

SPECIFICATION SHEET NO.	S0515 - XI12M28800S101	
ORIGINAL MFG/PART NO.	TGS Crystals/CM22 12M288A20-8-20-20-150 TLF	
NEXTGEN PART CODE	XI12M28800S101	Indicate This Code For RFQ /Order
DATE	May 15, 2025	
REVISION	A2	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	MHz SMD Crystal Seam Seal, Case 2520 XI series, 4 pads Dimension L2.50*W2.00*H0.55mm 12.288MHz, Tolerance ± 20 ppm, Load Capacitor 8pF Frequency stability ± 20 ppm; ESR 150ohm Max. Operating Temp. Range -20°C ~+70°C Reflow Profile Condition 260 °C 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		
Effective Date: May 15, 2025		

CUSTOMER APPROVE
Date:

MAIN FEATURE

- MHz SMD Crystal L2.50*W2.00*H0.55mm 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 6~7 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 XI12M28800S101 For RFQ and Order.

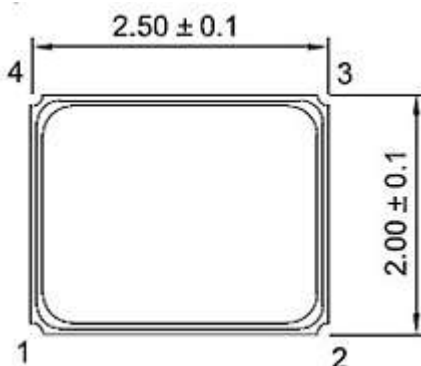
PART CODE GUIDE

RFQ
[Request For Quotation](#)

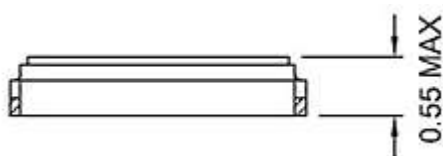
CODE	NAME	KEY SPECIFICATION OPTION
XI	Product Series Code	MHz SMD Crystal, Seam Seal, 4 Pads Case Dimension L2.50*W2.00*H0.55mm
12M288	Frequency Range Code	12M288: 12.288MHz or Specify Frequency Range
00S	Internal Control Code	Letter or Digits (A~Z, a~z or 0~9)
101	Parameters Code	Letter or Digits (A~Z, 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, Case 2520

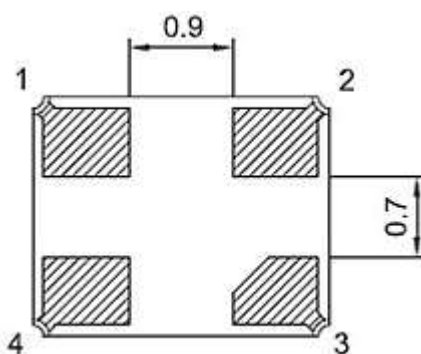
Top View



Side View

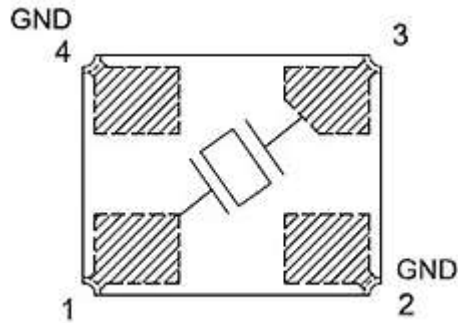


Bottom View

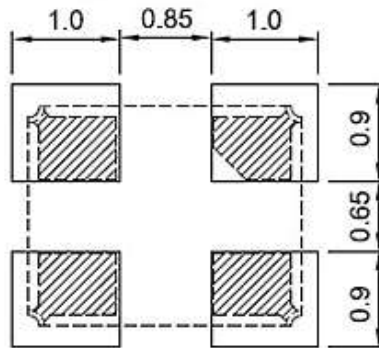


#1 Crystal #2 Ground #3 Crystal #4 Ground

Connection



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	@ 25°C
Load Capacitance	CL	8	-	30	pF	
Frequency Stability	Tc	± 10	-	± 50	ppm	
Operating Temp. Range	TOPR	-40	-	+85	°C	
Storage Temp. Range	TSTG	-55	-	+125	°C	
Drive Level	DL	-	-	300	μW	
Insulation Resistance	IR	500	-		mΩ	@100V ± 15VDC
Shunt Capacitance	C0	-	-	2.0	pF	
Aging per year	Fa	-3	-	+3	ppm	1st Year

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

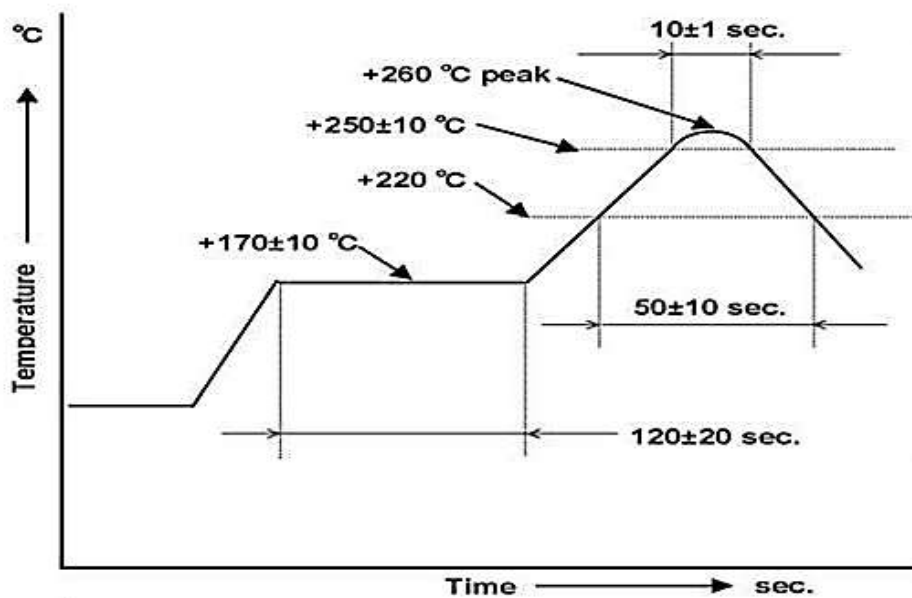
PART CODE	FREQUENCY RANGE	FREQUENCY TOLERANCE	LOAD CAPACITANCE	FREQUENCY STABILITY	OPERATING TEMPE. RANGE	EQUIVALENT SERIES RESISTANCE
	MHz	ppm	pF	ppm	°C	Ω Max.
XI12M00000S408	12.000	±10	8	±30	-40 ~ +85	80
XI12M00000S420	12.000	±10	20	±30	-40 ~ +85	150
XI12M28800S101	12.288	±20	8	±20	-20 ~ +70	150
XI16M00000S409	16.000	±10	9	±30	-40 ~ +85	150
XI22M11840S410	22.118	±25	10	±30	-40 ~ +85	80
XI24M00000S408	24.000	±10	8	±30	-40 ~ +85	80
XI24M00000S412	24.000	±10	12	±30	-40 ~ +85	60
XI25M00000S408	25.000	±10	8	±30	-40 ~ +85	60
XI25M00000S418	25.000	±10	18	±30	-40 ~ +85	60
XI26M00000S409	26.000	±10	9	±30	-40 ~ +85	60
XI26M00000S412	26.000	±10	12	±30	-40 ~ +85	60
XI27M12000S412	27.120	±10	12	±30	-40 ~ +85	60
XI32M00000S408	32.000	±10	8	±30	-40 ~ +85	60
XI38M40000S408	38.400	±10	8	±30	-40 ~ +85	40
XI40M00000S408	40.000	±10	8	±30	-40 ~ +85	40
XI40M00000S412	40.000	±10	12	±30	-40 ~ +85	40

RELIABILITY - MECHANICAL AND ENVIRONMENTAL ENDURANCE

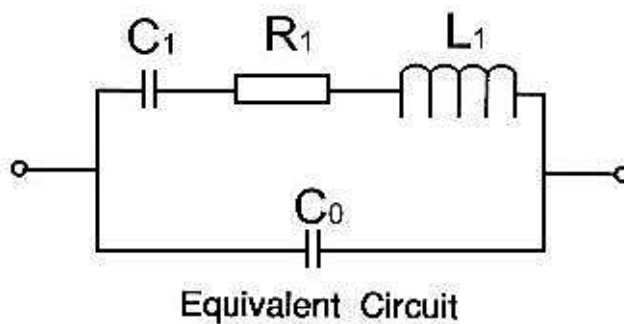
TEST ITEMS	TEST METHOD AND CONDITIONS	REQUIREMENTS
Drop	Free drop from 75cm height on a hard wooden board for 3 times. (Board is thickness more than 30mm.)	Frequency change: ≤5ppm Rr as specification
Shake	Shake frequency 10~55Hz, cyc1~2 minutes, swing 1.5mm, direction x/y/z, all 30 minutes, test after 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

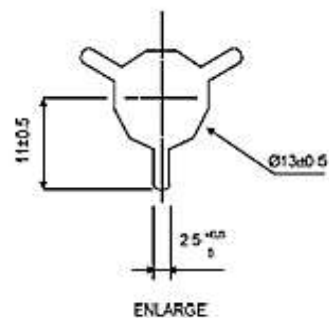
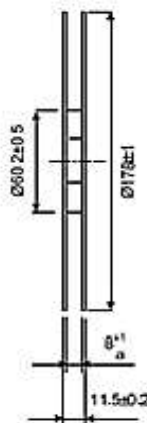
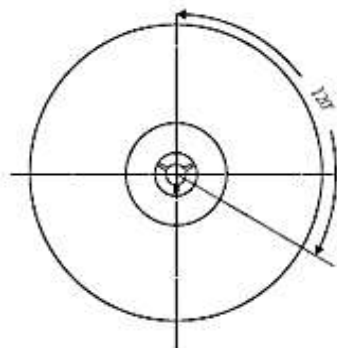
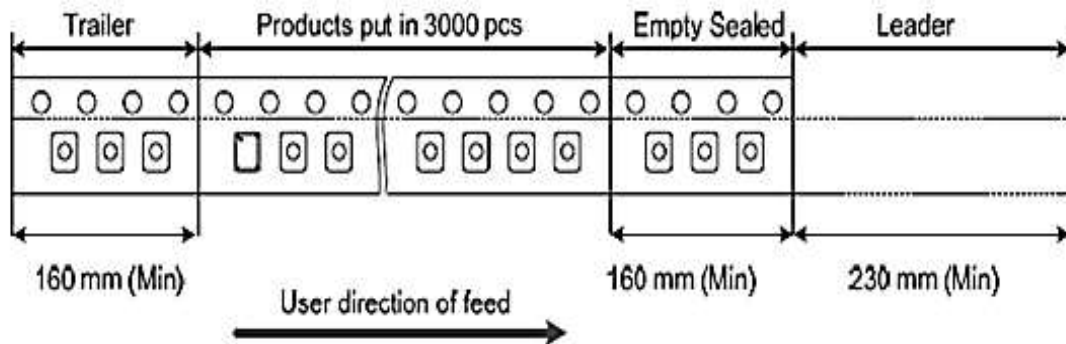
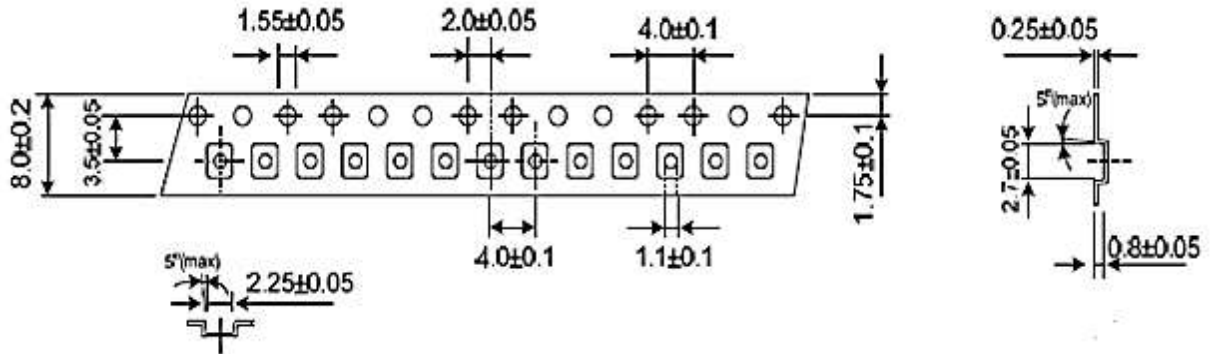
Condition:



EQUIVALENT CIRCUIT



TAPE AND REEL - Unit: mm, 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 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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