

**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	Q0120- RK32K76800S300
<b>DATE</b>	Jan.20, 2023
<b>REVISION</b>	A1
<b>DESCRIPTION</b>	<p>KHz SMD Oscillator, 2520 Type, L2.5*W2.0*H1.0mm, 4 Pads, COK22 series            32.76800KHz, 3.3V, +/-50ppm, Symmetry 45/55,            Operating Temp. Range -40°C ~+85°C, Reflow Profile Condition 260 °C Max.            HCMOS//15pF, Supply Current 200µA Max,            Tristate function - Enable via Pad 1,            Packed in Tape/Reel, 3000pcs/Reel            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 COK2231BGI01 TLF-32K768
<b>PART CODE</b>	RK32K76800S300

**VENDOR APPROVE**

Issued/Checked/Approved



DATE: Jan.20, 2023

**CUSTOMER APPROVE**

DATE:

1/20/2023

**KHZ SMD OSCILLATOR 2520 TYPE 4 PADS**

**MAIN FEATURE**

- SMD Package, Seam Sealed, 2520 Type, L2.5\*W2.0\*H1.0mm, 4 Pads
- Low noise and Low current
- Industry standard
- Reflow Profile Condition 260 °C Max.
- Cross more competitors part
- RoHS/RoHS III compliant



**APPLICATION**

- PDA, PND, DSC, Smart phone, WiLAN, Bluetooth and more
- Communication Electronics

**PART CODE GUIDE**

**RFQ**  
Request For Quotation

<b>RK</b>	<b>32K76800</b>	<b>S</b>	<b>300</b>
1	2	3	4

- 1) RK: Part family Code for KHz SMD Oscillator, 2520 Type, L2.5\*W2.0\*H1.0mm, 4 Pads, COK22 series
- 2) 32K76800: Frequency range code for 32.768000KHz
- 3) S: SMD type, Package Tape/Reel, 3000pcs/Reel
- 4) 300: Specification code for original part No.: **TGS COK2231BGI01 TLF – 32K768**

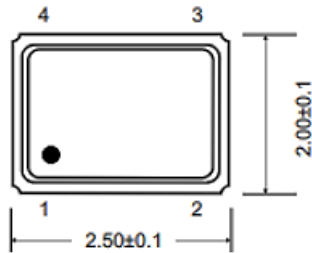
**KHZ SMD OSCILLATOR 2520 TYPE 4 PADS**

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

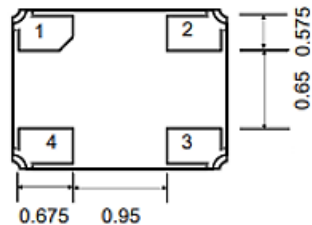
Image for reference



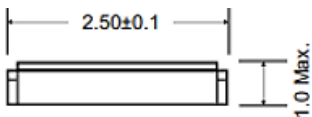
COK22



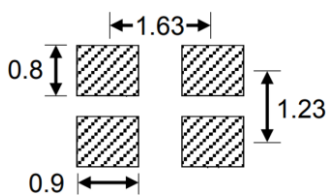
**Marking**  
Frequency Range



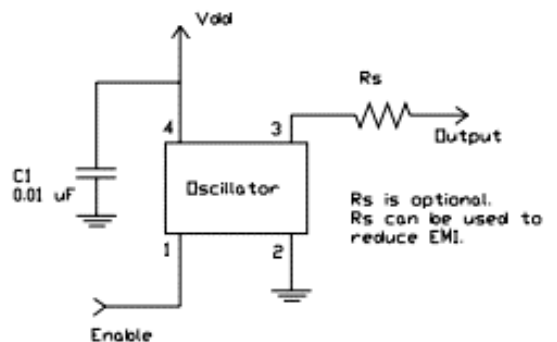
**Pin Function**  
#1 Enable (Tri-State)  
#2 Ground  
#3 Output  
#4 VDD



**Recommend Pad Layout**



**Circuit Principle**



**KHZ SMD OSCILLATOR 2520 TYPE 4 PADS**
**ELECTRICAL PARAMETERS**

Parameter	Part No. Symbol	Units	Value			Condition
			Min.	Typical	Max.	
Original Manufacturer	TGS	TGS Crystals				
Holder Type	COK22	KH SMD Oscillator 2520 Type, , L2.5*W2.0*H1.0mm, 4 Pads				
Supply Voltage	3	V	3.3		+/-10%	
Enable/Disable Function	1		Tristate function - Enable		@ Control via pin 1	
Overall Freq. Tolerance	B	ppm	-50		+50	@25°C
Operating Temp. Range	G	°C	-40		+85	
Storage Temp. Range		°C	-55		+125	
Symmetry	I	%	45		55	
Output	V OH	V	90%			High (Logic "1")
	V OL	V			10%	Low (Logic "0")
	Load	pF	15			
Output Waveform	01		HCMOS		@OutputLoad 15pF	
Startup Time		ms			10	
Supply Current		µA			200	
Rise/ Fall time		ns			10	
Aging		ppm/year			±3	@1 <sup>st</sup> year
Others	Package	T	Tape/Reel			
	RoHS Status	LF	RoHS III compliant			
	Add Value		N/A			
	Internal Control Code *		N/A			
Frequency Range	- 32K768		32.7680KHz			

Note: 1) Original Part Number: **TGS COK2231BGI01 TLF – 32K768**

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

**KHZ SMD OSCILLATOR 2520 TYPE 4 PADS**
**RELIABILITY**

Test Items	Test Method And Conditions	Reference Documents
High Temperature High Humidity Storage	Temperature: 85°C±3°C Relative Humidity:85%RH Time: 96 Hours	JIS C5023
High Temperature Storage	Temperature: 125°C±3°C Time: 96 Hours.	MIL-STD-883E Method 1005.8
Low Temperature Storage	Temperature: -40°C±3°C Time: 96 Hours.	MIL-STD-883E Method 1013
Thermal Shock	Temperature 1: -55°C±5°C Temperature 2: 85°C±5 °C Temperature change between T1 and T2 5 min 10cycles maintain T1 and T2 for 30 minutes each cycle	MIL-STD-202F Method 107 Condition A
Resistance to Solder Heat	Solder Temperature: 260°C±5°C Time: 10±1 Seconds	MIL-STD-202F Method 210E
Solderability	The solder pot temperature is 245±5°C , dwell time 5±0.5sec	J-STD-002B
Drop Test	3 Times Free Fall from 50cm height table to 3cm thickness hard wood board	J-STD-002B
Mechanical Shock	Half sine wave,1000 G 3 Times for all 3 directions(X,Y Z)	MIL STD 202F Method 213B
Vibration	Frequency Range: 10Hz ~ 55Hz Amplitude: 0.75mm 2 Hours in each direction, total 6 Hours	MIL-STD-883E Method 2007.3
Leakage Test	Take measurements with a helium Leakage detector Leakage Rate≤1×10 <sup>-3</sup> Pa cm <sup>3</sup> /s	MIL-STD-883E

**KHZ SMD OSCILLATOR 2520 TYPE 4 PADS**
**SUGGESTED REFLOW PROFILE (For Reference Only)**

Total time: 200 Sec. Max. Solder melting point: 220°C

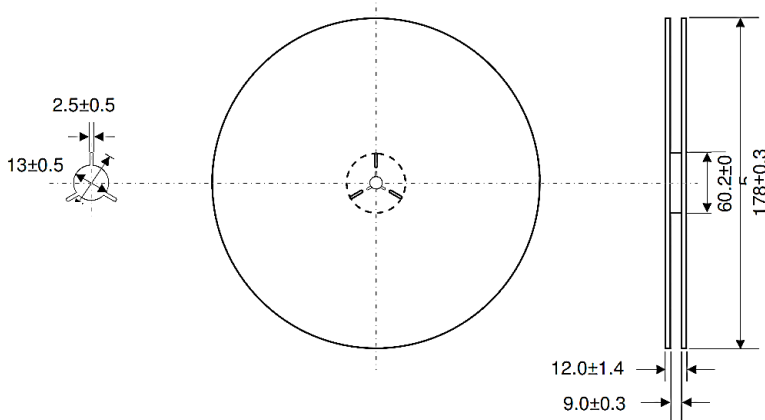
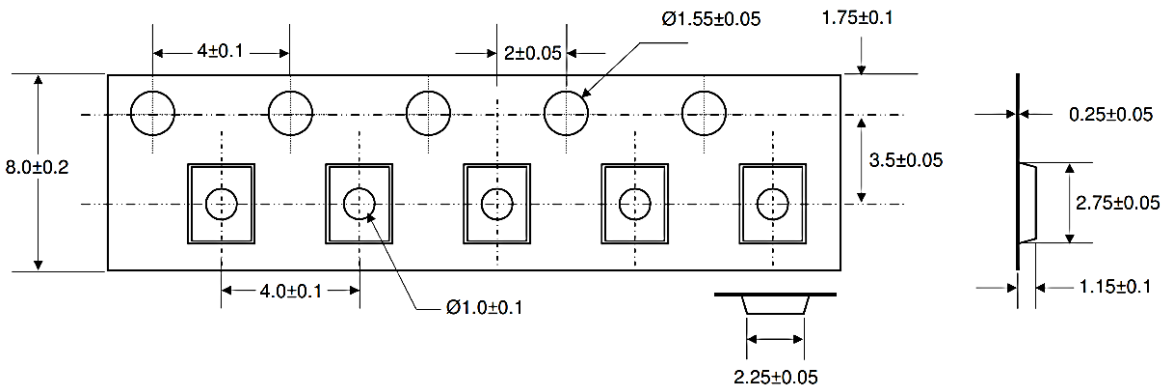


<b>Profile Feature</b>		Pb-Free Assembly
<b>Average Ramp-up Rate (Ts Max to Tp)</b>		3°C/second Max
<b>Preheat</b>	<b>Temperature Min (Ts Min.)</b>	125°C
	<b>Temperature Max (Ts Max.)</b>	200°C
	<b>Time (ts Min. to ts Max.)</b>	60 ~ 180 seconds
<b>Time maintained above</b>	<b>Temperature (Tl)</b>	217°C
	<b>Time (tl)</b>	60 ~ 150 seconds
<b>Peak/Classification Temperature (Tp)</b>		260 °C
<b>Time within 5°C of actual Peak Temperature (tp)</b>		20 ~ 40 seconds
<b>Ramp-down rate</b>		6 °C /Second Max.
<b>Time 25 °C to Peak Temperature</b>		8 minutes Max.
<b>Suggest reflow times</b>		3 Times Max.

**KHZ SMD OSCILLATOR 2520 TYPE 4 PADS**

**TAPE/REEL (Unit: mm)**

All Devices are packed in accordance with EIA standard RS-481-2 and specifications, 3000pcs/Reel



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1/20/2023