




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	N0223- YP32K76800S002
DATE	Feb. 23, 2021
REVISION	A0
DESCRIPTION	KHz Plastic SMD Crystals, L8.0*W3.8*H2.4mm, 4 Pads, CCMC series 32.76800KHz, +/-20ppm, CL 6pF, Operating Temp. Range -40°C ~+85°C, ESR 50 Kohm Max, Reflow Profile Condition 260 °C Max. Tape/Reel, RoHS/RoHS III compliant, RoHS Annex III lead Exemption (exempt per RoHS EU 2015/863)
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	TGS CCMC 32K768A20-6-40-50TLH
PART CODE	YP32K76800S002

VENDOR APPROVE			
Issued/Checked/Approved			
DATE: Feb. 23, 2021			

CUSTOMER APPROVE	
DATE:	

KHZ PLASTIC SMD CRYSTALS 8038 TYPE 4 PADS

MAIN FEATURE

- SMD Package, 8038 Type, L8.0*W3.8*H2.4mm, 4 Pads
- Low cost and short lead time
- Industry standard
- 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
- Microcomputer & Automotive Equipment with Low power consumption

PART CODE GUIDE

RFQ
Request For Quotation

YP	32K76800	S	002
1	2	3	4

- 1) YP: Part family Code for KHz Plastic SMD Crystals, L8.0*W3.8*H2.4mm, 4 Pads, CCMC series
- 2) 32K76800: Frequency range code for 32.76800KHz
- 3) S: SMD type, Package Tape/Reel, 3000pcs/Reel
- 4) 002: Specification code for original part No.: **TGS CCMC 32K768A20-6-40-50TLH**

MORE FREQUENCY RANGE AVAILABLE (KHz)

32.768	100.00	153.60							

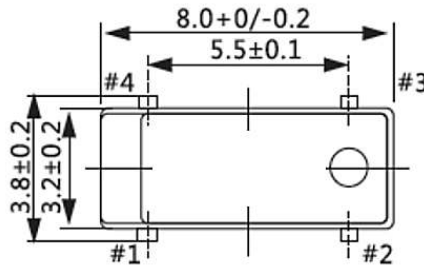
KHZ PLASTIC SMD CRYSTALS 8038 TYPE 4 PADS

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

Image for reference

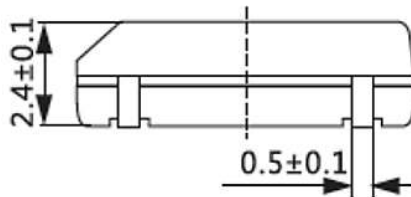


CCMC



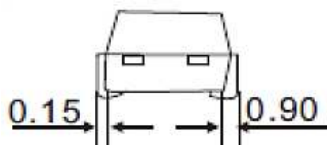
Marking

Line 1: Frequency Range

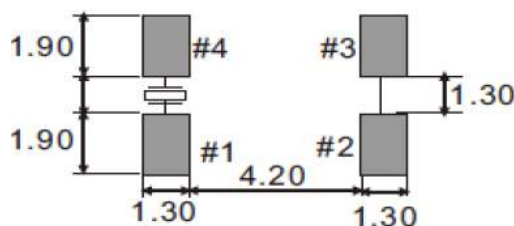


Note:

- Do not connect pad 2 and Pad 3 to external devices.
- Metal inside may be exposed on the top or bottom of plastic case
- It isn't Quality problem. This will not affect any quality, reliability and electrical specification when used



Recommend Pad Layout



Pin Function

- #1 Crystal
- #2 Ground
- #3 Ground
- #4 Crystal

KHZ PLASTIC SMD CRYSTALS 8038 TYPE 4 PADS
ELECTRICAL PARAMETERS

Parameter	Part No. Symbol	Units	Value			Condition
			Min.	Typical	Max.	
Original Manufacturer	TGS	TGS Crystals				
Holder Type	CCMC	KHz Plastic SMD Crystals, L8.0*W3.8*H2.4mm, 4 Pads				
Frequency Range	32K768	KHz	32.76800			
Mode of Oscillation	A	AT Fundamental				
Frequency Tolerance	20	ppm	-20		+20	@25°C
Load Capacitance	-6	pF	6			
Frequency/Temp Coefficient		ppm/C ²	0.028	0.034	0.04	
Operation Temperance	-40	°C	-40		+85	
Storage Temperance		°C	-40		+85	
Equivalent Series Resistance (ESR)	-50	KΩ			50	
Drive Level		μW			1.0	
Shunt Capacitance (C0)		pF	0.9	1.35	2.0	
Dynamic Capacitance		fF		1.8		
Turnover Temp		°C	+20	+25	+30	
Quality Factor			60000			
Capacitance Ratio			450			
Aging		ppm/year			±3	@1 st year
Insulation Resistance		MΩ	500			@100VDC ± 15VDC
Other	Package	T	Tape/Reel, 3000pcs/Reel			
	RoHS Status	LH	RoHS III compliant, RoHS Annex III lead Exemption (exempt per RoHS EU 2015/863)			
	Add Value		N/A			
	Internal Control Code *		N/A			

Note: 1) Original Part Number: **TGS CCMC 32K768A20-6-40-50TLH**

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

KHZ PLASTIC SMD CRYSTALS 8038 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

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SUGGESTED REFLOW PROFILE (For Reference Only)

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

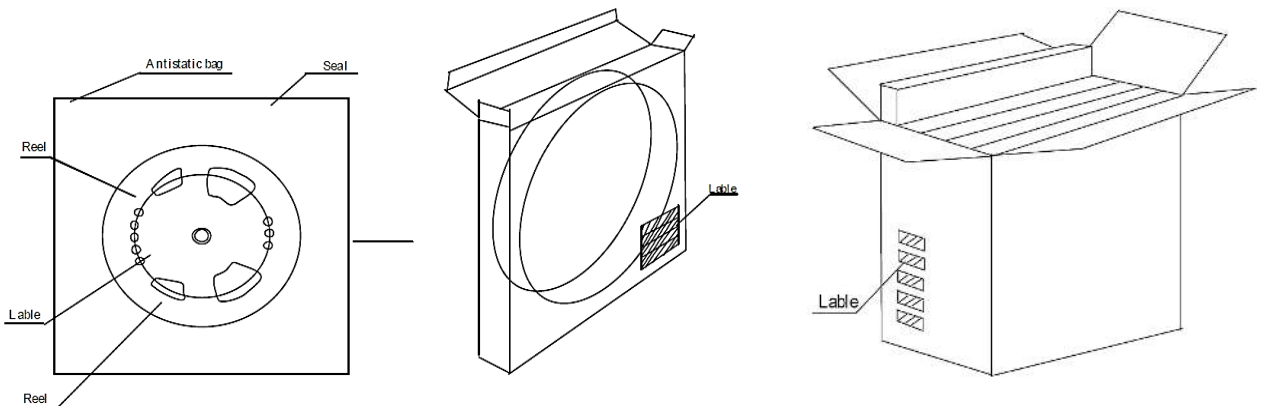
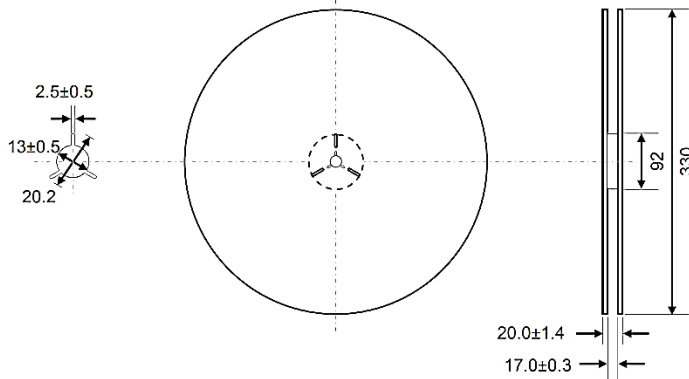
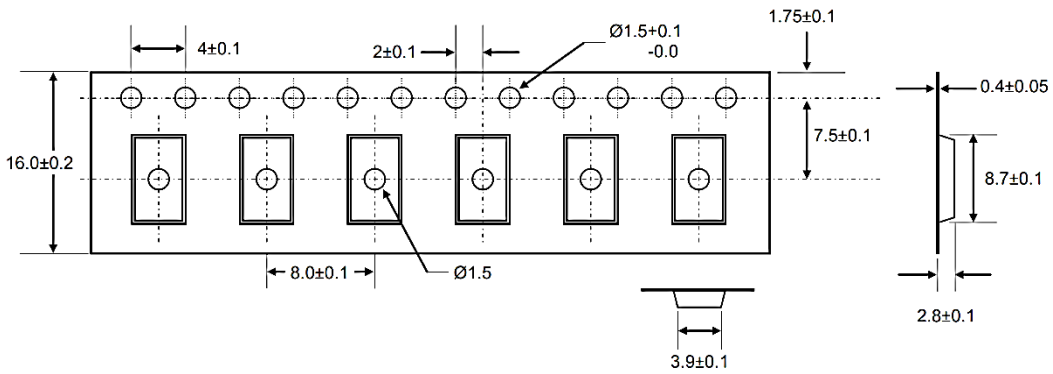


Profile Feature		Pb-Free Assembly
Average Ramp-up Rate (Ts Max to Tp)		3°C/second Max
Preheat	Temperature Min (Ts Min.)	125°C
	Temperature Max (Ts Max.)	200°C
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (Tl)	217°C
	Time (tl)	60 ~ 150 seconds
Peak/Classification Temperature (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.

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TAPE/REEL (Unit: mm)

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



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