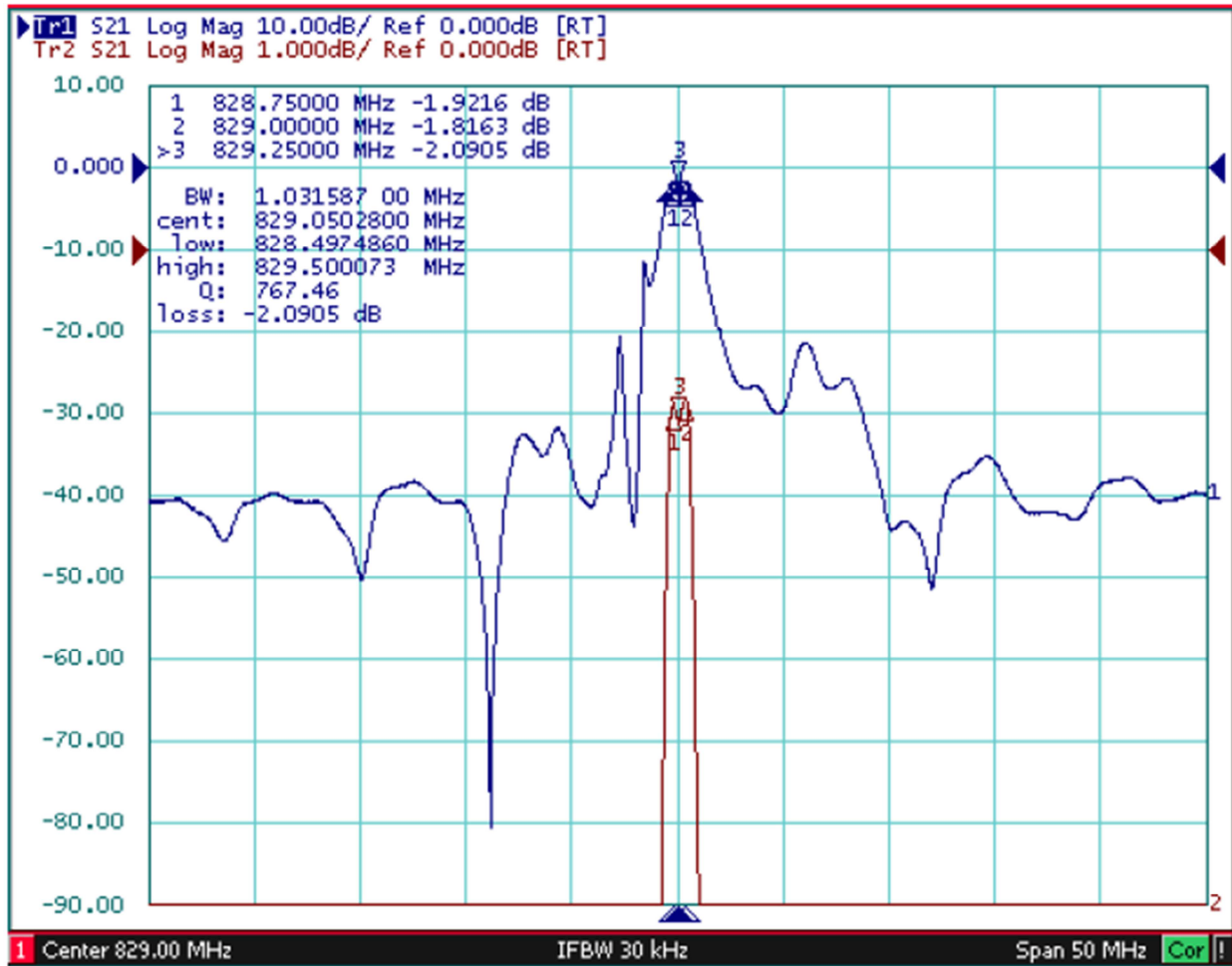
RF SAW Filter for Remote Control

Specification (Rev 1)

May 30th, 2016

Frequency characteristics

TYPICAL S21 RESPONSE



TMX IT01

RF SAW Filter for Remote Control

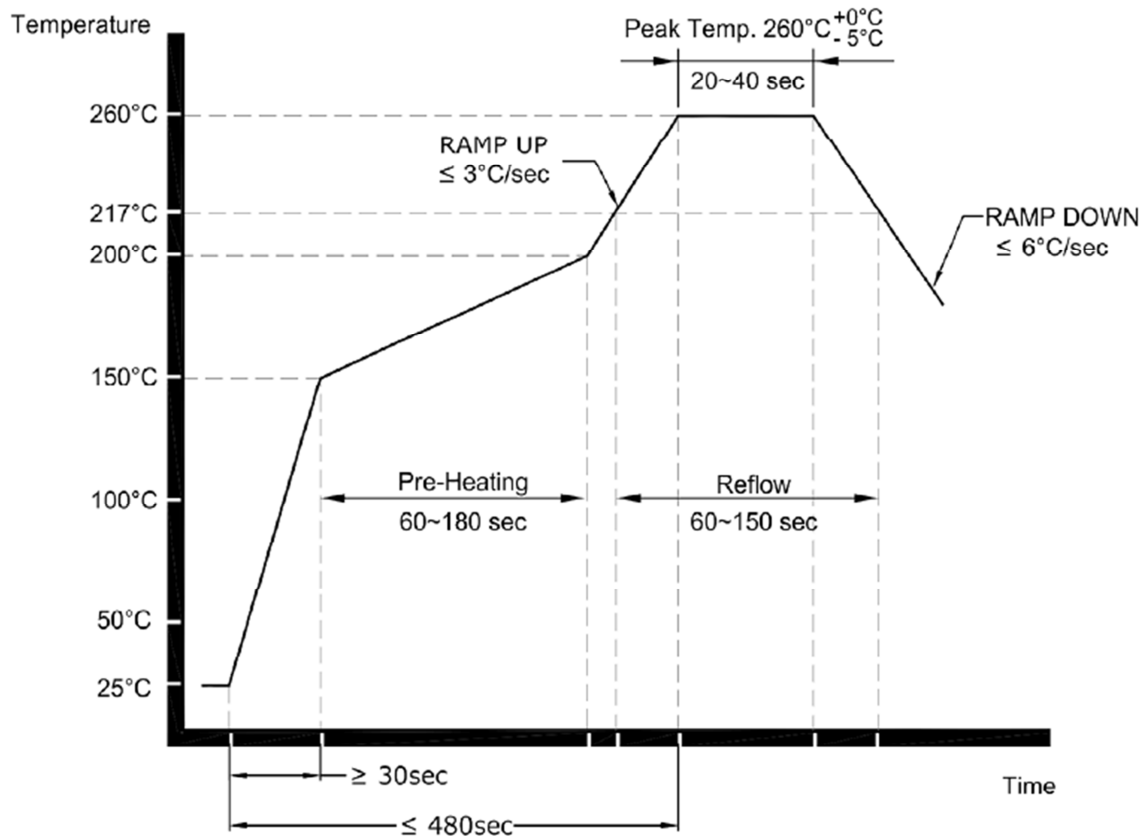
Specification (Rev 1)

May 30th, 2016

Maximum ratings

Storage Temperature Range	°C	[-45°C ; +85°C]
Operating Temperature	°C	[-40°C ; +85°C]
DC Voltage	V	12
RF Power (in Band Width)	dBm	10

Recommended reflow soldering profile



Referred to JEDEC J-STD-020C.

The components shall remain within the electrical specifications after it soldered on the 1mm thickness PCB board and dipped in the solder at $260 \pm 5 \text{ degC}$ during 10 ± 1 seconds.

The components shall remain within the electrical specifications after it soldered by electric iron, solder at $350 \pm 10 \text{ degC}$ during 3~4 seconds. Recovery time: $2\text{h} \pm 0.5\text{h}$.

Ultrasonic cleaning may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.

Only leads of component may be soldered. Please avoid soldering another part of component.

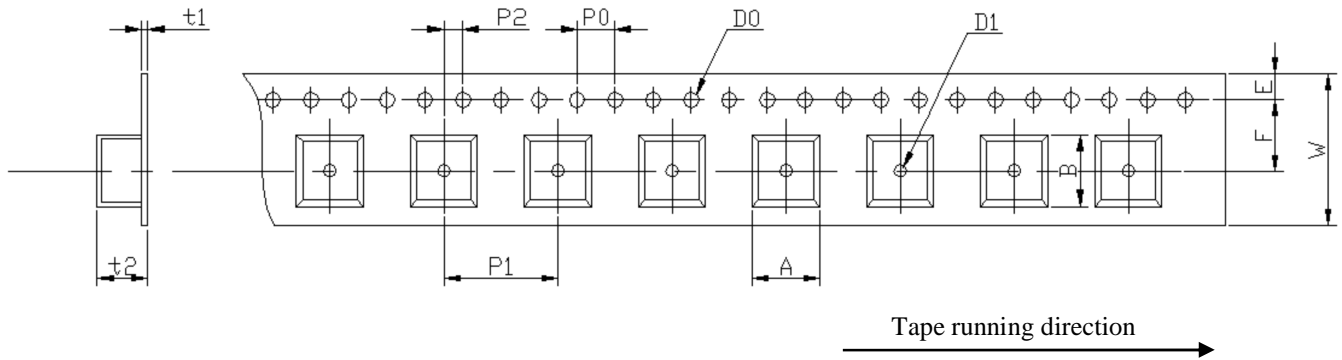
TMX IT01

RF SAW Filter for Remote Control

Specification (Rev 1)

May 30th, 2016

Tape Specifications

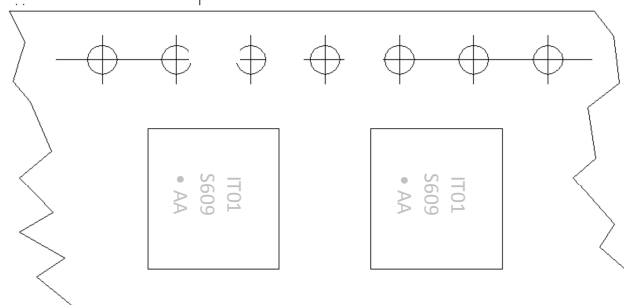
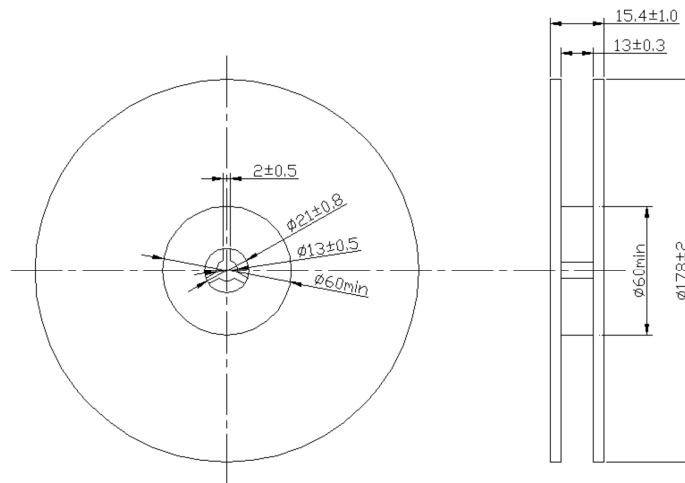


W	F	E	P0	P1	P2	D0	D1	t1	t2	A	B
12 ±0.3	5.5 ±0.3	1.75 ±0.1	4.0 ±0.2	4.0 ±0.1	2.0 ±0.2	Ø1.5 ±0.1	Ø1.5 ±0.25	0.31 max	1.7 max	3.3 max	3.3 max

unit : mm

Reel Specifications

TMX IT01 is packaged in T&R by 3Kpcs/reel



Tape running direction

TMX IT01

RF SAW Filter for Remote Control

Specification (Rev 1)

May 30th, 2016

Reliability Tests

1. **Thermal Shock:**

The components shall remain within the electrical specifications after being kept at the condition of heat cycle conditions: TA=-40°C ±3°C, TB=85°C ±2°C, t1=t2=30min, switch time ≤3min & cycle time: 100 times, recovery time: 2h±0.5h.

2. **The Temperature Storage:**

High Temperature Storage: The components shall remain within the electrical specifications after being kept at the 85°C ±2°C for 500 hours, recovery time: 2h ±0.5h.

Low Temperature Storage: The components shall remain within the electrical specifications after being kept at the -40°C ±3°C for 500 hours, recovery time: 2h ±0.5h.

3. **Humidity test:**

The components shall remain within the electrical specifications after being kept at the condition of ambient temperature 60°C ±2°C, and 90~95% RH for 500 hours.

4. **Drop test:**

The components shall remain within the electrical specifications after random free drops 10 times from height of 1.0 meter onto concrete floor, and the specimens shall meet the electrical specifications.

5. **Vibration Fatigue:**

The components shall remain within the electrical specifications after loaded vibration at 10~55Hz, amplitude 1.5mm, X, Y, Z, direction, during 2 hours.

6. **Mechanical Shock:**

The components shall remain within the electrical specifications after 1000 shocks, acceleration 392 m/s², duration 6ms.

Note: As a result of the particularity of inner structure of SAW products, the components can easily be breakdown by electrostatic shock; so it's mandatory to pay attention to ESD protect during the tests.