

**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	Q0113- RA24M00000L513
<b>DATE</b>	Jan. 13, 2023
<b>REVISION</b>	A0
<b>DESCRIPTION</b>	<p>MHz Thru-Hole Crystal Oscillator, L20.8*W13.2*H5.08mm</p> <p>Full- Size/14 pin, CO14 series</p> <p>24.0000MHz, 5.0V, +/-50ppm, Symmetry 45/55,</p> <p>Operating Temp. Range -40°C ~+85°C,</p> <p>HCMOS//30pF, Supply Current 20mA Max, Tristate function - Enable</p> <p>Thru-Hole type, Packed in Tube, 25pcs/Tube</p> <p>RoHS/RoHS III compliant</p>
<b>CUSTOMER</b>	
<b>CUSTOMER PART NUMBER</b>	
<b>CROSS REF. PART NUMBER</b>	
<b>ORIGINAL PART NUMBER</b>	TGS CO1451BGI03 BLF-24M000
<b>PART CODE</b>	RA24M00000L513

**VENDOR APPROVE**

Issued/Checked/Approved



DATE: Jan. 13, 2023

**CUSTOMER APPROVE**

DATE:

1/13/2023

**MHZ THRU-HOLE CRYSTAL OSCILLATOR CO14 SERIES**

**MAIN FEATURE**

- MHz Thru-Hole Crystal Oscillator L20.8\*W13.2\*H5.08mm
- Industry-standard
- Hermetically sealed package for reliability
- Tristate function -Enable
- Cross more competitors part
- RoHS/RoHS III compliant



**APPLICATION**

- Communication Electronics

**PART CODE GUIDE**

**RFQ**

[Request For Quotation](#)

RA	24M00000	L	513
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- 1) RA: Part family Code for MHz Thru-Hole Crystal Oscillator, L20.8\*W13.2\*H5.08mm, Full-Size/14 pin, CO14 series
- 2) 24M00000 Frequency range code for 24.00000MHz
- 3) L: Thru Hole type, Packed in Tube, 25pcs/Tube
- 4) 513: Specification code for original part No.: **TGS CO1451BGI03 BLF-24M000**

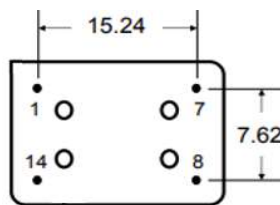
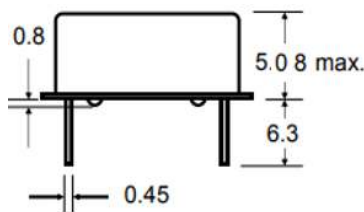
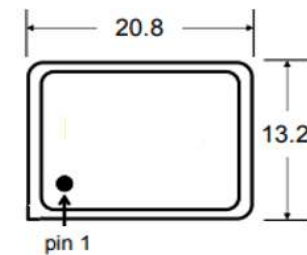
**MHZ THRU-HOLE CRYSTAL OSCILLATOR CO14 SERIES**

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

Image for reference



CO14



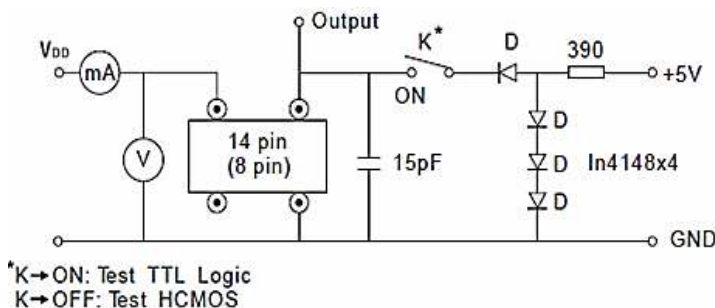
**Marking**

Line 1: 24.0000  
Line 2: Special Code

**Pin Function**

- #1 Tristate Enable Via #1
- #4 Ground
- #5 Output
- #8 VDD

**Circuit Principle**



**MHZ THRU-HOLE CRYSTAL OSCILLATOR CO14 SERIES**
**ELECTRICAL PARAMETERS**

Parameter		Part No. Symbol	Units	Value			Condition
				Min.	Typical	Max.	
<b>Original Manufacturer</b>		TGS	TGS Crystals				
<b>Holder Type</b>		CO14	MHz Thru-Hole Crystal Oscillator, CO14 Series, L20.8*W13.2*H5.08mm, Full-Size/14 pin				
<b>Supply Voltage</b>		5	V	5.0		+/-10%	
<b>Enable/Disable -Tristate Function</b>		1		Tristate function - Enable		@ Control via pin 1	
<b>Overall Freq. Tolerance</b>		B	ppm	-50		+50	@25°C
<b>Operating Temp. Range</b>		G	°C	-40		+85	
<b>Storage Temp. Range</b>			°C	-55		+125	
<b>Symmetry</b>		I	%	45		55	
<b>Output</b>	<b>V OH</b>		V	90%			High (Logic "1")
	<b>V OL</b>		V			10%	Low (Logic "0")
	<b>Load</b>		pF	30			
<b>Output Waveform</b>		03		HCMOS			@OutputLoad 30pF
<b>Startup Time</b>			ms			10	
<b>Supply Current</b>			mA			20	
<b>Rise/ Fall time</b>			ns			10	
<b>Phase Jitter</b>			ps		N/A		
<b>Aging</b>			ppm/year			±3	@1 <sup>st</sup> year
<b>Others</b>	<b>Package</b>	B	Thru - Hole type, Packed in Tube, 25pcs/Tube				
	<b>RoHS Status</b>	LF-	RoHS III compliant				
	<b>Add Value</b>		N/A				
	<b>Internal Control Code *</b>		N/A				
<b>Frequency Range</b>		24M000	24.0000MHz				

Note: 1) Original Part Number: TGS CO1451BGI03 BLF-24M000

2) \* Internal Control Code- 2 letter or digits; Blank: N/A

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**MHZ THRU-HOLE CRYSTAL OSCILLATOR CO14 SERIES**

**ENVIRONMENTAL AND TECHNICAL CONDITIONS**

Test Items	Test Method And Conditions
Temperature Cycle	Mil-std 883, Method 1010, 10 Cycles -20° C To 85° C
Shock	Mil-std-202, Method 213, Test Condition C
Vibration	Mil-std-202, Method 204, Test Condition A
Resistance To Soldering Heat	Mil-std-202, Method 210, Test Condition B
Humidity	85% Relative Humidity At 85° C 250 Hours
Gross Leak Test	Mil-std-883, Method 1014, Test Condition C
Fine Leak Test	Mil-std-883, Method 1014, Test Condition A
Terminal Strength	Mil-std-202, Method 211, Test Condition A And C
Moisture Resistance	Moisture Resistance Mil-std 202, Method 106, Omit Step 7b
Solderability	Mil-std-202, Method 208, 95% Coverage
Solvent Resistance	Mil-std-202, Method 2002, Method 215

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