




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	Q0531-SER433M920S001
DATE	May 31, 2023
REVISION	A2
DESCRIPTION	SMD SAW Resonator L1.8*W1.4*H0.9mm 1814 Type 2 Pads SER Series 433.92000MHz, 1-Port, Insertion Loss: 2.2 dB Max. Tolerance ±100KHz Operating Temp. Range -40°C ~+85°C, Reflow Profile Condition 260 °C Max. Tape/Reel, 4000pcs/Reel RoHS/RoHS III compliant
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	TGS SER 433.92MB TLF
PART CODE	SER433M920S001

VENDOR APPROVE			
Issued/Checked/Approved			
DATE: May 31, 2023			

CUSTOMER APPROVE	
DATE:	

5/31/2023

SMD SAW RESONATOR 1814 TYPE SER SERIES

MAIN FEATURE

- SMD SAW Resonator L1.8*W1.4*H0.9mm 1814 Type 2 Pads ,
- One Port SAW Resonator
- Electrostatic Sensitive Device(ESD)
- Low-loss and Short Lead time
- Cross more competitors part
- RoHS/RoHS III compliant



APPLICATION

- Bluetooth, wireless communication set
- Communication Electronics

RFQ
Request For Quotation

PART CODE GUIDE

SER	433M920	S	001
1	2	3	4

- 1) SER: SMD SAW Resonator L1.8*W1.4*H0.9mm 1814 Type 2 Pads SER Series
- 2) 433M920: Frequency range code for 433.92000MHz
- 3) S: SMD type, Package Tape/Reel,
- 4) 001: Internal code (A~Z or 1~9 or Blank)

SMD SAW RESONATOR 1814 TYPE SER SERIES

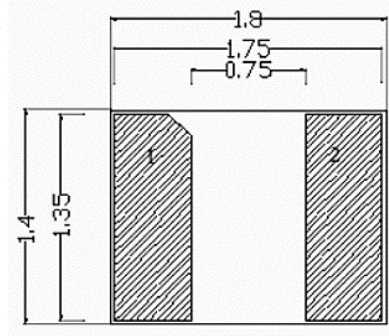
DIMENSION (Unit: mm, Tol.: +-0.15mm)

Image for reference

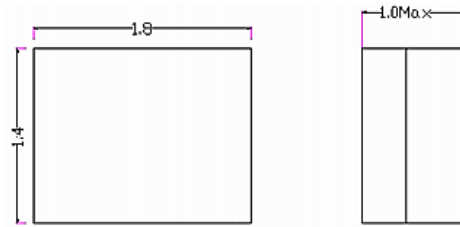


Marking
Standard

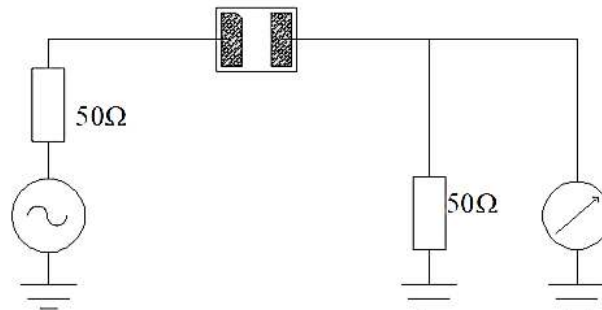
SER series
L1.8*W1.4*H0.9mm
1814 Type



Pin	Configuration
1	Input/Output
2	Output/input



Test Circuit



SMD SAW RESONATOR 1814 TYPE SER SERIES
ELECTRICAL PARAMETERS

Parameter	Part No. Symbol	Units	Value		
			Min.	Typical	Max.
Original Manufacturer	TGS		TGS Crystals		
Holder Type	SER		SMD SAW Resonator L1.8*W1.4*H0.90mm 1814 Type 2 Pads		
Frequency Range (f0)	433.92M	MHz	433.92		
Frequency Tolerance	B	KHz		±100	
Operation Temperature		°C	-40		+85
Storage Temperature		°C	-55		+125
DC Voltage		V		±10	
RF Power Dissipation		dBm		10	
Insertion Loss		dB		1.3	2.2
Quality Factor (Q) @Unload				12000	
Quality Factor (Q) @50 Ω Loaded				1500	
Turnover Temperature		°C	10	25	40
Frequency Temp. Coefficient		ppm/°C		0.032	
Aging (Absolute Value during the First Year)		ppm/Year		≤±10	
DC Insulation Resistance		MΩ	1.0		
RF Equivalent RLC Model @Motional Resistance		Ω		12.196	
RF Equivalent RLC Model @Motional Inductance		μH		183.82	
RF Equivalent RLC Model @Motional Capacitance	fF		0.733		
Static Capacitance	pF		2.23		
Package	T		Tape/Reel		
RoHS Status	LF		RoHS III compliant		
Add Value			Blank: N/A		
Internal Control Code			Blank: N/A		

Note: Original Part Number: TGS SER 433.92MB TLF

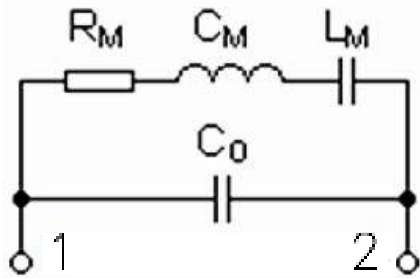
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FREQUENCY RESPONSE

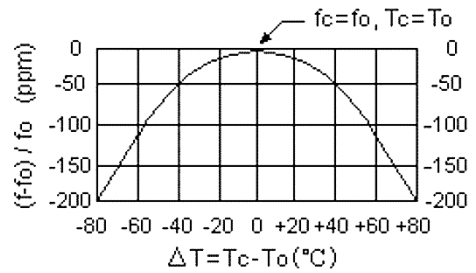


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EQUIVALENT LC MODEL



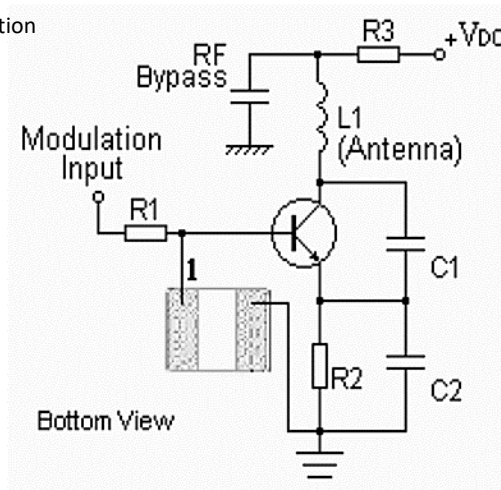
TEMPERATURE CHARACTERISTICS



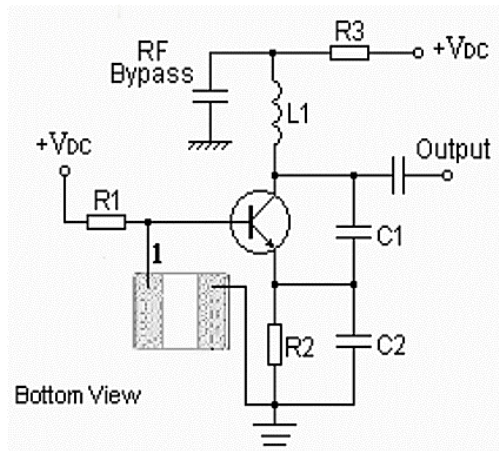
Note: The curve shown above accounts for resonator contribution only and does not include LC component temperature contributions.

PLICTYPCIAL APATION CIRCUITS

Typical Low-power Transmitter Application



Typical Local Oscillator Application

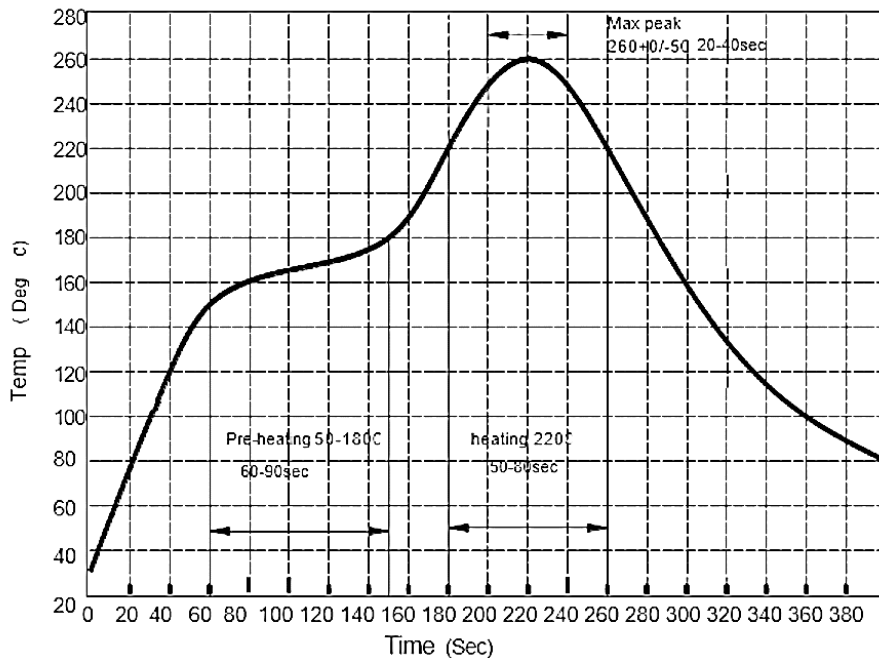


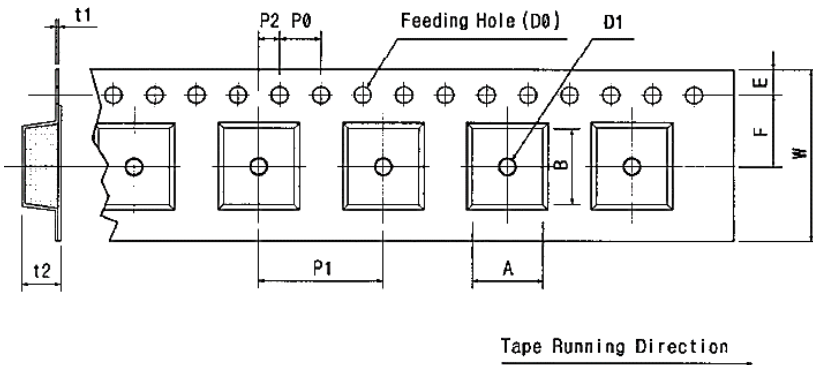
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RELIABILITY

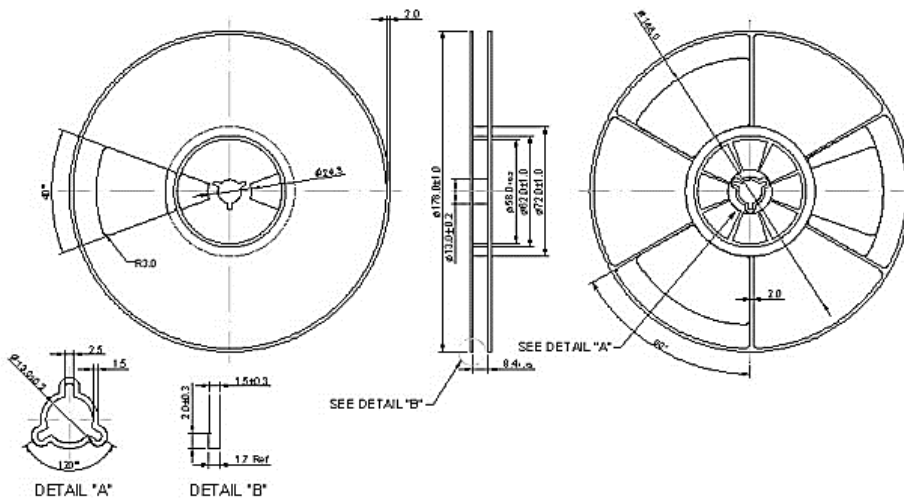
Test Items	Test Method And Conditions	Requirement
Temperature Storage	(1) Temperature: 85°C±2°C , Duration: 250h , Recovery time: 2h±0.5h (2) Temperature: -55°C±3°C , Duration: 250h ,Recovery time: 2h±0.5h	It shall remain electrical performance after tests
Humidity Test	Conditions: 60°C±2°C , 90~95% RH Duration: 250h	
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.	
Vibration Fatigue	Frequency of vibration: 10~55Hz Amplitude:1.5mm Directions: X,Y and Z Duration: 2h	
Drop Test	Cycle time: 10 times Height: 1.0m	
Solderability	Temperature: 245°C±5°C Duration: 3.0s--5.0s Depth: DIP--2/3 , SMD--1/5	
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	

SUGGESTED REFLOW PROFILE (For Reference Only)



SMD SAW RESONATOR 1814 TYPE SER SERIES
TAPE DIMENSION (Unit: mm, 4000pcs/Reel)


Code	Dimension
W	8.00+/-0.30
F	3.50+/-0.05
E	1.75+/-0.10
P 0	4.00+/-0.10
P 1	4.00+/-0.10
P 2	2.00+/-0.10
D 0	Ø1.5+/-0.10
D 1	Ø1.0+/-0.25
t 1	0.21+/-0.03
t 2	1.00+/-0.05
A	1.90+/-0.10
B	2.30+/-0.10

REEL DIMENSION (Unit: mm)


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CAUTION

1. 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.
2. Static voltage between signal load and ground may cause deterioration and destruction of the component. Please avoid static voltage.
3. Ultrasonic cleaning may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.
4. Only leads of component may be soldered. Please avoid soldering another part of component.
5. There is a close relationship between the device's performance and matching network. The specifications of this device are based on the test circuit shown above. L and C values may change depending on board layout. Values shown are intended as a guide only.
6. The temperature of manual welding should not exceed 300 °C.
7. The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
8. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
9. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) perse, not for applications, processes and circuits implemented within components or assemblies.
10. For questions on technology, prices and delivery, please contact our sales offices or e-mail: sales@NextGenComponent.com.

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