

# TMX FT06

SAW Low-loss Filter for Wireless Remote Control  
*Preliminary Specification (Rev 1)*

▣ Features .....	P01
▣ Package Drawing .....	P01
▣ Technical Characteristics .....	P02
▣ Test Circuit .....	P02
▣ Nominal frequency Response .....	P03
▣ Maximum Ratings .....	P04
▣ Marking & Packaging .....	P04
▣ Carrier tape dimension .....	P05
▣ Reel dimension .....	P05
▣ Reliability .....	P06

# TMX FT06

## SAW Low-loss Filter – Wireless Remote Control

Preliminary Specification (Rev 1)

Dec 18<sup>th</sup>, 2012

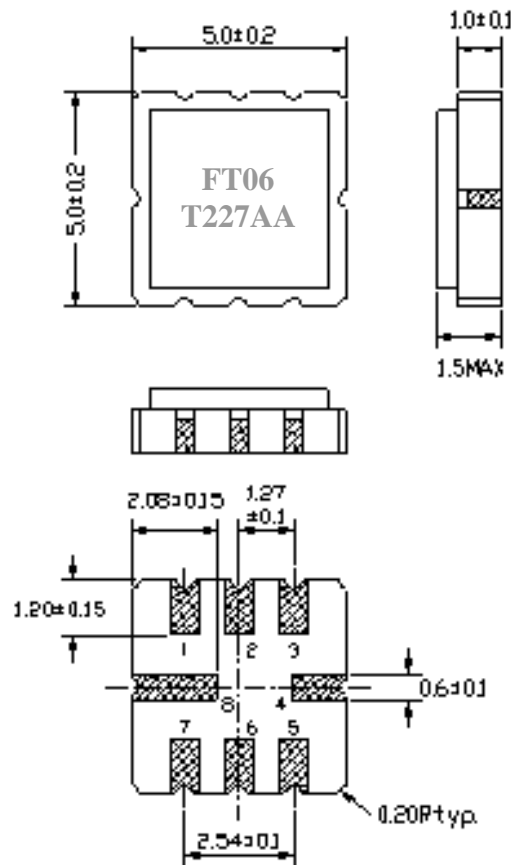
### Features

- ❑ RF low-loss SAW Filter for wireless remote control receivers
- ❑ 433.42 MHz Center Frequency
- ❑ Ceramic package for Surface Mounted Technology
- ❑ RoHS Compliant

### Package Drawing & Pin out

The product is in conformance with the European RoHs Regulation 2002/95.

Unit: mm



Pin Configuration	
1	Input Ground
2	Input
5	Output
6	Output Ground
4,8	Case Ground
Other	Ground

# TMX FT06

## SAW Low-loss Filter – Wireless Remote Control

Preliminary Specification (Rev 1)

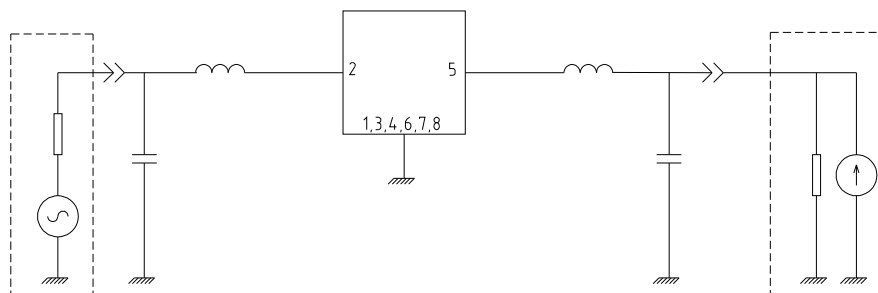
Dec 18<sup>th</sup>, 2012

### Technical Characteristics

Reference Temperature : +25°C

Electrical Parameters	Unit	Minimum	Typical	Maximum
Center Frequency $f_c$	MHz	-	433.42	-
Insertion Loss 433.30 ~ 433.620MHz	dB	-	2.0	4.5
Amplitude Ripple 433.26 ~ 433.620MHz	dB	-	1.0	2.0
<b>Relative Attenuation</b>				
10.00 ~ 414.00 MHz	dB	45.0	50.0	-
414.00 ~ 428.00 MHz	dB	40.0	45.0	-
428.00 ~ 432.42 MHz	dB	15.0	20.0	-
434.42 ~ 442.00 MHz	dB	10.0	15.0	-
442.00 ~ 550.00 MHz	dB	35.0	40.0	-
550.00 ~ 1000.00 MHz	dB	45.0	50.0	-
Temperature Coefficient of Frequency $TC_f$	Ppm/K <sup>2</sup>	-	-0.03	-
<b>External Impedance Match</b>				
Series Inductance $L$	nH	-	33	-
Shunt Capacitance $C$	pF	-	5.6	-
<b>Package type &amp; size</b>				
Length x Width	mm		5.0 x 5.0	
Height	mm			1.5
<b>Pin Out</b>				
Input	2	Output	5	
Case Ground	4, 8	To be grounded	1, 3, 4, 6, 7, 8	

### Test Circuit



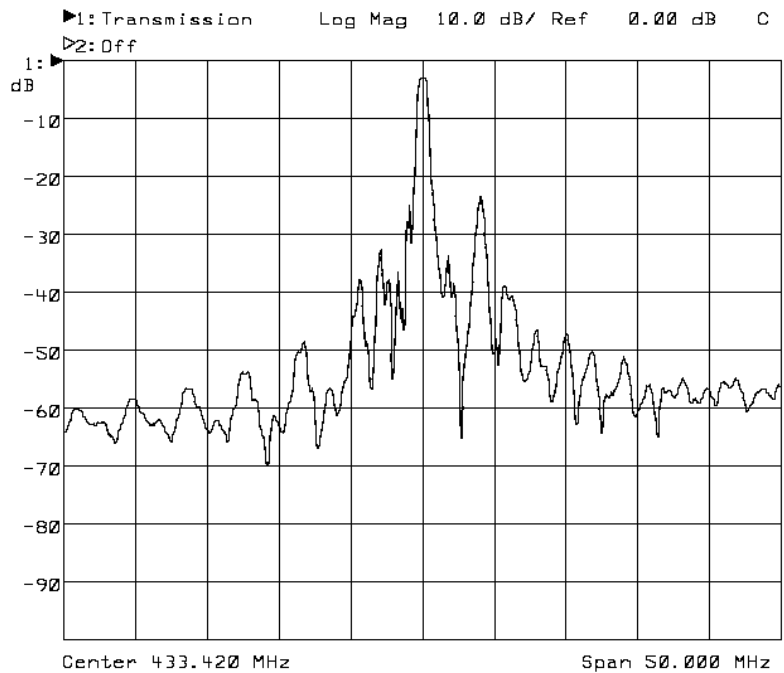
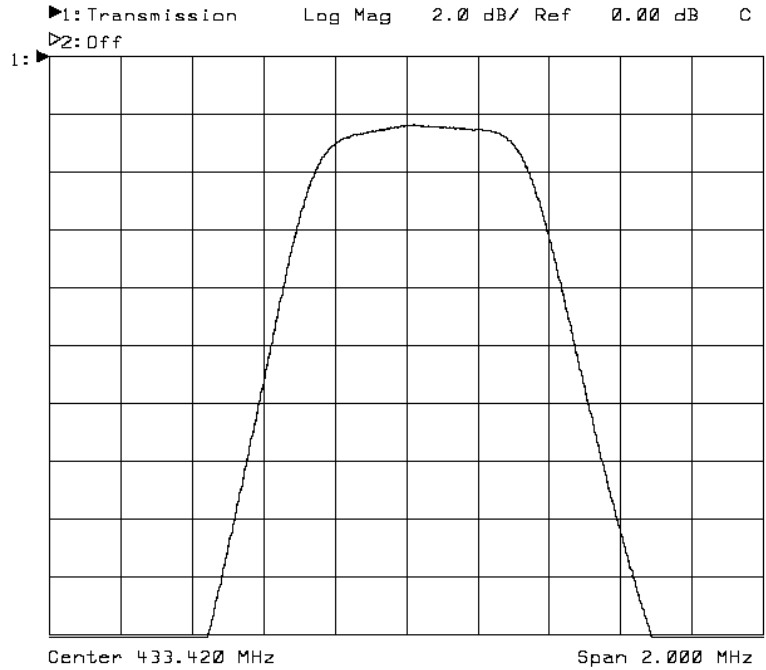
# TMX FT06

## SAW Low-loss Filter – Wireless Remote Control

Preliminary Specification (Rev 1)

Dec 18<sup>th</sup>, 2012

### Nominal Frequency Response



# TMX FT06

## SAW Low-loss Filter – Wireless Remote Control

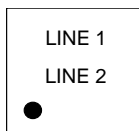
Preliminary Specification (Rev 1)

Dec 18<sup>th</sup>, 2012

### Maximum Ratings

Storage Temperature Range	°C	[-40°C ; +85°C]
Operating temperature	°C	[-40°C ; +85°C]
DC Permissive Voltage	V	12
Maximum Input Power	dBm	10

### Marking



Line 1: "NNNN" is the reference to Temexpress Part number with only the last 4 digits

Line 2: TYWWZZ is the date code as:

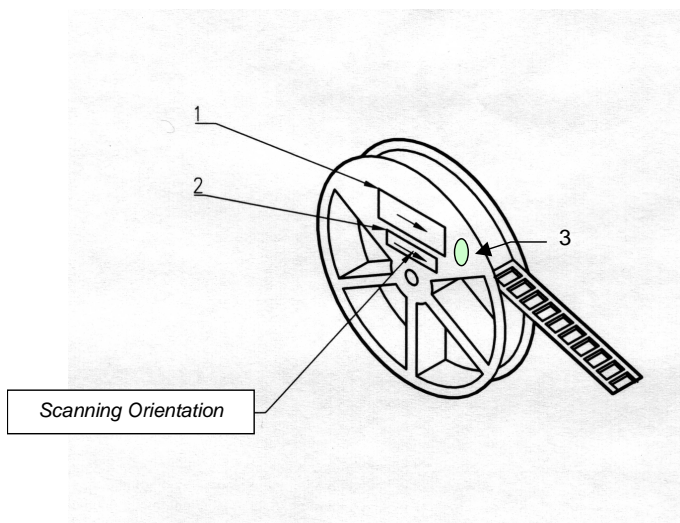
T: Partner identifier.

Y: last digit of the year.

WW: number of week in the year

ZZ: Lot number in the week (from AA to ZZ).

### Packaging



3Kpcs/reel

- 1 – TEMEXPRESS Label
- 2 – ESD Prevention Label
- 3 – Pb Free Label

### TMX FT06

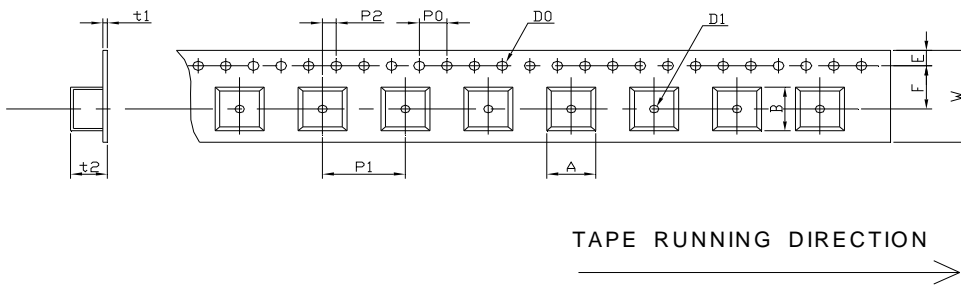
#### SAW Low-loss Filter – Wireless Remote Control

Preliminary Specification (Rev 1)

Dec 18<sup>th</sup>, 2012

#### Carrier Tape Dimension

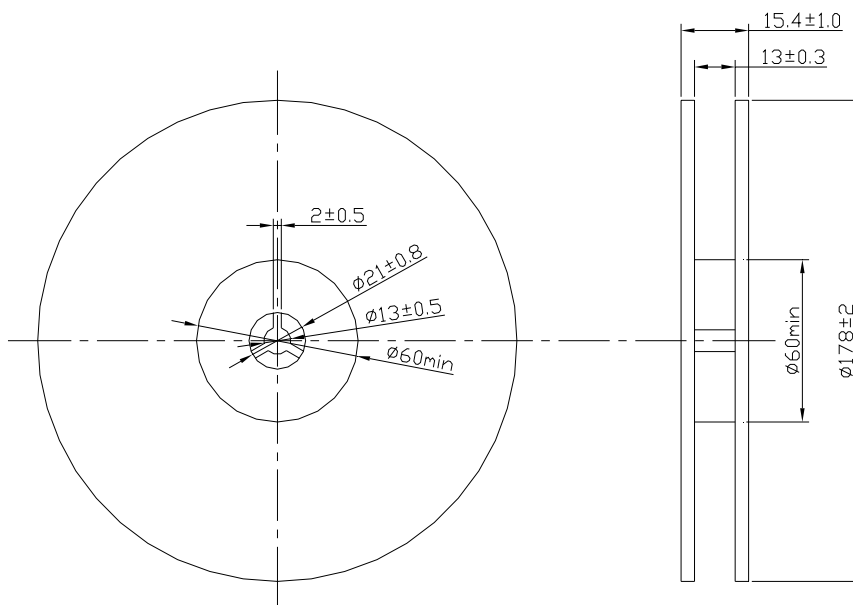
[Unit: mm]



W	F	E	P0	P1	P2	D0	D1	t1	t2	A	B
12.0 ±0.3	5.5 ±0.1	1.75 ±0.1	4.0 ±0.2	8.0 ±0.1	2.0 ±0.2	φ1.5 ±0.1	φ1.5 ±0.25	0.31 max	1.95 max	5.5 max	5.5 max

#### Reel Dimensions

[Unit: mm]



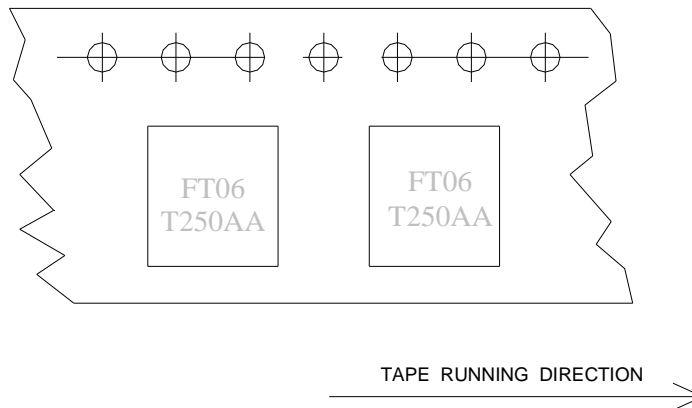
# TMX FT06

## SAW Low-loss Filter – Wireless Remote Control

Preliminary Specification (Rev 1)

Dec 18<sup>th</sup>, 2012

### Part Direction



### Reliability

#### Resistance to soldering heat:

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

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

#### Thermal Shock:

The components shall remain within the electrical specifications after being kept at the condition of heat cycle conditions:  $T_A = -40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ ,  $T_B = 85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ,  $t_1 = t_2 = 30\text{min}$ , switch time  $\leq 3\text{min}$  & cycle time: 100 times, recovery time:  $2\text{h} \pm 0.5\text{h}$ .

#### Temperature Storage:

High Temperature Storage: The components shall remain within the electrical specifications after being kept at the  $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$  for 500 hours, recovery time:  $2\text{h} \pm 0.5\text{h}$ .

Low Temperature Storage: The components shall remain within the electrical specifications after being kept at the  $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$  for 500 hours, recovery time :  $2\text{h} \pm 0.5\text{h}$ .

#### Humidity test:

The components shall remain within the electrical specifications after being kept at the condition of ambient temperature  $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , and 90~95% RH for 500 hours.

#### 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 in table 5, external visual inspection.

# TMX FT06

## SAW Low-loss Filter – Wireless Remote Control

*Preliminary Specification (Rev 1)*

Dec 18<sup>th</sup>, 2012

### **Solderability test:**

At the condition of temperature 245°C ±5°C Depth: DIP 2/3, SMD 1/5, time: 3.0s-5.0s, 80% or more of the immersed surface shall be covered with solder and well-proportioned.

### **Vibration Fatigue:**

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

### **Terminal Strength:**

The force 10±1 seconds of 19.6N is applied to each terminal, and 45° in the same direction 2 times with 2N bending force (Exception: SMD)

### **Mechanical Shock:**

The components shall remain within the electrical specifications after 1000 shocks, acceleration 392 m/s<sup>2</sup>, duration 6ms.

**Note:** As a result of the particularity of inner structure of SAW products, it easy to be breakdown by electrostatic, so we should pay attention to ESD protect in the test.