SPECIFICATION SHEET

KHZ SMD CRYSTALS CASE 3215 2 PADS YR SERIES

SPECIFICATION SHEET NO.	R1102-YR32K76800S101	
ORIGINAL MFG/PART NO	ECEC XTAL/MF3215-32.768K10-12.5-40-70	
NEXTGEN PART CODE	YR32K76800S101	Indicate This Code For RFQ/Order
DATE	Nov. 2, 2024	
REVISION	A4	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	KHz SMD Crystals, Case 3215, 2 Pads, YR series Dimension: L3.2*W1.5*H0.9mm 32.76800KHz, Tolerance: ±10ppm, Load Capacitance (CL) 12.5pF ESR 70 Kohm Max., Operating Temp. Range -40°C ~+85°C Reflow Profile Condition 260 °C Max. REACH/RoHS/RoHS III Compliant Packed in Tape/Reel, 3000pcs/Reel	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE
Issued/Checked/Approved NextGen Components, Inc. Mandy Xu NextGen Components, Inc. Ruby Zhang NextGen Components, Inc. Jack Zhang
Date: Nov. 2, 2024

CUSTOMER APPROVE
Date:

MAIN FEATURE

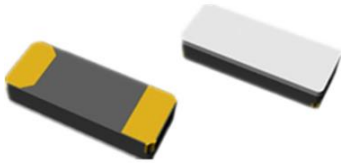


Image shown is a representation only. Exact specifications should be obtained from the product dimension.

- SMD Package, L3.2*W1.5*H0.9mm, 2 Pads
- Industry Standard
- Reflow Profile Condition 260 °C Max.
- Operating Temperature Range: -40~+85℃
- Available CL 6pF/7pF/9pF/12.5pF
- Low ESR 70 Kohm Max.
- Offer Quality Alternatives Parts For Major Brand and more
- Moisture Sensitivity Level (MSL) 1 (Unlimited)
- REACH/RoHS/RoHS III Compliant

MAIN APPLICATION

- Small Communications Devices And More

ELECTRICAL CHARACTERISTICS

- See Page 6 For Different Part Number.

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate Part Code YR32K76800S101 For RFQ/Order.

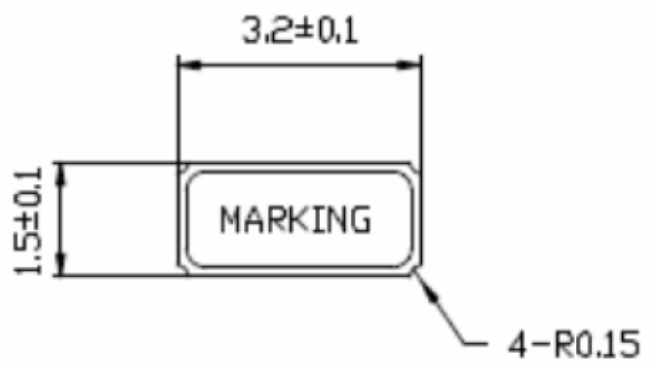
PART CODE GUIDE

RFQ
Request For Quotation

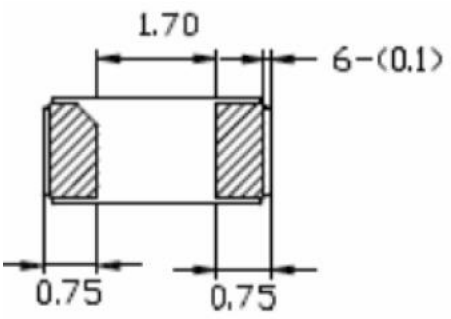
CODE	NAME	KEY SPECIFICATION OPTION
YR	Product Index	KHz SMD Crystal L3.2*W1.5*H0.9mm, 2 Pads
32K768	Frequency Range	32K768: 32.76800KHz
00S	Internal Control	Special letter A~Z , a~z or digits (1-9)
101	Parameters	Special Parameters Code letter A~Z, a~z or digits (1-9)
XX	Suffix	Blank: N/A XX: Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters

DIMENSION (Unit: mm)

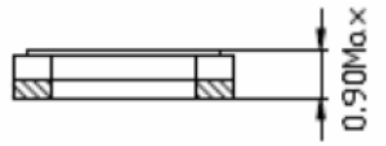
Top View



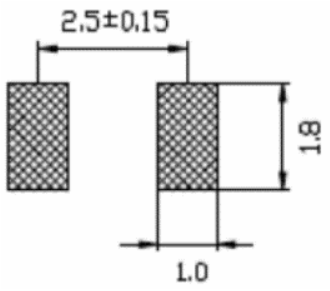
Bottom View

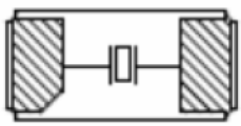


Side View

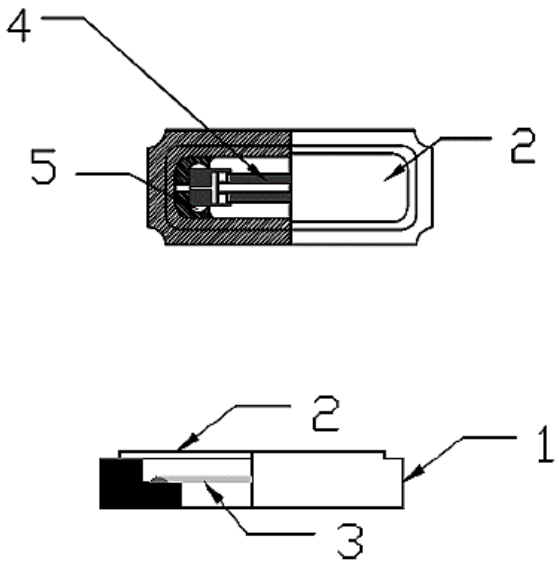


Land Pattern



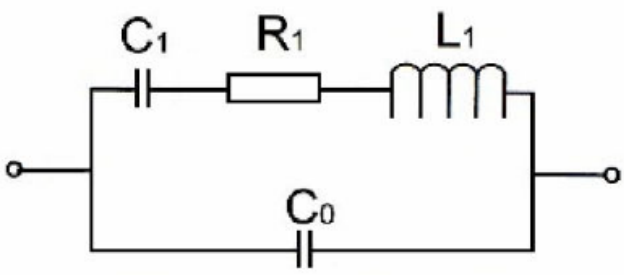


PRODUCT STRUCTURE



Item No.	Component Name	Material Name
1	Crystal Case	Ceramic (A1203)
2	Crystal Cover/Lid	KV (Fe/Co/Ni)
3	Crystal Chip/Blank	SiO2
4	Electrode	Cr, Au (Cr + Au)
5	Adhesive	Resin, Ag

EQUIVALENT CIRCUIT



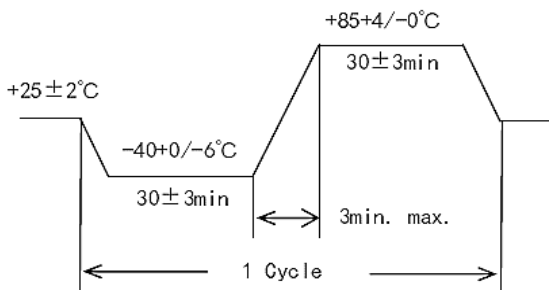
ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25℃

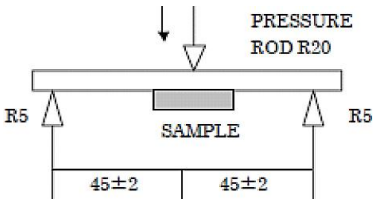
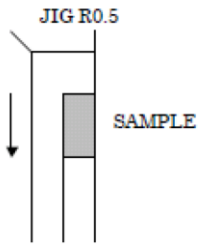
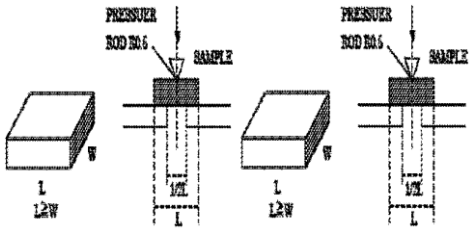
NEXTGEN PART CODE	ORIGINAL PART NUMBER	FREQUENCY RANGE	FREQUENCY TOLERANCE @ 25℃±3℃	LOAD CAPACITANCE	
		KHz	ppm	pF	Code
YR32K76800S101	MF3215-32.768K10-12.5-40-70	32.768	±10	12.5	E
YR32K76800S103	MF3215-32.768K10-7-40-70	32.768	±10	7	j
YR32K76800S104	MF3215-32.768K10-6-40-70	32.768	±10	6	w
YR32K76800S105	MF3215-32.768K10-9-40-70	32.768	±10	9	c

GENERAL ELECTRICAL PARAMETERS

PARAMETER	UNITS	VALUE			CONDITION
		MIN.	TYPICAL	MAX.	
Mode of Oscillation		AT Fundamental			
Equivalent Series Resistance (ESR)	KΩ	-	-	70	
Parabolic Coefficient	ppm/°C²	-0.04	-	-0.02	
Drive Level (DL)	µW	-	0.1	0.5	
Shunt Capacitance (C0)	pF	-	-	2.0	
Dynamic Capacitance (C1)	fF	-	4.1	-	
Turnover Temperance	°C	+20	25	+30	
Insulation Resistance	MΩ	500			@100VDC, ± 15VDC
Quality Factor (Q)	K	13	-	-	
Operation Temperance	°C	-40	-	+85	
Storage Temperance	°C	-55	-	+125	
Aging	ppm	-3	-	+3	Per Year

RELIABILITY

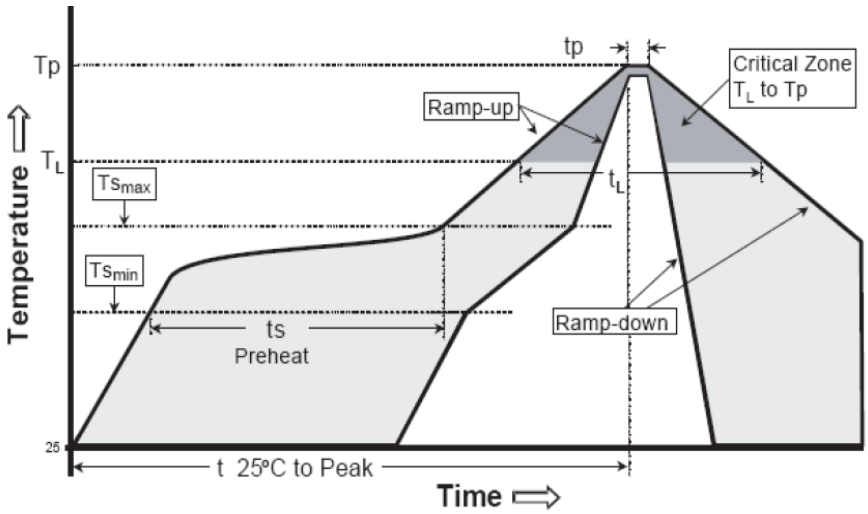
TEST ITEMS	TEST METHOD AND CONDITIONS	TEST STANDARD
High Temperature High Humidity Storage	Temperature: 60℃ ± 2 ℃ Relative Humidity: 90%~95% RH For Time: 500 ± 12 Hours	A, C, D, G
High Temperature Storage	Temperature: 125℃ ± 2℃ Time: 1000±12 Hours.	B, C, G
Low Temperature Storage	Temperature: -40℃ ± 2℃ Time: 500 ± 12 Hours.	A, C, G
Temperature Cycle	The crystal unit shall be subjected to 100 successive change of temperature cycles. 	A, C, G
Solderability	The solder pot temperature is 260±5℃ , dwell time 2±0.6sec	F
Drop Test	Height: 180 cm; Dropped Cycle: 3 cycles; Drop it on to a concrete board for 6 Directions (X,Y,Z), that should be 1 cycle	B, C
Vibration	Frequency Range: 10Hz ~ 55Hz Amplitude: 1.5mm±15%; Sweep time: 2~3 Minutes, 2 Hours in each direction, total 6 Hours	A, C
Leakage Test	Helium Bombing 5.0 ~5.5 Kgf/cm²; for 2 hours	E

TEST ITEMS	TEST METHOD AND CONDITIONS	TEST STANDARD
Terminal Strength	Shall be pressurized at a speed of approx. 0.5mm/sec. in the direction indicated by the arrow unit the bending width reaches 3mm and held for 5 sec. 	B, C
Sticking Tendency	A R0.5 Jig shall be used to apply a 10N dead load in the direction indicated by the arrow to the element and retain it for 10 sec. 	B, C
Element Assembly Strength	A R0.5 Jig shall be used to apply a 10N dead load in the direction indicated by the arrow to the element and retain it for 10 sec. 	B, C

TEST STANDARD

TEST STANDARD SYMBOL	SPECIFICATION	VALUE
A	Frequency Change permitted	ΔF≤10ppm
B	Frequency Change permitted	ΔF≤20ppm
C	Equivalent Series Resistance Change Permitted	ΔCI≤5KΩ or 20%
D	Insulation Resistance	>500 MΩ
E	Leak Rate Less than	<1*1E-9 Pa・m³/sec.
F	A new uniform coating of solder shall cover a Min 95% of the crystal surface	
G	Then 25 ± 2℃ over 2 hours before Testing	

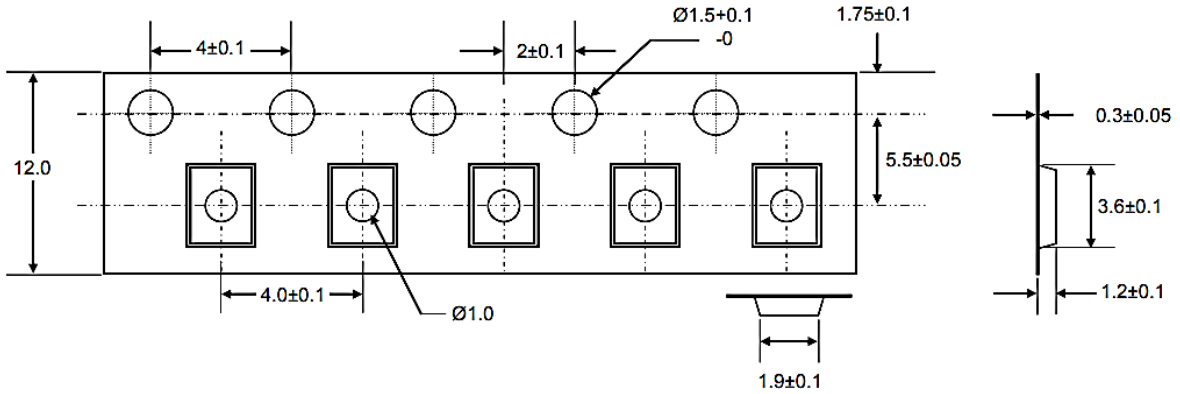
SUGGESTED REFLOW PROFILE (For Reference No. JEDEC J-STD-020D)

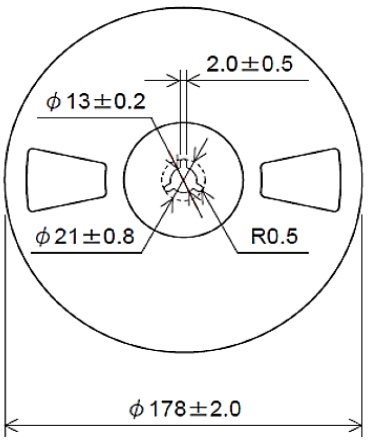


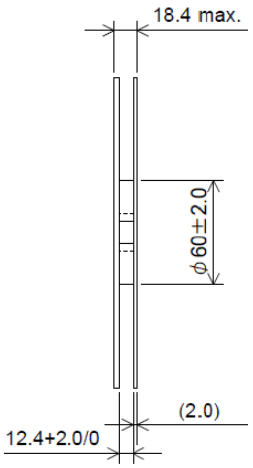
PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (Ts Max to Tp)		3°C/second Max
Preheat	Temperature Min (Ts Min.)	150°C
	Temperature Max (Ts Max.)	200°C
	Time (ts Min. to ts Max.)	60 ~ 120 seconds
Time maintained above	Temperature (T_L)	217°C
	Time (t_L)	60 ~ 150 seconds
Peak/Classification Temperature (Tp)		260 +/-5°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.

REEL AND TAPE DIMENSION (Unit: mm)

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







NOTES BEFORE USE

Ultrasonic Cleaning

General cleaning solutions or ultrasonic cleaning method may be used to clean our products. However, under certain circumstances, ultrasonic cleaning machine could generate resonance at the oscillation frequency of our products and thus deteriorate the electrical characteristics in device and even damage the overall structure of device. Therefore, verification test is recommended before cleaning.

Ultrasonic Welding

Avoid mounting and processing by Ultrasonic welding this method has a possibility of an excessive vibration spreading inside the crystal products and become the cause of characteristic deterioration and not oscillating.

Storage Temperature Description

Storage Temperature is only for the product itself, the temperature for the packing material is 5~40°C

Recommended Conditions for Manual Welding Max. Temperature: 350±10°C, Time: 3 sec Max., Re-solder time: twice Max.

IMPORTANT NOTES AND DISCLAIMER

1. 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 at Download Center.

2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.

3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

4. NextGen Component, Inc (*NextGen*) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

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8. *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.