




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	Q1109- XS3M276800L212	
DATE	Nov. 09, 2023	
REVISION	A0	Updated With Most Recent Data - Official First Release
DESCRIPTION AND MAIN PARAMETRICS	DIP Quartz Crystal, 49S Type, L11.5*W4.65*H3.5mm, 2 pins, 3.2768MHz, Tolerance: +/-30ppm, CL 12pF, Stability +/-50ppm @Operating Temp. Range -20°C ~+70°C, ESR 200 ohm Max, Package in Bulk RoHS/RoHS III compliant	
CUSTOMER		
CUSTOMER PART NO.		
CROSS REF. PART NO.		
ORIGINAL MFG/PART NO.	TGS CS 3M2768A30-12-50-20-200 BLF	
PART CODE	XS3M276800L212	

VENDOR APPROVE			
Issued/Checked/Approved			
DATE: Nov. 09, 2023			

CUSTOMER APPROVE	
DATE:	

11/9/2023

DIP QUARTZ CRYSTAL 49S TYPE 2 PINS

MAIN FEATURE

- DIP Crystal, 49S Type, L11.5*W4.65*H3.5mm, 2 Pins
- Low Cost, High Precision
- High Frequency Stability
- Wide Frequency Range
- Cross More Competitors Part
- RoHS/RoHS III Compliant



APPLICATION

- Bluetooth, wireless communication set
- Communication Electronics

PART CODE GUIDE

RFQ
[Request For Quotation](#)

XS	3M276800	L	212
1	2	3	4

1. XS: Part family Code for DIP Crystal, 49S Type, L11.5*W4.65*H3.5mm, 2 pins
2. 3M276800: Frequency range code for 3.2768MHz
3. L: DIP type, Package in Bulk
4. 212: Internal Control Code or special Parameters code letter A~Z or digits (1-9)

DIP QUARTZ CRYSTAL 49S TYPE 2 PINS

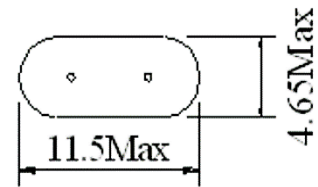
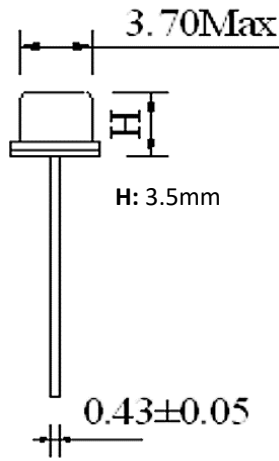
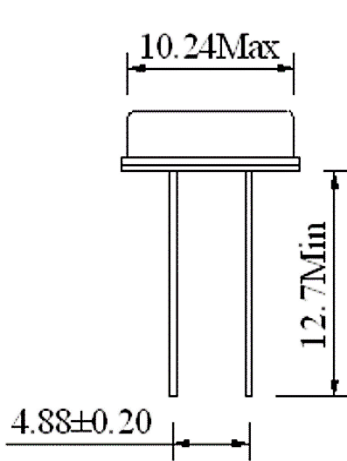
DIMENSION (Unit: mm)

Image for reference

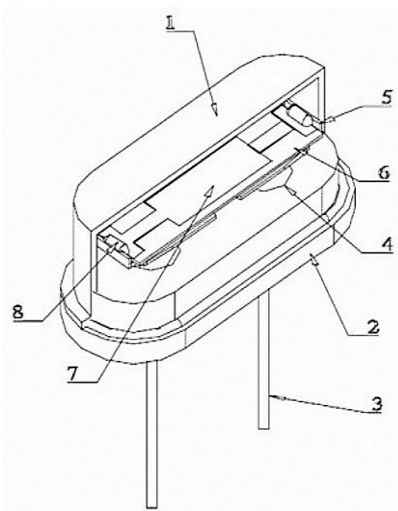


Marking

Frequency Range + QC Code



INSIDE STRUCTURE



No	Part Name
1	Cover
2	Base
3	Pin
4	Glass Insulator
5	Clip
6	Quartz Blank
7	Electrode
8	Conductive Adhesive

DIP QUARTZ CRYSTAL 49S TYPE 2 PINS
ELECTRICAL PARAMETERS

Parameter	Part No. Symbol	Units	Value			Condition
			Min.	Typical	Max.	
MFG Code	TGS	TGS Crystals				
Holder Type	CS	DIP Crystal, 49S Type, L11.5*W4.65*H3.5mm, 2 pins				
Frequency Range	3M2768	MHz	3.2768			
Mode of Oscillation	A	AT Fundamental				
Frequency Tolerance	30	ppm	-30		+30	@25°C
Load Capacitance	-12	pF	12			
Stability over Operation Temperature	-50	ppm	-50		+50	
Operation Temperature	-20	°C	-20		+70	
Storage Temperature		°C	-40		+85	
Equivalent Series Resistance (ESR)	-200	Ω			200	
Drive Level		μW			100	
Shunt Capacitance (C0)		pF	0		7.0	
Motional Capacitance (C1)		fF	N/A			
DLD2		Ω	N/A			
FLD2		ppm	N/A			
RDL2		Ω	N/A			
SPDB		dB	N/A			
Aging		ppm/year			±5	@1 st year
Insulation Resistance		MΩ	500			@100VDC ± 15VDC
Others	Package	B	Bulk			
	RoHS Status	LF	RoHS III compliant			
	Add Value		N/A			
	Internal Control Code *		N/A			

Note: 1) Original Part Number: TGS CS 3M2768A30-12-50-20-200 BLF 2) * Internal Control Code- 2 letter or digits; Blank: N/A

11/9/2023

DIP QUARTZ CRYSTAL 49S TYPE 2 PINS

CHARACTERISTICS

Units and values indicated with { } in this specification are the former units and the specified values.

Standard atmospheric conditions:

Unless otherwise specified the standard range of atmospheric conditions for making measurements and tests is as follows:

1. Ambient temperature: 15°C to 35°C
2. Relative humidity : 25% to 85%
3. Air pressure : 86 to 106 k Pa

If there is any doubt about the results measurements shall be made within the following limits:

1. Ambient temperature : 25 ± 1°C
2. Relative humidity : 63% to 67%
3. Air pressure : 86 to 106 k Pa

Operating temperature range:

The operating temperature range is the range of ambient temperatures at which the quartz crystal oscillator can be stored without damage. Conditions are as specified elsewhere on these specifications.

Operating temperature range: -20°C to +70°C

Storage temperature range:

The storage temperature range is the range of ambient temperatures at which the quartz crystal oscillator can be stored without damage. Conditions are as specified elsewhere on these specifications.

Storage temperature range: -40°C to +85°C

DIP QUARTZ CRYSTAL 49S TYPE 2 PINS

MECHANICAL CHARACTERISTICS

Provided that measurement shall be carried out after letting it alone in the room temperature for 1h

ITEM	SPECIFICATIONS
Shock	Dropping three times from the height of 50cm onto hard wooden board of thickness more than 30mm.
Vibration	a) Vibration Frequency: 10~55HZ b) Cycle: 1 to 2 Min c) Amplitude :0.8mm d) Direction: X.Y.Z. e) Time: 2hr for each direction
Terminal Strength	<p>Pulling:</p> <p>a) Body of specimen shall be fixed and 8.82N of tension weight shall be supplied gradually to axial direction of terminals/lead-wires for 30s</p> <p>b) After above test a)there is no observation of any visual damages on the specimen</p> <p>Bending:</p> <p>a) Body of specimen shall be fixed and 90 degree bending shall be given being supplied 225g tension weight, Afterthatterminalslead-wires shall be straightened the same bending and straightening shall be supplied to the opposite direction in the same axial</p> <p>b) After above tesla)there is no observation of any visual damages on the specimen</p>
Sealing Tightness	There is no observation of gas bubble after specimen put into alcohol below1atm for 3 min.
Solder ability	Terminals/lead-wires of specimen shall be dipped into solder melted tank at350± 10°C/C for 3-4sec. or 250± 5°C for 5± 1sec*'Frequency variation shall be within ± 5ppm and equivalent resistance less than ± 15% max after the test Note: Measuring the frequency should be done after keeping test samples at room temperature for 24 hours
Resistance to Soldering Heat	Terminals/lead-wires of specimen shall be dipped into solder melted tank at350± 10°C/C for 3-4sec. or 250± 5°C for 5± 1sec*'Frequency variation shall be within ± 5ppm and equivalent resistance less than ± 15% max after the test Note: Measuring the frequency should be done after keeping test samples at room temperature for 24 hours

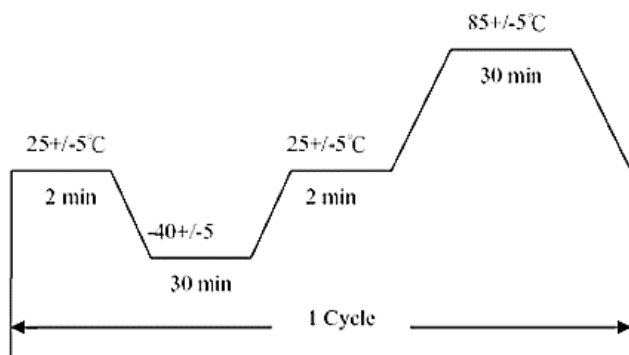
Note: *Frequency variation shall be within ± 5ppm and equivalent resistance less than ± 15% max after the test

Note: Measuring the frequency should be done after keeping test samples at room temperature for 24 hours

DIP QUARTZ CRYSTAL 49S TYPE 2 PINS

MECHANICAL CHARACTERISTICS

Provided that measurement shall be carried out after letting it alone in the room temperature for 1h

ITEM	SPECIFICATIONS
Humidity	It alone at 40°C±2°C in humidity of 90~95% for 48h
Storage in Low Temperature	It alone at -40°C±2°C for 240h
Storage in High Temperature	It alone at 85°C±2°C for 240h
Temperature Cycle	<p>The following temperature cycle (10 cycles) Refer to below Fig. Temperature shift from low to high, high to low shall be done in 1°C/C /min</p> 

Note: *Frequency variation shall be within ± 5ppm and equivalent resistance less than ± 15% max after the test
 Note: Measuring the frequency should be done after keeping test samples at room temperature for 24 hours

PACKAGE

Package is made of corrugated paper with thickness of 0.8cm. Package has 10 inner boxes, each box has 10 bag

- Quantity of package: Each bag 200 pieces of Crystal Resonators
- Per inner box 10 bag (0.2k/bag)
- Per package 10 inner boxes & 10 inner boxes 20000 pieces of Crystal Resonators)

DIP QUARTZ CRYSTAL 49S TYPE 2 PINS

NOTES AND DISCLAIMER

1. Only the lead should be heated when soldering In case that the package temperature is exceeding 150°C It may impair the crystal or may cause the crystal quartz to destroy.
2. Pulling the lead strongly may cause cracking of the hermetic glass seal bending the lead closely from the case may also cause same problem so when the lead needs to be bent please leave more than 05.mm of lead from the case.
3. Too much shock or vibration is not allowed. According to conditions such as machine shock during the assembly the internal quartz crystal might be damaged. Please check your conditions carefully when using it in advance
4. Don't storage or use in the environment that temperature may change rapidly to avoid the condensation. And also we recommend to storage the products in the normal environment (Temperature humidity)
5. This product can be subjected to ultrasonic cleaning. However since the oscillator may be affected depending on the condition be sure to check it.
6. Applying excessive drive level to the quartz crystal may cause deterioration for characteristics or damage Circuit design must be such as to maintain a proper drive level.
7. Unless adequate negative resistance is allocated in the oscillation circuit startup time of oscillation may be increased or no oscillation may occur In order to avoid this provide enough negative resistance in the circuitry design.
8. 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.
9. *NextGen* reserves the right to make changes to the product(s) and or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information
10. *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.