



TMX CT05

RF SAW Filter – REMOTE CONTROL
Specification (Rev-3)

▣ Features.....	P01
▣ Technical Characteristics	P01
▣ Matching Network Configuration	P02
▣ Test Circuit	P02
▣ Maximum Ratings	P02
▣ Nominal Frequency Response	P03
▣ Package Drawing & Pin-out	P04
▣ Marking.....	P04
▣ Tape & Reel Drawing.....	P05
▣ Recommended reflow soldering profile	P06
▣ Reliability tests.....	P07

Temexpress is a
brand name
of **raKon**

TMX CT05

RF SAW Filter - REMOTE CONTROL

Specification (Rev 3)

February 11th, 2022

Features

- ❑ Low-loss RF SAW Filter
- ❑ 866.5 MHz Center Frequency
- ❑ Wide Passband Width: ± 3.5 MHz
- ❑ Low amplitude ripple
- ❑ 50 Ohms Single Configuration. No matching network required
- ❑ Ceramic package for Surface Mounted Technology

Technical Characteristics

Electrical Parameters	Unit	Minimum	Typical ⁽¹⁾	Maximum
Center Frequency f_0	MHz	-	866.5	-
Passband Width	MHz	-	± 3.5	-
Insertion Loss in 863.0 MHz-870.0 MHz	dB	-	2.4	3.2
Amplitude Ripple in 863.0 MHz-870.0 MHz	dB	-	0.3	1.0
Absolute Attenuation				
DC to 800.0 MHz	dB	52	57	-
800.0 MHz to 830.0 MHz	dB	45	50	-
830.0 MHz to 850.0 MHz	dB	30	35	-
885.0 MHz to 905.0 MHz	dB	25	30	-
905.0 MHz to 1500.0 MHz	dB	47	54	-
1500 MHz to 2000.0 MHz	dB	40	45	-
VSWR in 863.0 MHz-870.0 MHz		-	1.5	2.0
Source Impedance (single ended)	Ω	-	50 ⁽²⁾	-
Load Impedance (single ended)	Ω	-	50 ⁽²⁾	-
Package type & size				
Length x Width	mm ²	-	3.0 x 3.0	-
Height	mm	-	1.3	1.5
Pin Out				
Input	2	Output	5	
Case Ground	1,3,4,6	To Be Grounded	1,3,4,6	

Notes :

- (1) Typical values are nominal performances at room temperature
- (2) No external matching circuit is required

TMX CT05

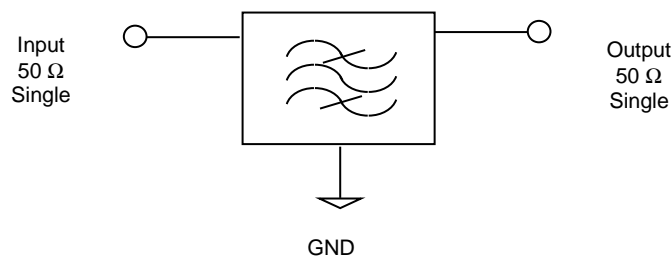
RF SAW Filter - REMOTE CONTROL

Specification (Rev 3)

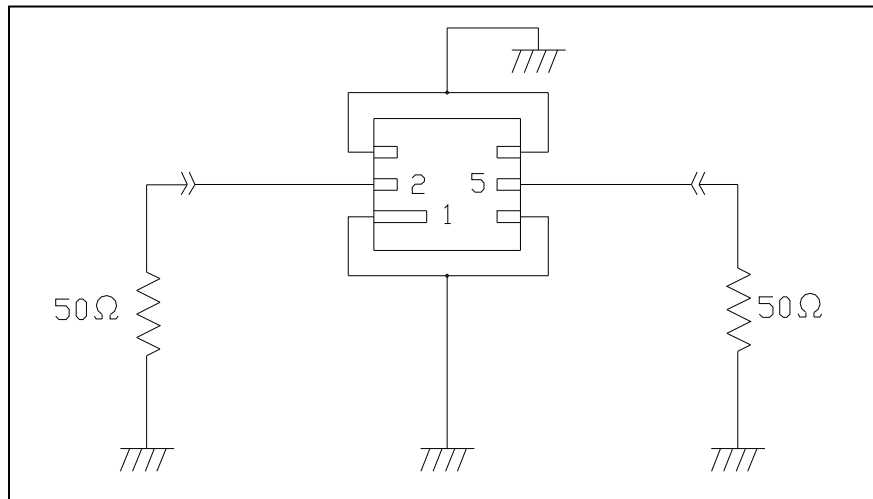
February 11th, 2022

Matching Network Configuration

50 Ω / 50 Ω CONFIGURATION



Test Circuit



Maximum Ratings

Rating	Unit	Value
Operating Temperature Range	-45 to +125	°C
Storage Temperature Range	-40 to +125	°C
ESD Voltage (HB)	150	V
DC permissive Voltage (max value)	12	V
Maximum RF Power	15	dBm

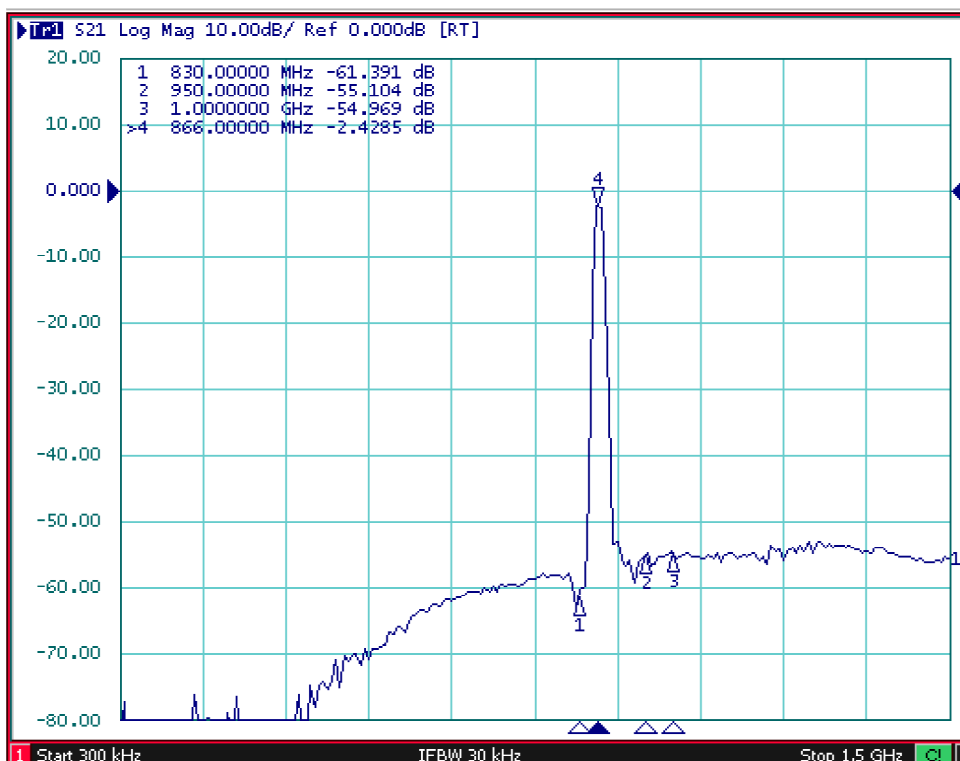
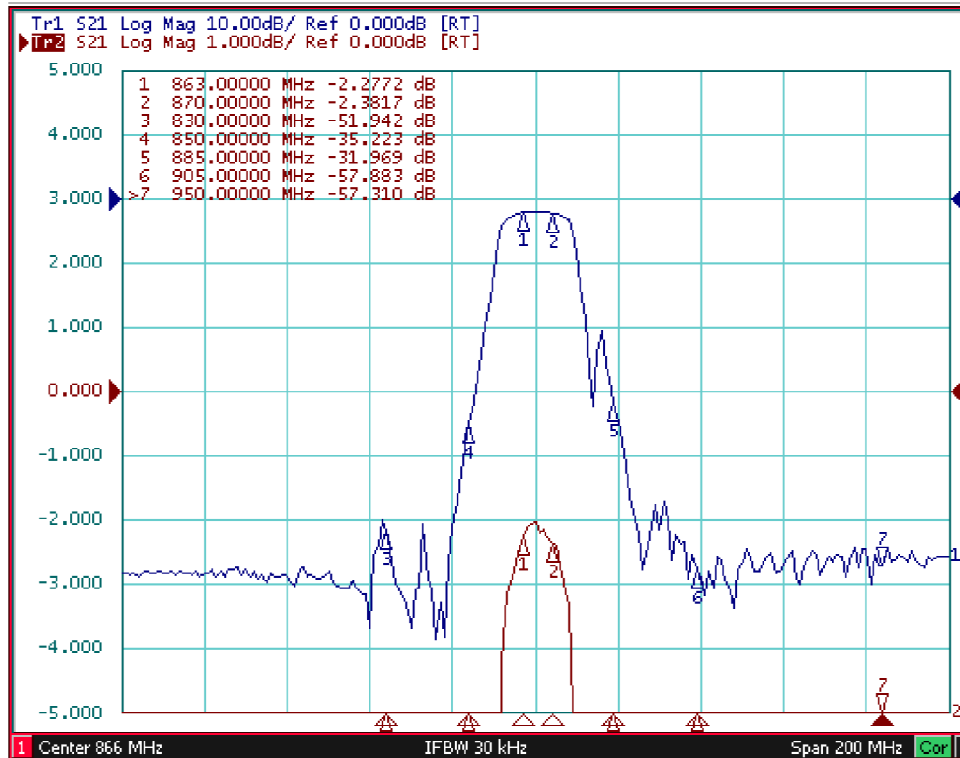
TMX CT05

RF SAW Filter - REMOTE CONTROL

Specification (Rev 3)

February 11th, 2022

Nominal Frequency Response : Typical S21 Response



TMX CT05

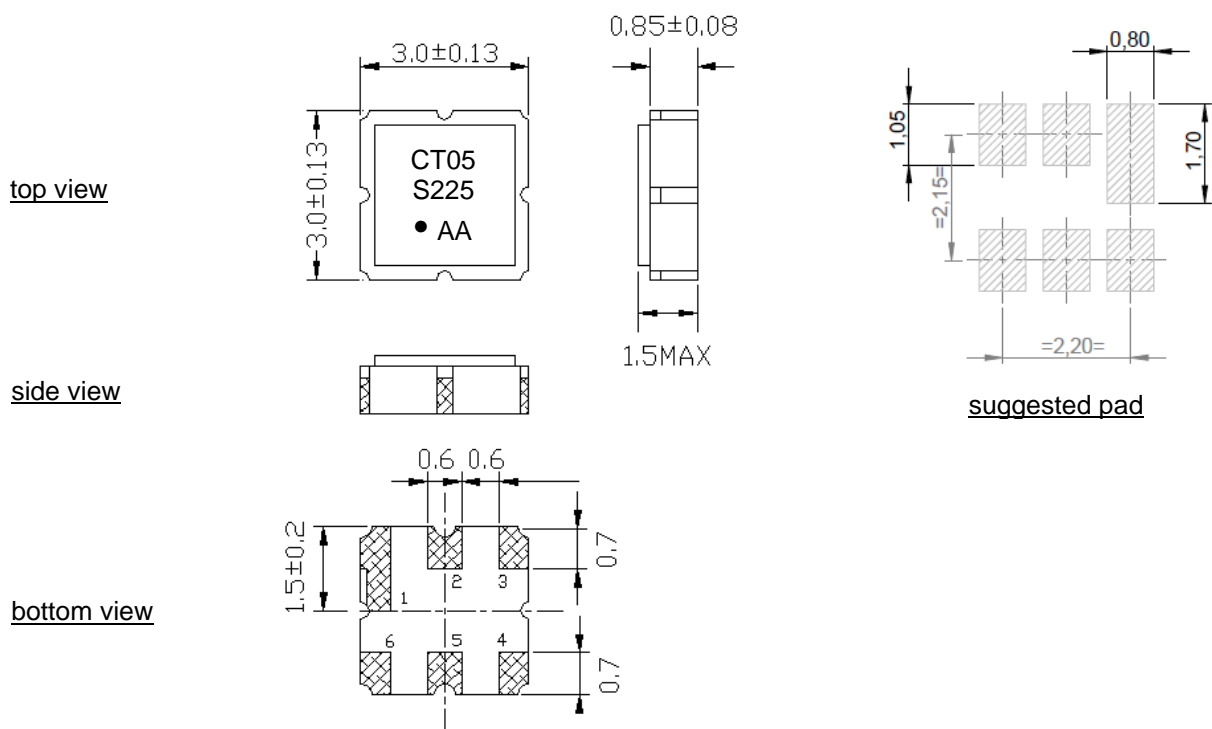
RF SAW Filter - REMOTE CONTROL

Specification (Rev 3)

February 11th, 2022

Package Drawing & Pin out

The product is in conformance with the European RoHs Regulation Directive EU 2015/863.



top view

side view

bottom view

suggested pad

unit : mm

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

Marking		
Line 1	CT05	Temexpress designation
Line 2	S225	S is production Code / 2 is Year 2022 & 25 is Week 25
Line 3	AA	AA" is internal production batch code, it corresponds to the wafer

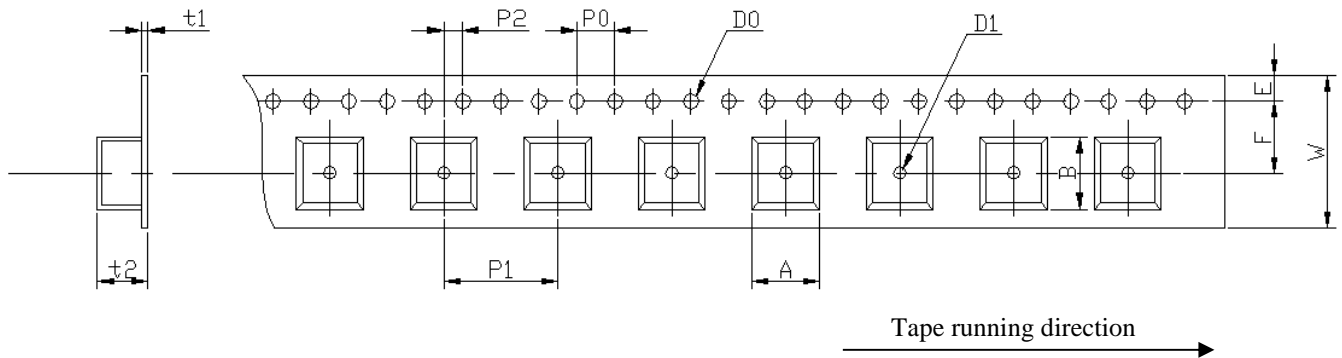
TMX CT05

RF SAW Filter - REMOTE CONTROL

Specification (Rev 3)

February 11th, 2022

Tape Specifications

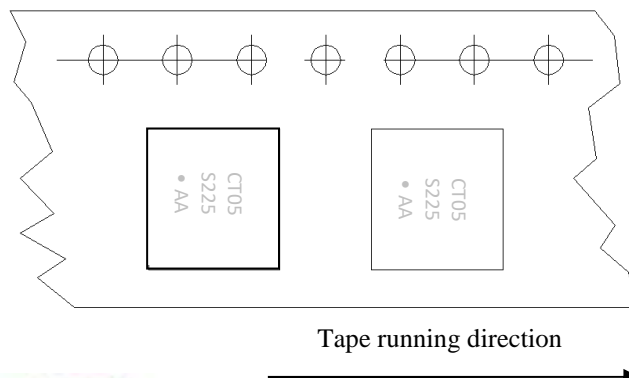
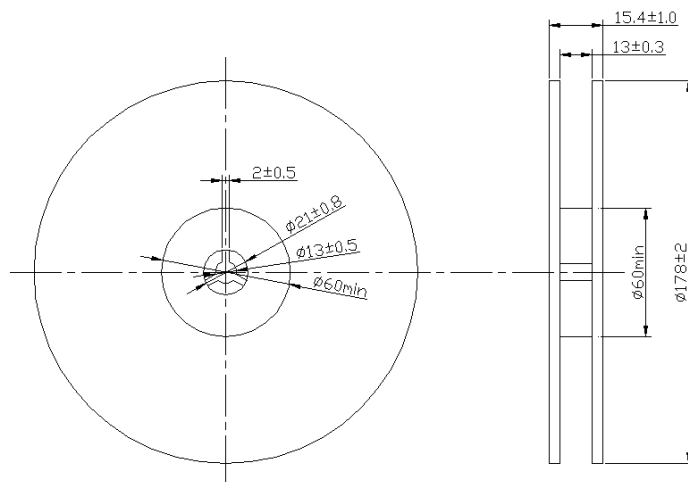


W	F	E	P0	P1	P2	D0	D1	t1	t2	A	B
12 ±0.3	5.5 ±0.3	1.75 ±0.1	4.0 ±0.2	4.0 ±0.1	2.0 ±0.2	∅1.5 ±0.1	∅1.5 ±0.25	0.31 max	1.7 max	3.3 max	3.3 max

unit : mm

Reel Specifications

TMX CT05 is packaged in T&R by 3Kpcs/reel



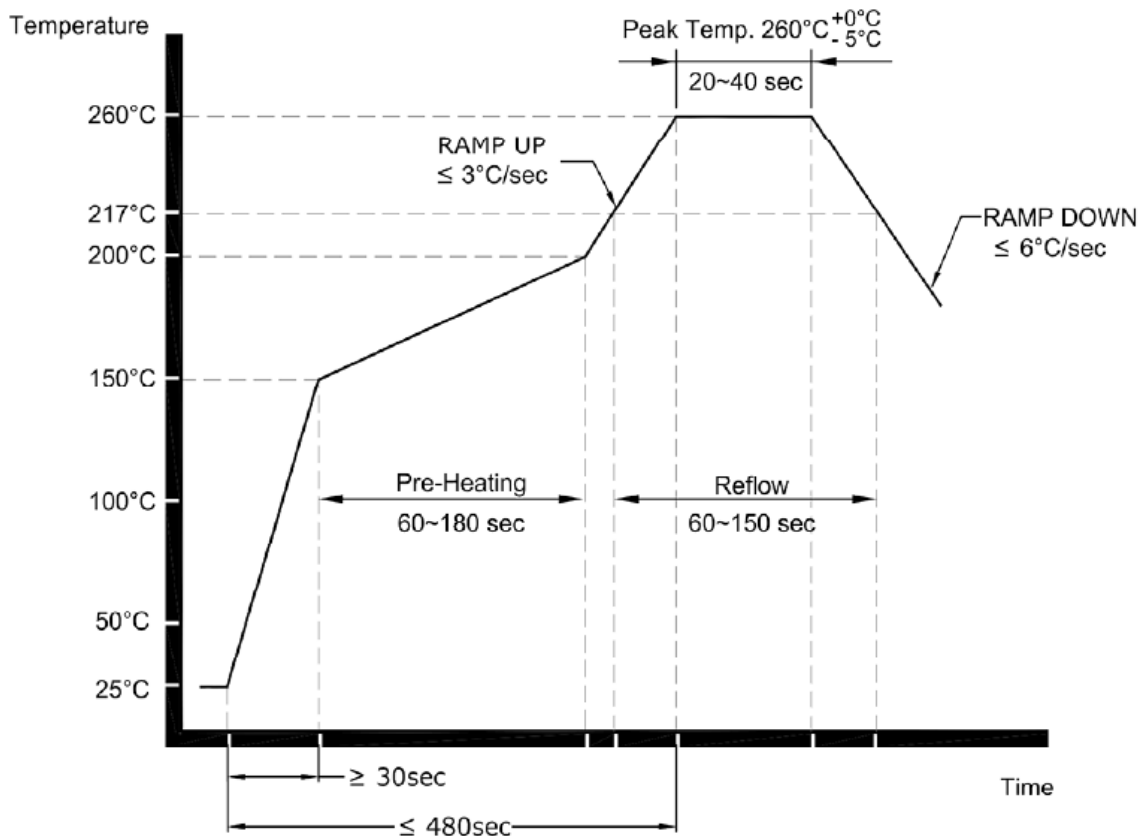
TMX CT05

RF SAW Filter - REMOTE CONTROL

Specification (Rev 3)

February 11th, 2022

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 ± 5 degC during 10 ± 1 seconds.

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

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 CT05

RF SAW Filter - REMOTE CONTROL

Specification (Rev 3)

February 11th, 2022

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.