SPECIFICATION SHEET

SMD SAW RESONATOR 6 PADS 3030 TYPE SDR SERIES

SPECIFICATION SHEET NO.	S0317 - SDR433M420S012	
ORIGINAL MFG/PART NO.	TGS Crystals/SDR 433.42MA TLF/R433.42S12	
NEXTGEN PART CODE	SDR433M420S012	Indicate This Code For RFQ /Order
DATE	Mar. 17, 2025	
REVISION	A2	Updated With Most Recent Data
DESCRIPTION AND MAIN PARBMETRICS	SMD SAW Resonator, 6 Pads, 3030 Type, SDR Series Dimension L3.0*W3.0*H1.25mm Center Frequency 433.420MHz; Frequency Tolerance ±75KHz Insertion Loss: 1.7dB Typical, 2.0dB Max. Operating Temp. Range -40℃ ~ +85℃ Reflow Profile Condition 260℃ Max. Package in Tape/Reel, 3000pcs/Reel REACH/RoHS/RoHS III Compliant	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE
Issued/Checked/Approved NextGen Components, Inc. Mandy Xu NextGen Components, Inc. Ruby Zhang NextGen Components, Inc. Jack Zhang
Effective Date: Mar. 17, 2025

CUSTOMER APPROVE
Date:

MAIN FEATURE

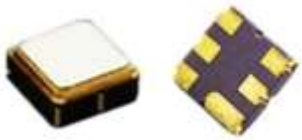


Image shown is a representation only. Exact specifications should be obtained from the product dimension.

- SMD SAW Resonator 3030 Type 6 Pads
- Dimension L3.0*W3.0*H1.25mm
- Low-loss SAW Resonator
- One Port SAW Resonator
- Ceramic Package For Surface Mounted Technology (SMT)
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level (MSL) 1
- Short Lead time
- Cross Competitors Parts and More
- REACH/RoHS/RoHS III Compliant

APPLICATION

- Bluetooth, Wireless Communication Set
- Communication Electronics

ELECTRICAL CHARBCTERISTICS

- See Page 5
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code SDR433M420S012 For RFQ and Order.

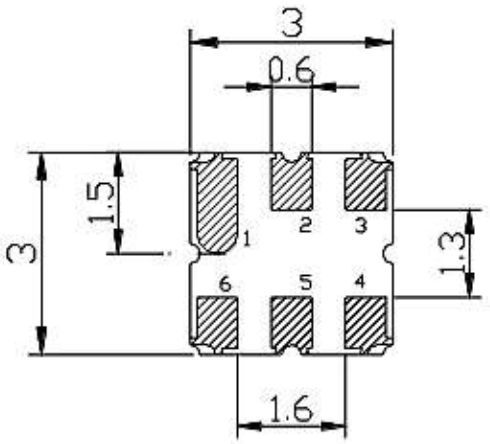
PART CODE GUIDE

RFQ
Request For Quotation

CODE	NAME	KEY SPECIFICATION OPTION
SDR	Series Code	SMD SAW Resonator, 6 Pads, 3030 Type Dimension L3.0*W3.0*H1.25mm
433M42	Frequency Range Code	433M42: 433.420MHz
0S012	Internal Control Code	Letter A~Z, a~z or Digits (1-9)
XX	Special/Custom Parameters Code	Blank: N/A XX: Letter A~Z, a~z or Digits (0~9) for Special/Custom Parameters

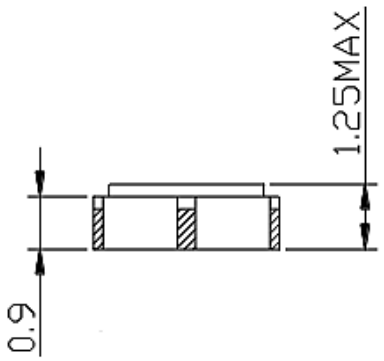
DIMENSION - Unit: mm, L3.0*W3.0*H1.25mm

Bottom View



PIN	CONFIGURATION
2	Input/Output
5	Output/Input
1, 3, 4, 6	Case Ground

Side View



MAX. RATING & CHARACTERISTICS - At 25±2℃ Ambient Temperature Unless Otherwise Specified.

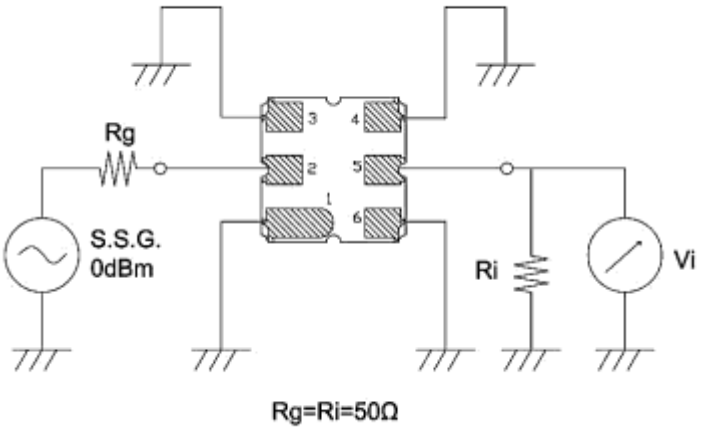
PARAMETER	SYMBOLS	VALUE	UNITS
RF Power Level	P	10	dBm
DC Voltage	V_{DC}	±30	V
Operating Temperature Range	T_A	-40 to +85	°C
Storage Temperature Range	Tstg	-55 to +125	°C

ELECTRONICAL CHARACTERISTICS

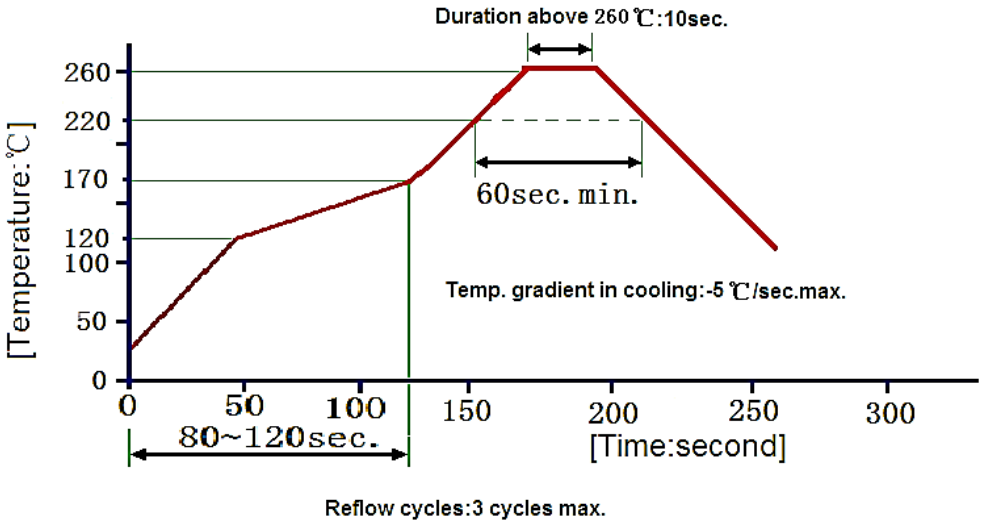
1) Test Temperature: 25℃±2℃ 2) Terminating source impedance: 50Ω 3) Terminating load impedance: 50Ω .

PARAMETER		SYMBOLS	CHARACTERISTICS			
			MIN.	TYPICAL	MAX.	UNIT
Center Frequency- Absolute Frequency		F_C	-	433.420	-	MHz
Frequency Tolerance from 433.42MHz		△fc	-	±75	-	KHz
Insertion Loss		IL	-	1.7	2.0	dB
Quality Factor	Unloaded Q	Q_U	-	12366	-	
	50Ω Loaded Q	Q_L	-	1642	-	
Temperature Stability	Turnover Temperature	T_0	25	40	55	°C
	Frequency Temp. Coefficient	FTC	-	0.032	-	ppm/°C
Frequency Aging	Absolute Value during the 1st Year	|fA|	-	≤10	-	ppm/yr
DC Insulation Resistance between Any Two Pins			1.0	-	-	MΩ
RF Equivalent RLC Model	Motional Resistance	R_M	-	17	25	Ω
	Motional Inductance	L_M	-	69.5	-	μH
	Motional Capacitance	C_M	-	1.94	-	fF
	Static Capacitance	C_0	2.0	2.3	2.6	pF

MEASUREMENT CIRCUIT – FOR REFERENCE ONLY

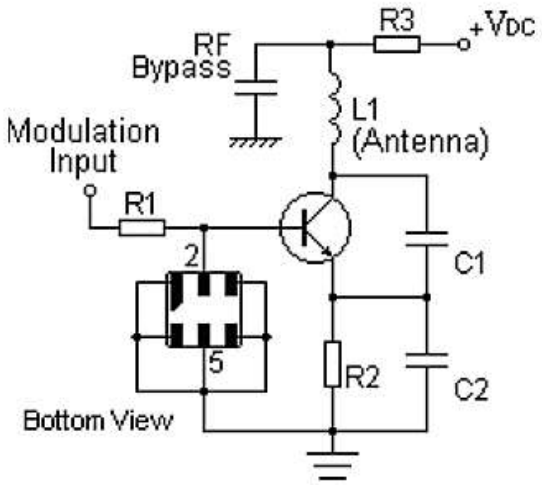


RECOMMENDED SOLDERING PROFILE – FOE REFERENCE ONLY

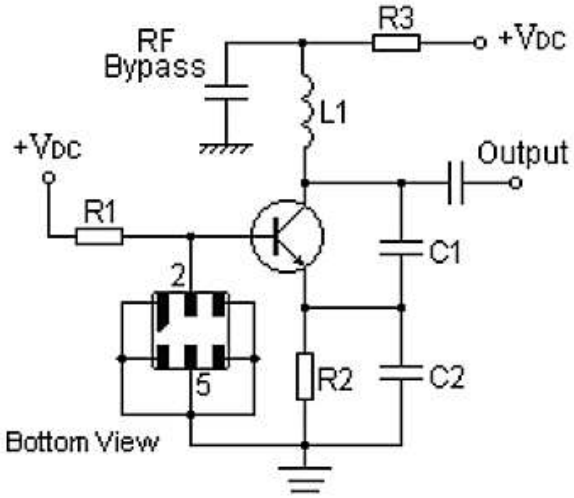


Reflow cycles:3 cycles max.

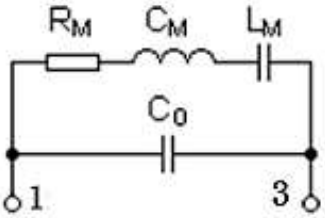
TYPICAL LOW-POWER TRANSMITTER APPLICATION – FOE REFERENCE ONLY



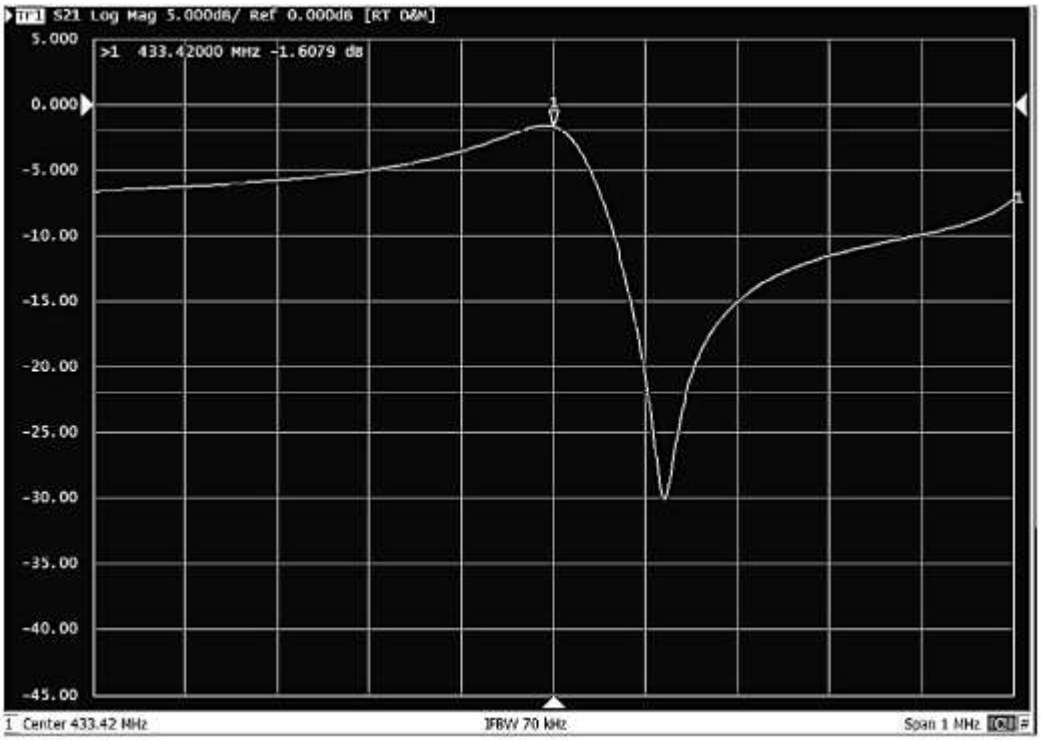
TYPICAL LOCAL OSCILLATOR APPLICATION – FOE REFERENCE ONLY



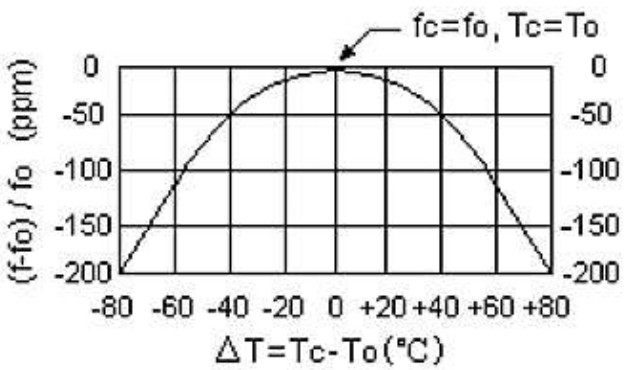
EQUIVALENT LC MODEL – FOR REFERENCE ONLY



FREQUENCY RESPONSE – FOR REFERENCE ONLY



TEMPERATURE CHARACTERISTICS – FOR REFERENCE ONLY

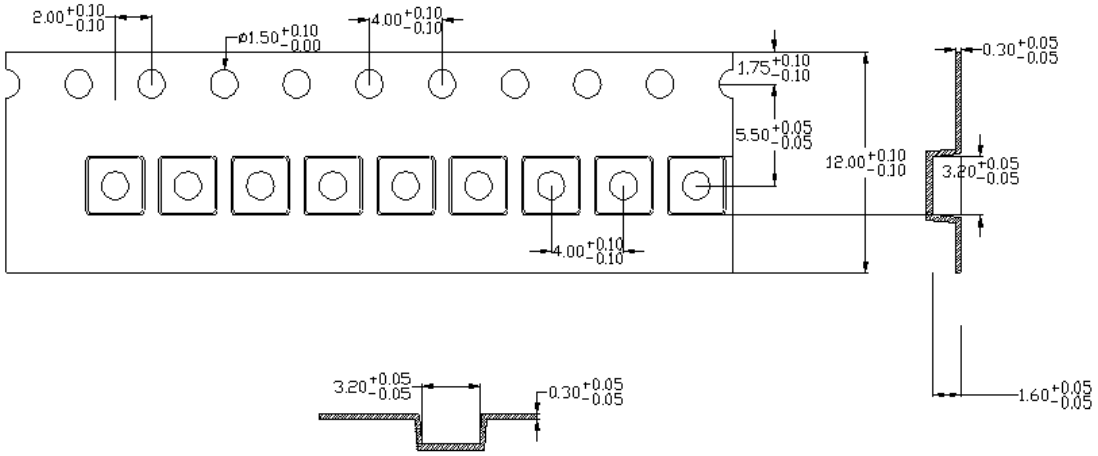


- Note: The curve shown above accounts for resonator contribution only and does not include LC component temperature contributions.

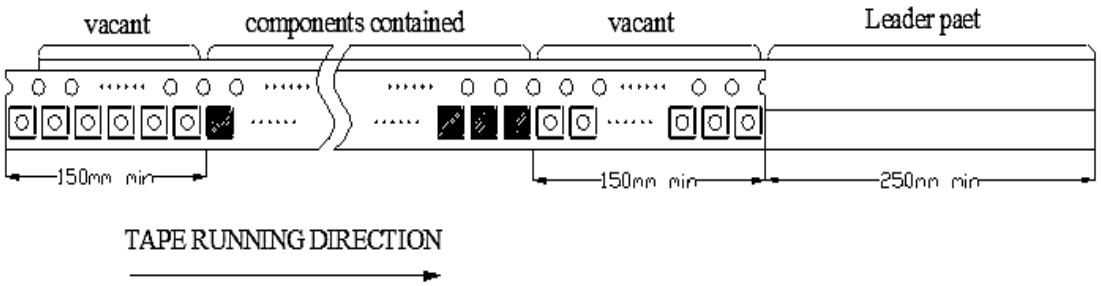
RELIABILITY CHARACTERISTICS

TEST ITEMS	TEST METHOD AND CONDITIONS
Temperature Storage	• Temperature: 85℃±2℃, Duration: 250h , Recovery time: 2h±0.5h • Temperature: –40℃±3℃, Duration: 250h ,Recovery time: 2h±0.5h
Humidity Test	• Conditions: 60℃±2℃ , 90~95% RH, Duration: 250h
Thermal Shock	• Heat cycle conditions: TA=-40℃±3℃, TB=85℃±2℃, 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℃±5℃, Duration: 3.0s--5.0s, Depth: DIP--2/3 , SMD--1/5
Resistance to Soldering Heat	• Thickness of PCB:1mm , Solder condition: 260℃±5℃ , Duration: 10±1s • Temperature of Soldering Iron: 350℃±10℃ , Duration: 3~4s , • Recovery time : 2 ± 0.5h
Remarks	• 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. • Static voltage between signal load and ground may cause deterioration and destruction of the component. Please avoid static voltage. • 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. • 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.

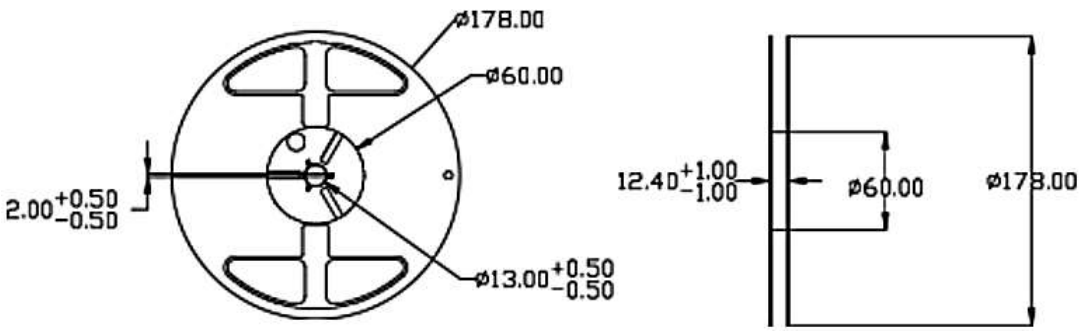
TAPE DIMENSION - Unit: mm, All Devices are packed in accordance with EIA standard RS-481-2.



CARRIER TAPE



REEL DIMENSION - Unit: mm, 3000pcs/Reel.



IMPORTANT NOTES AND DISCLAIMER

1. ROHS COMPLIANCE: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.
2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
4. NextGen Component, Inc (*NextGen*) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
5. *NextGen* makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does *NextGen* assume any liability for application assistance or customer product design.
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8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.