

SPECIFICATION SHEET

| | |
|--------------------------------|---|
| SPECIFICATION SHEET NO. | Q0120- RL32K76800S300 |
| DATE | Jan.20, 2023 |
| REVISION | A1 |
| DESCRIPTION | <p>KHz SMD Oscillator, 3225 Type, L3.2*W2.5*H1.0mm, 4 Pads, COK32 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> |
| CUSTOMER | |
| CUSTOMER PART NUMBER | |
| CROSS REF. PART NUMBER | |
| ORIGINAL PART NUMBER | TGS COK3231BGI01 TLF-32K768 |
| PART CODE | RL32K76800S300 |

VENDOR APPROVE

Issued/Checked/Approved



DATE: Jan.20, 2023

CUSTOMER APPROVE

DATE:

1/20/2023

KHZ SMD OSCILLATOR 3225 TYPE 4 PADS

MAIN FEATURE

- SMD Package, Seam Sealed, 3225 Type, L3.2*W2.5*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

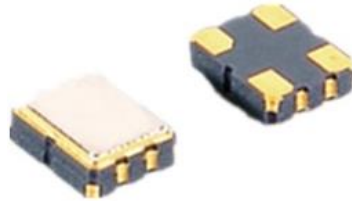
| | | | |
|-----------|-----------------|----------|------------|
| RL | 32K76800 | S | 300 |
| 1 | 2 | 3 | 4 |

- 1) RL: Part family Code for KHz SMD Oscillator, 3225 Type, L3.2*W2.5*H1.0mm, 4 Pads, COK32 series
- 2) 32K76800: Frequency range code for 32.76800KHz
- 3) S: SMD type, Package Tape/Reel, 3000pcs/Reel
- 4) 300: Specification code for original part No.: **TGS COK3231BGI01 TLF – 32K768**

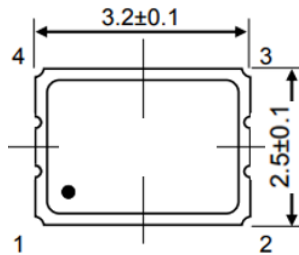
KHZ SMD OSCILLATOR 3225 TYPE 4 PADS

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

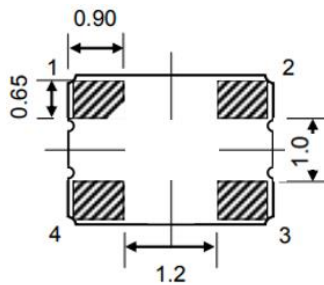
Image for reference



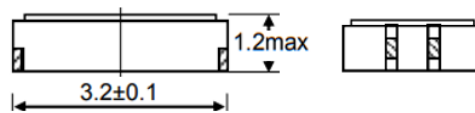
COK32



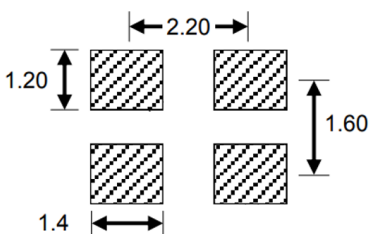
Marking
Frequency Range



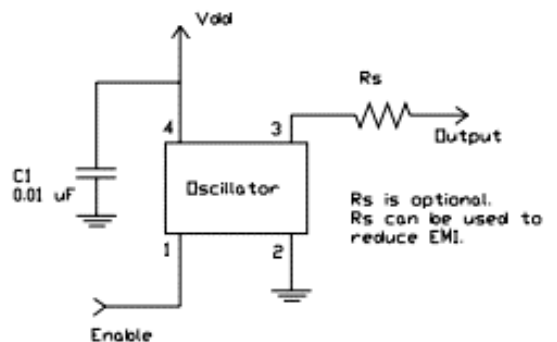
Pin Function
#1 Enable (Tri-State)
#2 Ground
#3 Output
#4 VDD



Recommend Pad Layout



Circuit Principle



KHZ SMD OSCILLATOR 3225 TYPE 4 PADS
ELECTRICAL PARAMETERS

| Parameter | | Part No. Symbol | Units | Value | | | Condition |
|--------------------------------|--------------------------------|-----------------|--|----------------------------|---------|---------------------|-----------------------|
| | | | | Min. | Typical | Max. | |
| Original Manufacturer | | TGS | TGS Crystals | | | | |
| Holder Type | | COK32 | KH SMD Oscillator 3225 Type, L3.2*W2.5*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 st 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 COK3231BGI01 TLF – 32K768**

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

KHZ SMD OSCILLATOR 3225 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 ⁻³ Pa cm ³ /s | MIL-STD-883E |

KHZ SMD OSCILLATOR 3225 TYPE 4 PADS
SUGGESTED REFLOW PROFILE (For Reference Only)

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

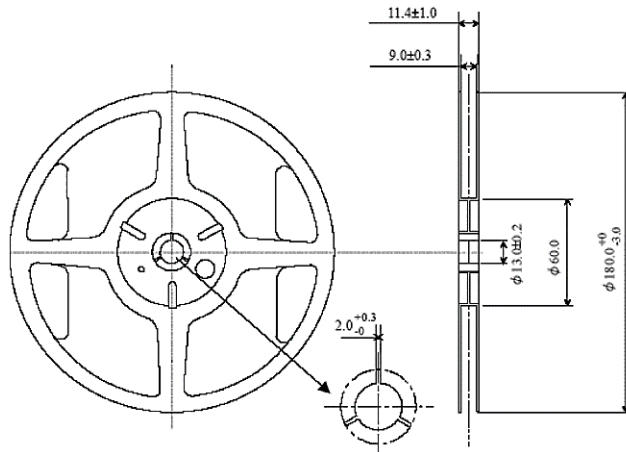
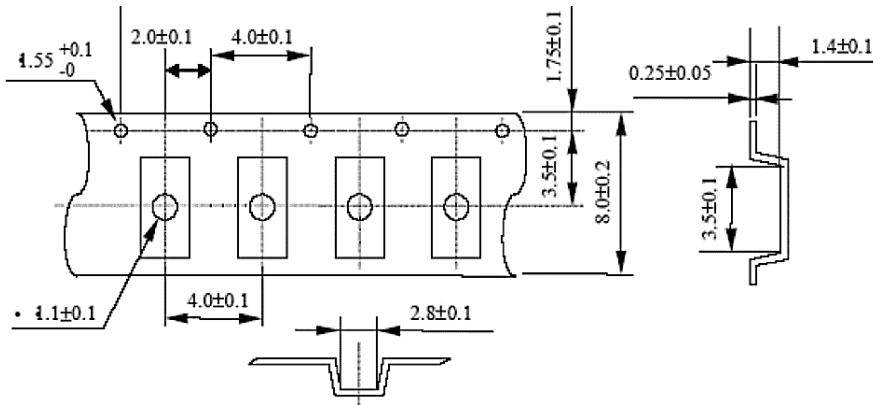


| | | |
|--|----------------------------------|-------------------|
| Profile Feature | | Pb-Free Assembly |
| Average Ramp-up Rate (Ts Max to Tp) | | 3°C/second Max |
| Preheat | Temperature Min (Ts Min.) | 125°C |
| | Temperature Max (Ts Max.) | 200°C |
| | Time (ts Min. to ts Max.) | 60 ~ 180 seconds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

KHZ SMD OSCILLATOR 3225 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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