




**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	N0617- YU32K76800S001
<b>DATE</b>	June 17, 2021
<b>REVISION</b>	A0
<b>DESCRIPTION</b>	<p>KHz SMD Crystals, L7.0*W3.1*H2.3mm, 2 Pads CCMU series            32.76800KHz, +/-20ppm, CL 12.5pF,            Operating Temp. Range -20°C ~+70°C,ESR 70 Kohm Max,            Reflow Profile Condition 260 °C Max. 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>	<a href="#">TGS CCMU 32K768A20-12.5-20-70 TLF</a>
<b>PART CODE</b>	<a href="#">YU32K76800S001</a>

<b>VENDOR APPROVE</b>			
Issued/Checked/Approved			
DATE: Jun.17, 2021			

<b>CUSTOMER APPROVE</b>	
DATE:	

## KHZ SMD CRYSTALS 7031 TYPE 2 PADS

### MAIN FEATURE

- SMD Package, 7031 Type, L7.0\*W3.1\*H2.3mm, 2 Pads
- Low cost
- Industry standard
- Reflow Profile Condition 260 °C Max.
- Cross more competitors part
- RoHS/RoHS III compliant



### APPLICATION

- Clock source for Portable
- Microcomputer & Automotive Equipment with Low power consumption

### PART CODE GUIDE

**RFQ**

[Request For Quotation](#)

YU	32K76800	S	001
1	2	3	4

- 1) YU: Part family Code for KHz SMD Crystal L7.0\*W3.1\*H2.3mm, 2 Pads, CCMU series
- 2) 32K76800: Frequency range code for 32.76800KHz
- 3) S: SMD type, Package Tape/Reel, 3000pcs/Reel
- 4) 001: Specification code for original part No.: **TGS CCMU 32K768A20-12.5-20-70 TLF**

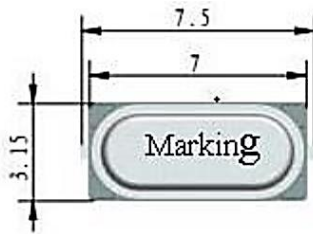
**KHZ SMD CRYSTALS 7031 TYPE 2 PADS**

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

Image for reference



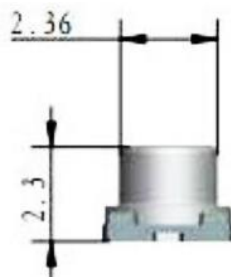
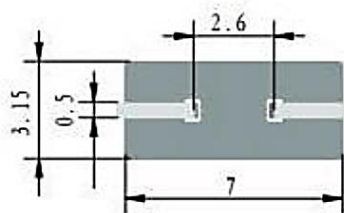
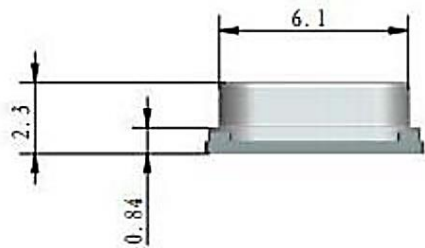
CCMU



**Marking**  
Frequency Range

or

**Marking**  
Internal Control Code



**KHZ SMD CRYSTALS 7031 TYPE 2 PADS**
**ELECTRICAL PARAMETERS**

Parameter	Part No. Symbol	Units	Value			Condition
			Min.	Typical	Max.	
Original Manufacturer	TGS	TGS Crystals				
Holder Type	CCMU	KHz SMD Crystals, L7.0*W3.1*H2.3mm, 2 Pads				
Frequency Range	32K768	KHz	32.76800			
Mode of Oscillation	A	AT Fundamental				
Frequency Tolerance	20	ppm	-20		+20	@25°C
Load Capacitance	-12.5	pF	12.5			
Frequency/Temp Coefficient		ppm/C <sup>2</sup>	0.028	0.034	0.04	
Operation Temperature	-40	°C	-20		+70	
Storage Temperature		°C	-55		+125	
Equivalent Series Resistance (ESR)	-70	KΩ			70	
Drive Level		μW			1.0	
Shunt Capacitance (C0)		pF	0.9	1.0	2.0	
Dynamic Capacitance		fF		3.0		
Turnover Temp		°C	+20	+25	+30	
Quality Factor			60000			
Capacitance Ratio			450			
Aging		ppm/year			±3	@1 <sup>st</sup> year
Insulation Resistance		MΩ	500			@100VDC ± 15VDC
Other	Package	T	Tape/Reel, 3000pcs/Reel			
	RoHS Status	LF	RoHS III compliant			
	Add Value		N/A			
	Code *		N/A			

Note: 1) Original Part Number: **TGS CCMU 32K768A20-12.5-20-70 TLF**

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

**KHZ SMD CRYSTALS 7031 TYPE 2 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 CRYSTALS 7031 TYPE 2 PADS**

**SUGGESTED REFLOW PROFILE (For Reference Only)**

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

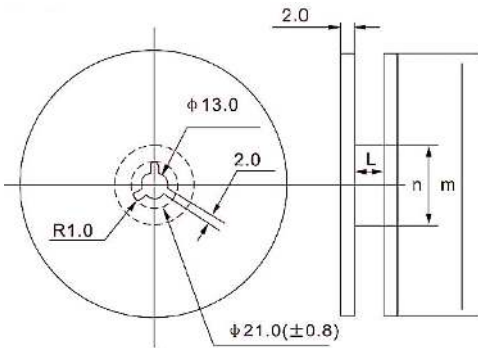
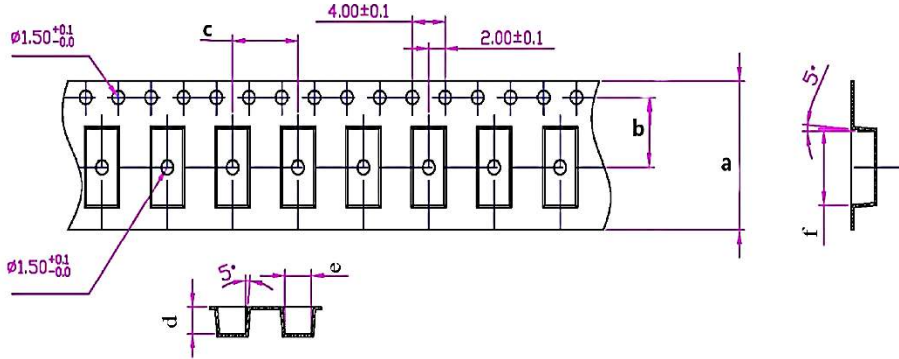


<b>Profile Feature</b>		Pb-Free Assembly
<b>Average Ramp-up Rate (Ts Max to Tp)</b>		3°C/second Max
<b>Preheat</b>	<b>Temperature Min (Ts Min.)</b>	125°C
	<b>Temperature Max (Ts Max.)</b>	200°C
	<b>Time (ts Min. to ts Max.)</b>	60 ~ 180 seconds
<b>Time maintained above</b>	<b>Temperature (T<sub>L</sub>)</b>	217°C
	<b>Time (t<sub>L</sub>)</b>	60 ~ 150 seconds
<b>Peak/Classification Temperature (T<sub>p</sub>)</b>		260 °C
<b>Time within 5°C of actual Peak Temperature (t<sub>p</sub>)</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.

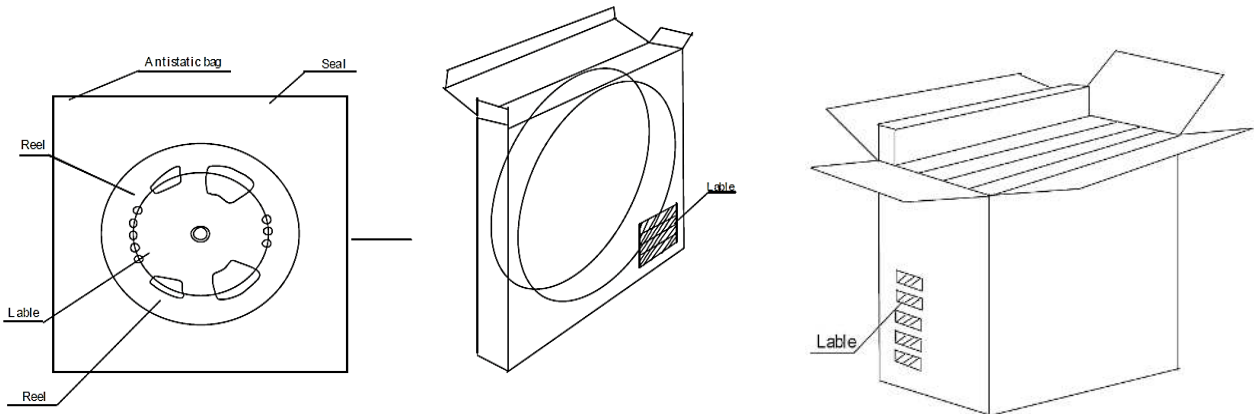
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**TAPE/REEL (Unit: mm)**

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



Pieces per reel	$\phi m$	$\phi n$	L	Carrier tape size
3000/reel	$330 \pm 3$	100min	$16 \pm 0.5$	$20 \pm 1.0$



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