




SPECIFICATION SHEET NO.	S0510 - XD12M00000S420	
ORIGINAL MFG/PART NO.	TGS Crystals/CM53 12M0A20-20-30-40-60 TLF	
NEXTGEN PART CODE	XD12M00000S420	Indicate This Code For RFQ /Order
DATE	May 10, 2025	
REVISION	A2	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	MHz SMD Crystal Seam Seal, 5032 Type XD series, 4 pads Dimension L5.0*W3.2*H1.0mm 12.000MHz, Tolerance ± 20 ppm, Load Capacitor 20pF Frequency stability ± 30 ppm; Operating Temp. Range -40°C ~+85°C ESR 60ohm Max, Reflow Profile Condition 260 °C Max. Package in Tape/Reel, 1000pcs/Reel RoHS/RoHS III Compliant	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE			
Issued/Checked/Approved			
			
Effective Date: May 10, 2025			

CUSTOMER APPROVE	
Date:	

MAIN FEATURE

- MHz SMD Crystal L5.0*W3.2*H1.0mm 4 Pads
- Low Cost,
- High Precision
- High Frequency Stability
- Short Lead time
- Reflow Profile Condition 260 ° C Max.
- Cross More Competitors Part
- REACH/RoHS/RoHS III Compliant



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

APPLICATION

- Bluetooth, Wireless Communication Set
- Communication Electronics



ELECTRICAL CHARACTERISTICS

- See Page 5~6 For Different Part Code.
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code XD12M00000S420 For RFQ and Order.

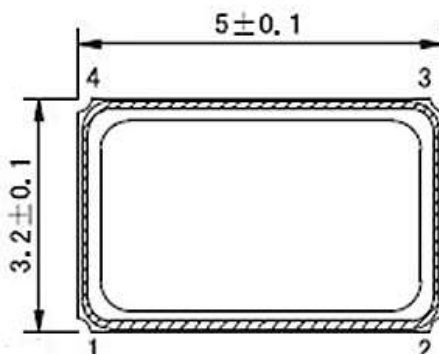
PART CODE GUIDE

RFQ
[Request For Quotation](#)

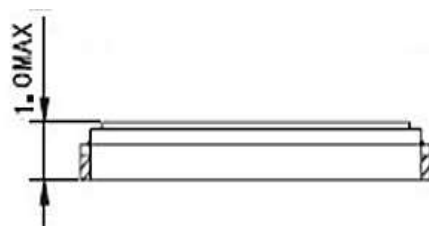
CODE	NAME	KEY SPECIFICATION OPTION
XD	Product Series Code	MHz SMD Crystal, Seam Seal, 4 Pads Case Dimension L5.0*W3.2*H1.0mm
12M0	Frequency Range Code	12M0: 12.0MHz or Specify Frequency Range
0000S	Internal Control Code	Letter or Digits (A~Z, a~z or 0~9)
420	Parameters Code	Letter or Digits (A~Z, a~z or 0~9)
XX	Special/Custom Parameters Code	Letter or Digits (A~Z, a~z or 0~9) for Special Parametric; Blank: N/A

DIMENSION - Unit: mm

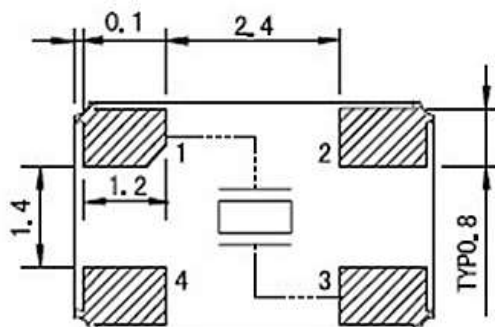
Top View



Side View

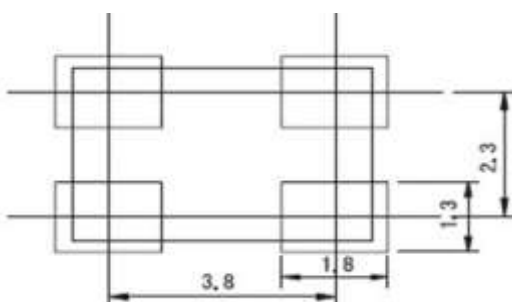


Bottom View



#1 Crystal #2 Ground #3 Crystal #4 Ground

Recommend Pad Layout



GENERAL SPECIFICATION –Ta = 25°C

PARAMETER	SYMBOL	VALUE			UNIT	CONDITION
		MIN.	TYPE	MAX.		
Mode of Vibration Code		Fundamental				
Frequency Tolerance	△F/F0	±10	-	±50	ppm	
Load Capacitance	CL	8	-	30	pF	
Frequency Stability	Tc	±10	±30	±100	ppm	
Operating Temp. Range	TOPR	-40	-	+85	°C	
Storage Temp. Range	TSTG	-50	-	+105	°C	
Drive Level	DL	-	-	300	μW	
Insulation Resistance	IR	500	-		mΩ	@100V ± 15VDC
Shunt Capacitance	C0	-	-	3.0	pF	
Aging per year	Fa	-3	-	+3	ppm	1st Year

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

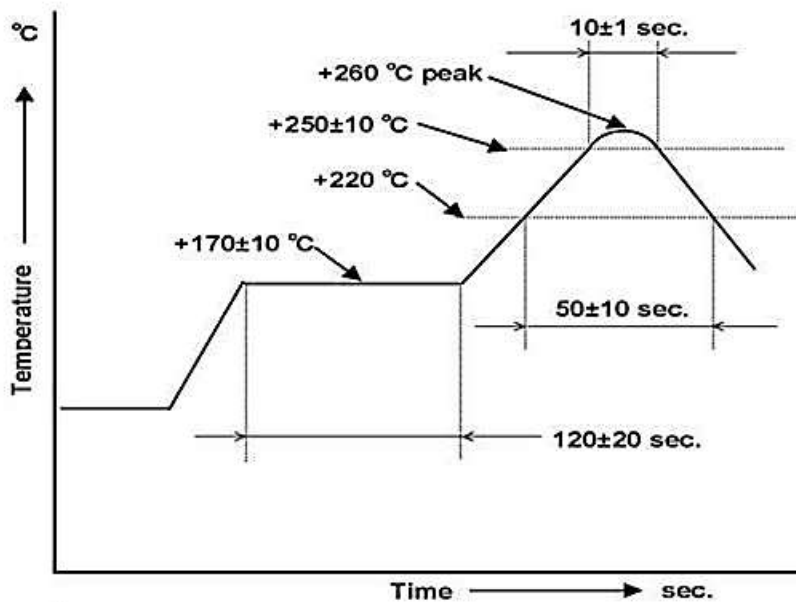
PART CODE	FREQUENCY RANGE	FREQUENCY TOLERANCE	LOAD CAPACITANCE	FREQUENCY STABILITY	OPERATING TEMPE. RANGE	EQUIVALENT SERIES RESISTANCE
	MHz	ppm	pF	ppm	°C	Ω Max.
XD8M000000S416	8.0000	±10	16	±30	-40 ~ +85	80
XD8M000000S418	8.0000	±20	18	±30	-40 ~ +85	60
XD8M000000S420	8.0000	±10	20	±30	-40 ~ +85	60
XD8M192000S420	8.1920	±10	20	±30	-40 ~ +85	80
XD9M216000S420	9.2160	±10	20	±30	-40 ~ +85	80
XD12M00000S420	12.000	±20	20	±30	-40 ~ +85	60
XD18M43200S430	18.432	±10	30	±30	-40 ~ +85	50
XD19M95200S420	19.952	±30	20	±30	-40 ~ +85	45
XD24M00000S412	24.000	±30	12	±30	-40 ~ +85	45
XD24M00000S420	24.000	±10	20	±30	-40 ~ +85	60
XD24M57600S001	24.576	±50	20	±100	0 ~ +70	50
XD25M00000S412	25.000	±10	12	±30	-40 ~ +85	50
XD25M00000S416	25.000	±10	16	±30	-40 ~ +85	60
XD25M00000S420	25.000	±10	20	±30	-40 ~ +85	50
XD50M00000S418	50.000	±30	18	±30	-40 ~ +85	120

RELIABILITY - MECHANICAL AND ENVIRONMENTAL ENDURANCE

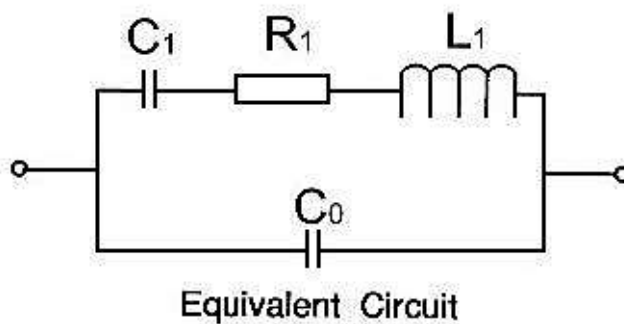
TEST ITEMS	TEST METHOD AND CONDITIONS	REQUIREMENTS
Drop	Free drop from 75cm height on a hard wooden board for 3 times. (Board is thickness more than 30mm.)	Frequency change: ≤5ppm Rr as specification
Shake	Shake frequency 10~55Hz, cyc1~2 minutes, swing 1.5mm, direction x/y/z, all 30 minutes, test after 1 hours.	Frequency change: ≤5ppm Rr as specification
Airproof	Put crystal into the pressure cabin with alcohol, keep pressure 0.4~0.5mpa 10 minutes, then take out and blow for 5 minutes	IR≥500MΩ
Weld	Temperature: 260±5°C Time: 3 seconds	90% exhibit tin ok
Humidity	Temperature: +40±2°C Humidity: 90%~95% R.H. Time: 250 hours	Frequency change: ≤5ppm Rr as specification
Low temperature	Temperature: -30±2°C Time: 250 hours put in room temperature, test after 1 hours.	Frequency change: ≤5ppm Rr as specification
High Temperature	Temperature: +85±2°C Time: 250 hours put in room temperature, test after 1 hours.	Frequency change: ≤5ppm Rr as specification
Temperature cycling	-30±3°C/30±3 min~+85±2°C/30±3min, 5 cycles	Frequency change: ≤5ppm Rr as specification

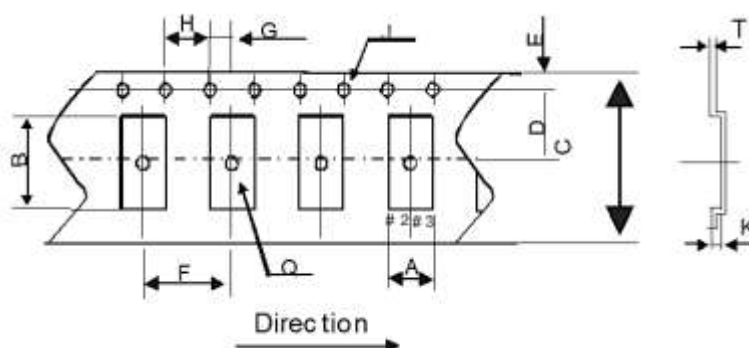
SUGGESTED REFLOW PROFILE - FOR REFERENCE ONLY

Condition:

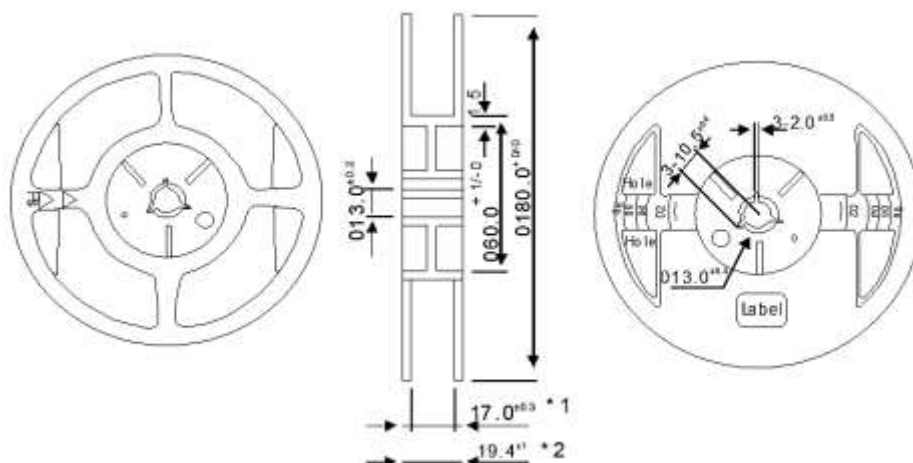


EQUIVALENT CIRCUIT



TAPE AND REEL - Unit: mm, 1000pcs/Reel


SYMBOL	TOLERANCE	DIMENSION (MM)
A	±0.1	3.5
B	±0.1	5.4
C	±0.2	12
D	±0.1	5.5
E	±0.1	1.75
F	±0.1	8.0
G	±0.1	2.0
H	±0.1	4.0
J	+0.1/0	1.5
K	±0.1	1.0
Q	0.1	1.6
T	±0.05	0.25



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 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 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.
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