NextGen Components,Inc.

PART CODE: **YP32K76800S601**

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	Q1128- YP32K76800S601	
DATE	Nov. 28, 2023	
REVISION	A0	Updated With Most Recent Data - Official First Release
DESCRIPTION AND MAIN PARAMETRICS	KHz SMD Crystals, Plastic Case, L8.0*W3.8*H2.4mm, 4 Pads, CCMC series 32.768000KHz, Tolerance: +/-10ppm, Load Capacitance: 6pF, Operating Temp. Range -40°C ~+85°C, ESR 50 Kohm Max, Reflow Profile Condition 260 °C Max. Tape/Reel, 3000pcs/Reel RoHS/RoHS III compliant, RoHS Annex III lead Exemption (exempt per RoHS EU 2015/863)	
CUSTOMER		
CUSTOMER PART NO.		
CROSS REF. PART NO.		
ORIGINAL MFG/PART NO.	TGS/CCMC 32K768A10-6-40-50TLH	
PART CODE	YP32K76800S601	

VENDOR APPROVE			
Issued/Checked/Approved	NextGen Components, Inc. Mandy Xu	NextGen Components, Inc. Ruby Zhang	NextGen Components, Inc. Jack Zhang
DATE: Nov. 28, 2023			

CUSTOMER APPROVE
DATE:

NextGen Components, Inc. sales@NextGenComponent.com www.NextGenComponent.com

NextGen Components,Inc.

PART CODE: **YP32K76800S601**

KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

MAIN FEATURE

- KHz SMD Crystal, Plastic Case L8.0*W3.8*H2.4mm, 4 pads
- Typical Load Capacitance: 12.5pF
- Operating Temperature Range -40°C ~+85°C
- Low Cost, High Precision, High Frequency Stability
- Reflow Profile Condition 260 °C Max.
- Cross More Competitors Part
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (exempt per RoHS EU 2015/863)

APPLICATION

- Clock Source For Portable
- Mobile Communications And Consumer Devices, Etc.
- Smart Card And Wearable Devices

PART CODE GUIDE

RFQ
Request For Quotation

YP	32K76800	S	601
1	2	3	4

1. YP: Parts family Code for KHz Plastic SMD Crystal, Plastic Case L8.0*W3.8*H2.4mm, 4 pads
2. 32K76800: Frequency range code for 32.76800KHz
3. S: SMD type Package code, Tape/Reel
4. 601: Internal Control Code or special Parameters code letter A~Z or digits (1-9)

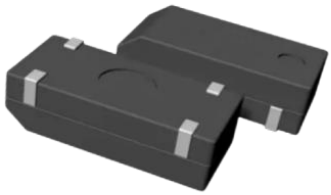
HOW TO ORDER

Please follow up **Part Code Guide** and indicate pat code when you order or RFQ.

KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

DIMENSION (Unit: Inch/mm)

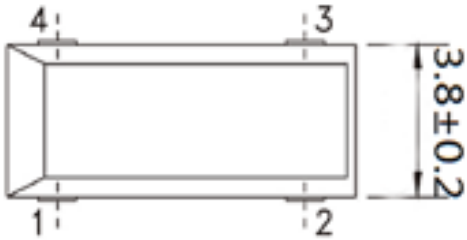
Image for reference



Package code

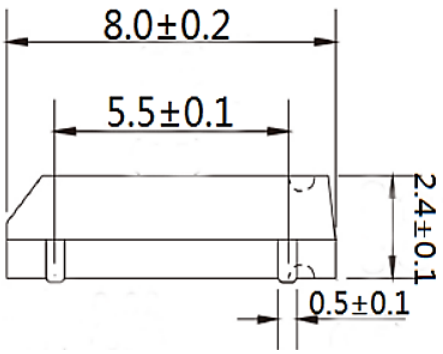
CCMC,4 Pads

L8.0*W3.8*H2.4mm,



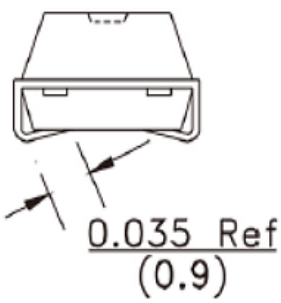
Marking

Frequency Rang



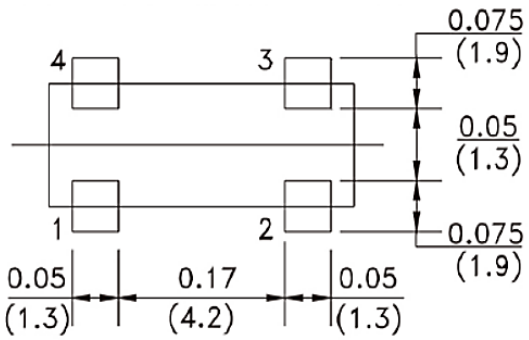
Note

Metal (Crystal inside) may be exposed on the top or bottom of CCMC's plastic case. That will not be affect performance and reliability of the part in question



KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

Recommend Pad Layout



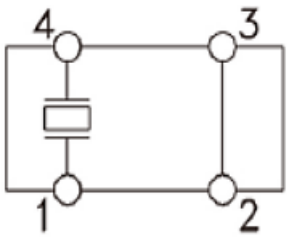
Pin Function

#1 Crystal

#2 Ground

#3 Ground

#4 Crystal



KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

GENERAL ELECTRICAL PARAMETERS

PARAMETERS	UNITS	VALUE			CONDITION
		MIN.	TYP.	MAX.	
Mode of Oscillation		AT Fundamental			
Frequency Temp. Coefficient (K)	ppm/C²	-0.040	0.034	0.040	
Operating Temperature Range	°C	-40		+85	
Storage Temperature Range	°C	-55		+125	
Drive Level (DL)	µW			1.0	
Shunt Capacitance (C0)	pF	0.9	1.5	2.0	
Motional Capacitance(C1)	fF		3.0		
Turnover Temp	°C	+20	+25	+30	
Quality Factor (Q)		75000			
Capacitance Ratio (R)		450			
Aging per Year	ppm			±3	@1st year
Insulation Resistance	Mohm	500			@100VDC, ± 15VDC
Package		Tape/Reel, 3000pcs/Reel			
RoHS Status	RoHS/RoHS III compliant, RoHS Annex III lead Exemption (exempt per RoHS EU 2015/863)				

KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

MAIN ELECTRICAL PARAMETERS - Ta = 25℃

Part Code	Frequency Range (KHz)	Frequency Tolerance (ppm)	Load Capacitance (CL) (pF)	ESR Max. (KΩ)	Operating Temp. Range (°C)
YP32K00000S102	32.000	±20	12.5	50	-40°C ~+85°
YP32K00000S103	32.000	±30	12.5	50	-40°C ~+85°
YP32K76800S601	32.768	±10	6	50	-40°C ~+85°
YP32K76800S602	32.768	±20	6	50	-40°C ~+85°
YP32K76800S603	32.768	±30	6	50	-40°C ~+85°
YP32K76800S702	32.768	±20	7	50	-40°C ~+85°
YP32K76800S703	32.768	±30	7	50	-40°C ~+85°
YP32K76800S902	32.768	±20	9	50	-40°C ~+85°
YP32K76800S903	32.768	±30	9	50	-40°C ~+85°
YP32K76800S101	32.768	±10	12.5	50	-40°C ~+85°
YP32K76800S102	32.768	±20	12.5	50	-40°C ~+85°
YP32K76800S103	32.768	±30	12.5	50	-40°C ~+85°
YP36K00000S102	36.000	±20	12.5	50	-40°C ~+85°
YP36K00000S103	36.000	±30	12.5	50	-40°C ~+85°
YP38K00000S102	38.000	±20	12.5	50	-40°C ~+85°
YP38K00000S103	38.000	±30	12.5	50	-40°C ~+85°
YP38K40000S102	38.4000	±20	12.5	50	-40°C ~+85°
YP38K40000S103	38.400	±30	12.5	50	-40°C ~+85°
YP40K00000S102	40.000	±20	12.5	50	-40°C ~+85°
YP40K00000S103	40.000	±30	12.5	50	-40°C ~+85°
YP60K00000S102	60.000	±20	12.5	50	-40°C ~+85°
YP60K00000S103	60.000	±30	12.5	50	-40°C ~+85°
YP65K53600S102	65.536	±20	12.5	50	-40°C ~+85°

NextGen Components,Inc.

PART CODE: **YP32K76800S601**

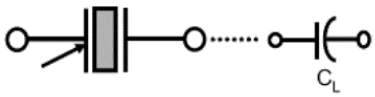
KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

MAIN ELECTRICAL PARAMETERS - Ta = 25℃

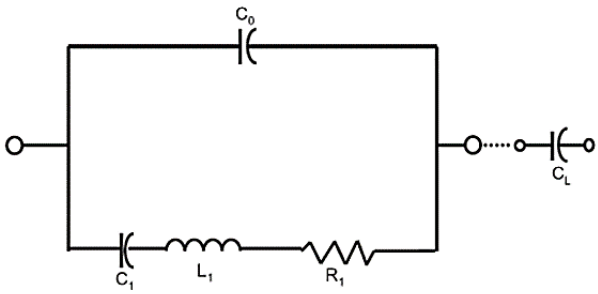
Part Code	Frequency Range (KHz)	Frequency Tolerance (ppm)	Load Capacitance (CL) (pF)	ESR Max. (KΩ)	Operating Temp. Range (°C)
YP65K53600S103	65.536	±30	12.5	50	-40°C ~+85°
YP75K00000S102	75.000	±20	12.5	50	-40°C ~+85°
YP75K00000S103	75.000	±30	12.5	50	-40°C ~+85°
YP76K80000S102	76.800	±20	12.5	50	-40°C ~+85°
YP76K80000S103	76.800	±30	12.5	50	-40°C ~+85°
YP77K50000S102	77.500	±20	12.5	50	-40°C ~+85°
YP77K50000S103	77.500	±30	12.5	50	-40°C ~+85°
YP77K50300S102	77.503	±20	12.5	50	-40°C ~+85°
YP77K50300S103	77.503	±30	12.5	50	-40°C ~+85°
YP96K00000S102	96.000	±20	12.5	50	-40°C ~+85°
YP96K00000S103	96.00	±30	12.5	50	-40°C ~+85°
YP100K0000S102	100.00	±20	12.5	50	-40°C ~+85°
YP100K0000S103	100.00	±30	12.5	50	-40°C ~+85°
YP153K6000S102	153.60	±20	12.5	50	-40°C ~+85°
YP153K6000S103	153.60	±30	12.5	50	-40°C ~+85°
YP153K6000S105	153.60	±50	12.5	50	-40°C ~+85°

TEST STANDARD

Equivalent Circuits

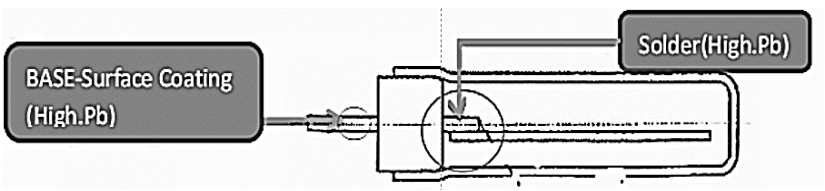


Symbol for crystal unit



Exemption Rule

1. SMD Tuning Fork Crystal series contain Pb chemical substance where solder material is over limitation. The location see at below drawing, The solder purpose is base connected with chip crystal blank.



2. Below statement is that exemption rule: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).(RoHS 6/5 2002/95/EC)

KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

RELIABILITY (Mechanical And Environmental Endurance)

TEST ITEMS	TEST METHOD AND CONDITIONS	REQUIREMENTS
Vibration	1. Vibration Frequency： 10 To 55hz 2. Vibration Amplitude： 1.5mm 3. Cycle Time： 1~2min(10-55-10hz) 4. Direction： X.Y.Z 5. Duration： 2h/Each Direction, total 6Hours	Frequency Change: ±10ppm Max. Resistance Change: ± 15% Rr Max
Drop	3 Times Free Fall From 75cm Height table to 3cm thickness hard wood board, After 30 minutes, the relative change value of frequency was measured.	Frequency Change: ±10ppm Max. Resistance Change: ± 15% Rr Max.
Leakage	Placed in a helium pressurized tank and filled with helium at a pressure of 0.5-0.6mpa for 1 hour then tested with a helium mass spectrometry leak detector.	Leakage:1x10⁻8mbar.L/S Max.
Solder ability	Dip in flux 3-5 seconds Temperature: 260℃±5℃	Solder adhesion is good, solder adhesion more than 95%
High Temp Storage	Temperature: 125℃±5℃ for 72 H, and the relative change in frequency was measured after 1-2 hours at room temperature	Frequency Change: ±10ppm Max. Resistance Change: ± 15% Rr Max.
Low Temp Storage	Temperature: -45℃±5℃ for 72 H, and the relative change in frequency was measured after 1-2 hours at room temperature	Frequency Change: ±10ppm Max. Resistance Change: ± 15% Rr Max.

KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

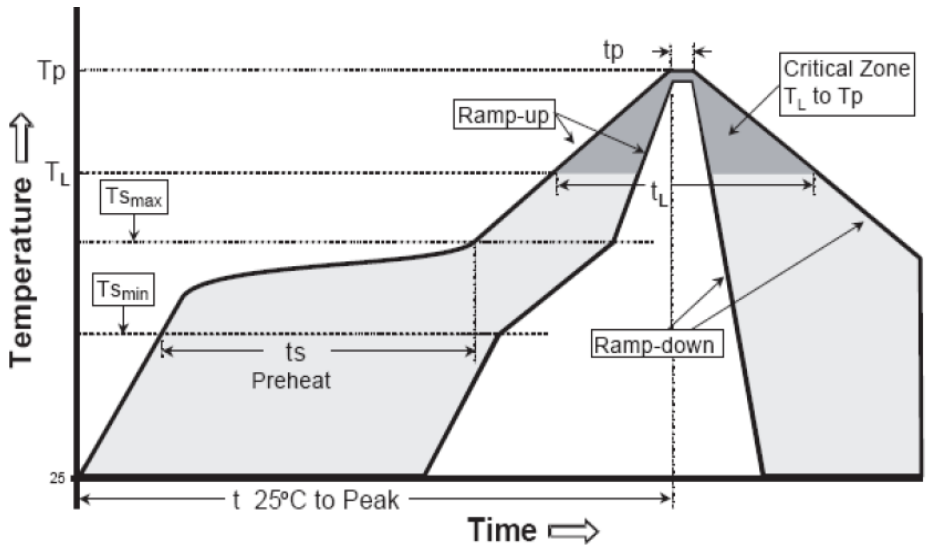
RELIABILITY (Mechanical And Environmental Endurance)

TEST ITEMS	TEST METHOD AND CONDITIONS	REQUIREMENTS
Humidity Storage	Temperature: 80℃±5℃ for 72 H, relative Humidity: 90-95% for 72 hours, and then the relative change in frequency was measured	Frequency Change: ±10ppm Max. Resistance Change: ± 15%rr max.
Temp cycle	Temperature 1: -55℃±5℃, Temperature 2: -55℃±5℃, Temperature change between from T1 to T2 to T1, Run 5 cycles, maintain T1 and T2 30minutes each in one cycle. And the relative change in frequency was measured after 1-2 hours at room temperature	Frequency Change: ±10ppm Max. Resistance Change: ± 15%rr max.
Salt Fog	Put the crystal units in the salt spray room(salt density: 5%) at the temperature of 35℃ for 96 hours. Then clean it with water and dry its surface.	The appearance shall has no abnormity and soldering is good.
Aging	Temperature: 85℃±5℃ for 1000H hours, the stood at room temperature for 1-2hours, and the relative change in frequency was measured	Frequency Change: ±10ppm Max. Resistance Change: ± 15%rr max.

KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

SUGGESTED REFLOW PROFILE (For Reference Only)

Recommended Solder Composition: It is following industry trend of using alloy range Sn-Ag (3.4-4.1)-Cu (0.45-0.9) or Sn-Pb-Ag for reflow and wave soldering.

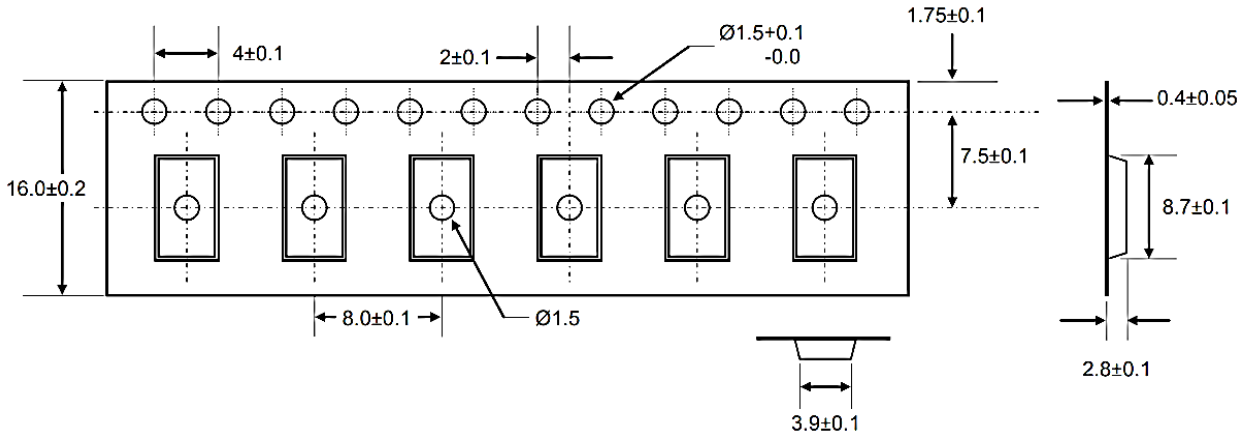


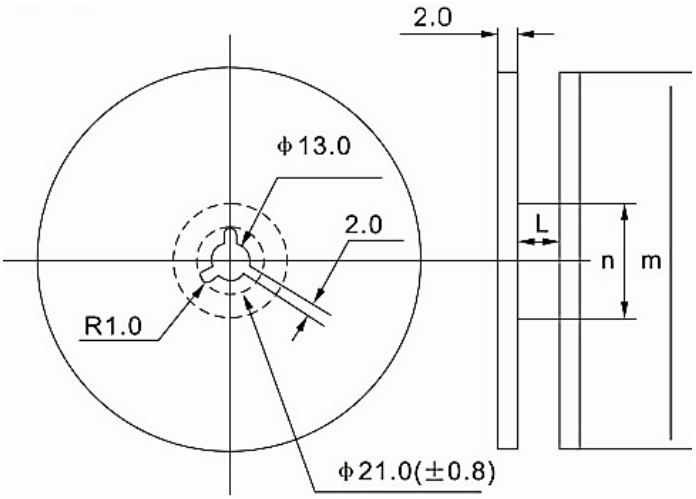
PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (Ts Max to Tp)		3°C/second Max
Preheat	Temperature Min (Ts Min.)	125°C
	Temperature Max (Ts Max.)	200°C
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (TL)	217°C
	Time (tL)	60 ~ 150 seconds
Peak/Classification Temperature (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 CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

TAPE/REEL (Unit: mm)

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





Symbol	ϕm	ϕn	L	Carrier tape size
Dimension	330±3	80 Min.	17.5	16

KHZ SMD CRYSTALS PLASTIC CASE 8038 TYPE CCMC SERIES

CAUTION

In Order To Maintain Quality. Without Change In Characteristics Of The crystal Units. Please Follow Below Recommendation

Shock

All Crystal Units Have A Thin Crystal Blanks Within If It Is Dropped Above The Recommended Dropping Height (500mm) The Specific Characteristics And Appearance Can Be Changed Please Pay Special Attention To External Shock

Environmental

1. Crystal Units' Frequency Can Be Changed Due To Surrounding Temperature If It Is Stored Next To A High Temperature Heater (Above+85°C) Or Below 40°C. And A Strong Light Source For Long Period Of Time. The Electrical Characteristics Can Be Changed It Is Suggested That These Environment Be Avoided
2. If The Unit Is Placed In A Humid Environment. Lead Terminal Can Be Damaged: Therefore. Do Not Store The Crystal Units In A Humid Environment
3. Crystal unit Has Vibrating Characteristics If It Is Placed Where Vibration Exists The Operating Characteristics Can Be Altered; Therefore This Environment Should Be Avoided

Leads

1. After Soldering Crystal Units Into A PCB Impacting The Unit From The top, bottom Left Or Right Side Of The Unit Can Shatter The Glass Portion Of The Base Rendering The Unit Useless

Assembly Method

1. Correct Ultrasonic Frequency For Cleaning Should Be Less Than 20khz
2. Soldering Should Be Bone Using IEC 61760-1 OR Pb-free Products

Storage

If The Crystal Units Are Stored In Humid Or Salty Environment Appearance Can Be Changed And Solderability Can Deteriorate; Therefore avoid Storing In Such Environment Do Not Store The Crystal Unit More Than 3 Months

IMPORTANT NOTES AND DISCLAIMER

1. 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.
2. 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.
3. *NextGen* makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does NextGen assume any liability for application assistance or customer product design.
4. *NextGen* does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application. No license is granted by implication or otherwise under any intellectual property rights of NextGen.
5. *NextGen* products are not authorized for use as critical components in life support devices or systems without express written approval by *NextGen.*
6. *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.