SPECIFICATION SHEET

MHZ SMD CRYSTAL 2 PADS HC-49SSMD TYPE XK SERIES

SPECIFICATION SHEET NO.	S0627- XK8M0000S25216	
ORIGINAL MFG/PART NO.	TGS Crystals/XK8M000000S700/CSSM2 8M0A20-16-50-20-50 TLH	
NEXTGEN PART CODE	XK8M0000S25216	Indicate This Code For RFQ and New Order
DATE	June 27, 2025	
REVISION	A3	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	MHz SMD Crystal 2 pads, Hold Type HC-49SSMD(CSSM2), XK series, Resistance Weld Metal Case, Dimension L11.5*W4.7*H3.0mm 8.0000MHz, Tolerance ±20ppm, Load Capacitor 16pF Frequency stability ±50ppm; Operating Temp. Range -20°C ~+70°C, ESR 50ohm Max, Reflow Profile Condition 260 °C Max. Package in Tape/Reel, 1000pcs/Reel RoHS/RoHS III compliant, RoHS Annex III lead Exemption (exempt per RoHS EU 2015/863)	
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
Effective Date: June 27, 2025

CUSTOMER APPROVE
Date:

MAIN FEATURE

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

- MHz SMD Crystal L11.4*W4.7*H3.0mm 2 Pads
- Resistance Weld Metal Case, Hold Type HC-49SSMD,
- Low Profile and Short Lead time
- RoHS/RoHS III Compliant, RoHS Annex III Lead Exemption (exempt per RoHS EU 2015/863)
- Moist are Sensitivity Level (MSL) Level 1
- Excellent Aging and Wide Frequency Range

APPLICATION

- Microcontroller Systems, Microprocessors, Communication Interfaces
- Digital Signal Processors (DSPs), Test And Measurement Equipment

ELECTRICAL CHARACTERISTICS

- See Page 7 ~Page 11 For Different Part Code.
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code XK8M0000S25216 For RFQ and New Order.

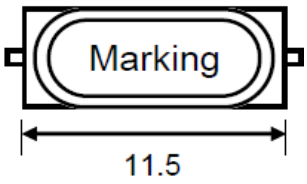
PART CODE GUIDE

RFQ
Request For Quotation

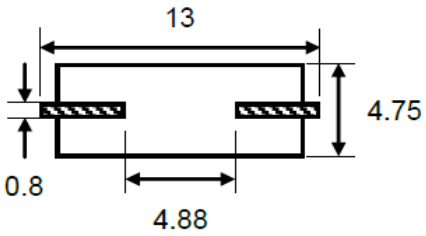
CODE	NAME	KEY SPECIFICATION OPTION
XK	Series Code	MHz SMD Crystal L11.4*W4.7*H3.0mm 2 Pads Hold Type HC-49SSMD
8M0	Frequency Range Code	8M0: 8.0MHz or Custom Frequency Range by Page 7~ Page 11
000S	Internal Control Code	Letter A~Z, a~z or digits (0~9)
25216	Parameters code	Special Parameters Code Letter A~Z, a~z or digits (0-9)
( )	Special/Custom Parameters Code	Blank: N/A XX: Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters

DIMENSION (Unit: mm)

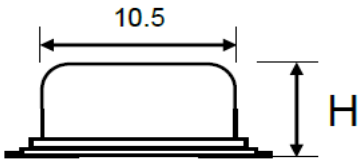
Top View



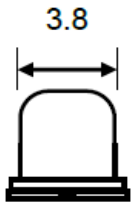
Bottom View



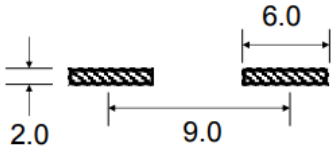
Side View



H: 3.0 +/-0.2



Solder Pattern



GENERAL SPECIFICATION

PARAMETER	SYMBOL	VALUE			UNIT	CONDITION
		MIN.	TYPE	MAX.		
Frequency Range	F0	3.072	-	150.00	MHz	Customer specified
Mode of Vibration Code		Fundamental				Optional: 3rd OT Or 5th OT
Frequency Tolerance	△F/F0	±10		±50	ppm	at 25℃±3℃
Load Capacitance	CL	6		Series	pF	Customer specified
Frequency Stability	Tc	±30		±50	ppm	Customer specified
Operating Temp. Range	TOPR	-40	-	+85	˚C	Optional:--20°C ~+70°C
Storage Temp. Range	TSTG	-40	-	+85	˚C	
Equivalent Series Resistance	ESR	See Table 1			Ω	Customer specified
Drive Level	DL	-	-	100	μW	
Insulation Resistance	IR	500	-		mΩ	At 100VDC
Shunt Capacitance	C0	-	-	7.0	pF	
Aging per year	Fa	-5	-	+5	ppm	1st Year

Table 1

FREQUENCY RANGE	MODE OF VIBRATION	ESR (Ω) MAX
3.072MHz≤ F0 ≤4.000MHz	Fundamental	≤120
4.000MHz< F0 ≤6.000MHz	Fundamental	≤100
6.000MHz< F0 ≤10.000MHz	Fundamental	≤50
10.00MHz< F0 ≤54.000MHz	Fundamental	≤40
30.00MHz< F0 ≤40.00MHz	3RD OT	≤80
40.00MHz< F0 ≤150.00MHz	3RD OT	≤70

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

PART CODE	FREQUENCY RANGE	FREQUENCY TOLERANCE	LOAD CAPACITANCE	FREQUENCY STABILITY	OPERATING TEMPE. RANGE	EQUIVALENT SERIES RESISTANCE
	MHz	ppm	pF	ppm	°C	Ω Max.
XK3M5795S35416	3.579545	±30	16	±50	-40 ~ +85	120
XK3M5795S35418	3.579545	±30	18	±50	-40 ~ +85	120
XK3M5795S35420	3.579545	±30	20	±50	-40 ~ +85	120
XK3M6864S35416	3.686400	±30	16	±50	-40 ~ +85	120
XK3M6864S35418	3.686400	±30	18	±50	-40 ~ +85	120
XK3M6864S35420	3.686400	±30	20	±50	-40 ~ +85	120
XK4M0000S35410	4.000000	±30	10	±50	-40 ~ +85	120
XK4M0000S35416	4.000000	±30	16	±50	-40 ~ +85	120
XK4M0000S35418	4.000000	±30	18	±50	-40 ~ +85	120
XK4M0000S35420	4.000000	±30	20	±50	-40 ~ +85	120
XK4M9152S35416	4.915200	±30	16	±50	-40 ~ +85	100
XK4M9152S35418	4.915200	±30	18	±50	-40 ~ +85	100
XK4M9152S35420	4.915200	±30	20	±50	-40 ~ +85	100
XK6M0000S35416	6.000000	±30	16	±50	-40 ~ +85	100
XK6M0000S35418	6.000000	±30	18	±50	-40 ~ +85	100
XK6M0000S35420	6.000000	±30	20	±50	-40 ~ +85	100
XK6M1440S35418	6.144000	±30	18	±50	-40 ~ +85	50
XK7M3728S35416	7.372800	±30	16	±50	-40 ~ +85	50
XK7M3728S35418	7.372800	±30	18	±50	-40 ~ +85	50
XK7M3728S35420	7.372800	±30	20	±50	-40 ~ +85	50

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

PART CODE	FREQUENCY RANGE	FREQUENCY TOLERANCE	LOAD CAPACITANCE	FREQUENCY STABILITY	OPERATING TEMPE. RANGE	EQUIVALENT SERIES RESISTANCE
	MHz	ppm	pF	ppm	°C	Ω Max.
XK8M0000S35416	8.000000	±30	16	±50	-40 ~ +85	50
XK8M0000S35418	8.000000	±30	18	±50	-40 ~ +85	50
XK8M0000S35420	8.000000	±30	20	±50	-40 ~ +85	50
XK8M0000S3540S	8.000000	±30	Series	±50	-40 ~ +85	50
XK8M1920S35416	8.192000	±30	16	±50	-40 ~ +85	50
XK8M1920S35418	8.192000	±30	18	±50	-40 ~ +85	50
XK8M1920S35420	8.192000	±30	20	±50	-40 ~ +85	50
XK9M2160S35416	9.216000	±30	16	±50	-40 ~ +85	50
XK9M2160S35418	9.216000	±30	18	±50	-40 ~ +85	50
XK9M2160S35420	9.216000	±30	20	±50	-40 ~ +85	50
XK9M8304S35416	9.830400	±30	16	±50	-40 ~ +85	50
XK9M8304S35418	9.830400	±30	18	±50	-40 ~ +85	50
XK9M8304S35420	9.830400	±30	20	±50	-40 ~ +85	50
XK10M000S35416	10.000000	±30	16	±50	-40 ~ +85	50
XK10M000S35418	10.000000	±30	18	±50	-40 ~ +85	50
XK10M000S35420	10.000000	±30	20	±50	-40 ~ +85	50
XK10M000S3540S	10.000000	±30	Series	±50	-40 ~ +85	50
XK11M059S35416	11.059200	±30	16	±50	-40 ~ +85	40
XK11M059S35418	11.059200	±30	18	±50	-40 ~ +85	40
XK11M059S35420	11.059200	±30	20	±50	-40 ~ +85	40

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

PART CODE	FREQUENCY RANGE	FREQUENCY TOLERANCE	LOAD CAPACITANCE	FREQUENCY STABILITY	OPERATING TEMPE. RANGE	EQUIVALENT SERIES RESISTANCE
	MHz	ppm	pF	ppm	°C	Ω Max.
XK12M000S35416	12.000000	±30	16	±50	-40 ~ +85	40
XK12M000S35418	12.000000	±30	18	±50	-40 ~ +85	40
XK12M000S35420	12.000000	±30	20	±50	-40 ~ +85	40
XK12M000S3540S	12.000000	±30	Series	±50	-40 ~ +85	40
XK12M288S35416	12.288000	±30	16	±50	-40 ~ +85	40
XK12M288S35418	12.288000	±30	18	±50	-40 ~ +85	40
XK12M288S35420	12.288000	±30	20	±50	-40 ~ +85	40
XK12M500S33418	12.500000	±30	18	±30	-40 ~ +85	40
XK14M318S35416	14.318180	±30	16	±50	-40 ~ +85	40
XK14M318S35418	14.318180	±30	18	±50	-40 ~ +85	40
XK14M318S35420	14.318180	±30	20	±50	-40 ~ +85	40
XK14M745S35416	14.745600	±30	16	±50	-40 ~ +85	40
XK14M745S35418	14.745600	±30	18	±50	-40 ~ +85	40
XK14M745S35420	14.745600	±30	20	±50	-40 ~ +85	40
XK16M000S35416	16.000000	±30	16	±50	-40 ~ +85	40
XK16M000S35418	16.000000	±30	18	±50	-40 ~ +85	40
XK16M000S35420	16.000000	±30	20	±50	-40 ~ +85	40
XK16M384S35416	16.384000	±30	16	±50	-40 ~ +85	40
XK16M384S35418	16.384000	±30	18	±50	-40 ~ +85	40
XK16M384S35420	16.384000	±30	20	±50	-40 ~ +85	40

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

PART CODE	FREQUENCY RANGE	FREQUENCY TOLERANCE	LOAD CAPACITANCE	FREQUENCY STABILITY	OPERATING TEMPE. RANGE	EQUIVALENT SERIES RESISTANCE
	MHz	ppm	pF	ppm	°C	Ω Max.
XK18M000S35418	18.000000	±30	18	±50	-40 ~ +85	40
XK18M432S35416	18.432000	±30	16	±50	-40 ~ +85	40
XK18M432S35418	18.432000	±30	18	±50	-40 ~ +85	40
XK18M432S35420	18.432000	±30	20	±50	-40 ~ +85	40
XK19M660S35416	19.660800	±30	16	±50	-40 ~ +85	40
XK19M660S35418	19.660800	±30	18	±50	-40 ~ +85	40
XK19M660S35420	19.660800	±30	20	±50	-40 ~ +85	40
XK20M000S35416	20.000000	±30	16	±50	-40 ~ +85	40
XK20M000S35418	20.000000	±30	18	±50	-40 ~ +85	40
XK20M000S35420	20.000000	±30	20	±50	-40 ~ +85	40
XK22M118S35416	22.118400	±30	16	±50	-40 ~ +85	40
XK22M118S35418	22.118400	±30	18	±50	-40 ~ +85	40
XK22M11840S420	22.118400	±30	20	±50	-40 ~ +85	40
XK24M000S35416	24.000000	±30	16	±50	-40 ~ +85	40
XK24M000S35418	24.000000	±30	18	±50	-40 ~ +85	40
XK24M000S35420	24.000000	±30	20	±50	-40 ~ +85	40
XK24M000S3540S	24.000000	±30	Series	±50	-40 ~ +85	40
XK24M576S35416	24.576000	±30	16	±50	-40 ~ +85	40
XK24M576S35418	24.576000	±30	18	±50	-40 ~ +85	40
XK24M576S35420	24.576000	±30	20	±50	-40 ~ +85	40

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

PART CODE	FREQUENCY RANGE	FREQUENCY TOLERANCE	LOAD CAPACITANCE	FREQUENCY STABILITY	OPERATING TEMPE. RANGE	EQUIVALENT SERIES RESISTANCE
	MHz	ppm	pF	ppm	°C	Ω Max.
XK25M000S35416	25.000000	±30	16	±50	-40 ~ +85	40
XK25M000S35418	25.000000	±30	18	±50	-40 ~ +85	40
XK25M000S35420	25.000000	±30	20	±50	-40 ~ +85	40
XK26M000S35416	26.000000	±30	16	±50	-40 ~ +85	40
XK26M000S35418	26.000000	±30	18	±50	-40 ~ +85	40
XK26M000S35420	26.000000	±30	20	±50	-40 ~ +85	40
XK27M000S35416	27.000000	±30	16	±50	-40 ~ +85	40
XK27M000S35418	27.000000	±30	18	±50	-40 ~ +85	40
XK27M000S35420	27.000000	±30	20	±50	-40 ~ +85	40
XK28M375S35416	28.375000	±30	16	±50	-40 ~ +85	40
XK28M375S35418	28.375000	±30	18	±50	-40 ~ +85	40
XK28M375S35420	28.375000	±30	20	±50	-40 ~ +85	40
XK30M000S35416	30.000000	±30	16	±50	-40 ~ +85	40
XK30M000S35418	30.000000	±30	18	±50	-40 ~ +85	40
XK30M000S35420	30.000000	±30	20	±50	-40 ~ +85	40
XK32M000S35416	32.000000	±30	16	±50	-40 ~ +85	40
XK32M000S35418	32.000000	±30	18	±50	-40 ~ +85	40
XK32M000S35420	32.000000	±30	20	±50	-40 ~ +85	40
XK40M000S35416	40.000000	±30	16	±50	-40 ~ +85	40
XK40M000S35418	40.000000	±30	18	±50	-40 ~ +85	40
XK40M000S35420	40.000000	±30	20	±50	-40 ~ +85	40

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

PART CODE	FREQUENCY RANGE	FREQUENCY TOLERANCE	LOAD CAPACITANCE	FREQUENCY STABILITY	OPERATING TEMPE. RANGE	EQUIVALENT SERIES RESISTANCE
	MHz	ppm	pF	ppm	°C	Ω Max.
XK8M0000S25216	8.000000	±20	16	±50	-20 ~ +70	50
XK12M000S15220	12.00000	±10	20	±50	-20 ~ +70	25

CHARACTERISTICS

Units and values indicated with { } in this specification are the former units and the specified values.

Standard Atmospheric Conditions:

Unless otherwise specified the standard range of atmospheric conditions for making measurements and tests is as follows:

Ambient temperature: 15℃ to 35℃

Relative humidity : 25% to 85%

Air pressure : 86 to 106 k Pa

If there is any doubt about the results measurements shall be made within the following limits:

Ambient temperature : 25±1℃

Relative humidity : 63% to 67%

Air pressure : 86 to 106 k Pa

Operating Temperature Range:

The operating temperature range is the range of ambient temperatures at which the quartz crystal oscillator can be stored without damage. Conditions are as specified elsewhere on these specifications.

Operating temperature range: -40℃ to +85℃

Storage Temperature Range:

The storage temperature range is the range of ambient temperatures at which the quartz crystal oscillator can be stored without damage. Conditions are as specified elsewhere on these specifications.

Storage temperature range: -55℃ to +125℃

MECHANICAL CHARACTERISTICS

Provided that measurement shall be carried out after letting it alone in the room temperature for 1h.

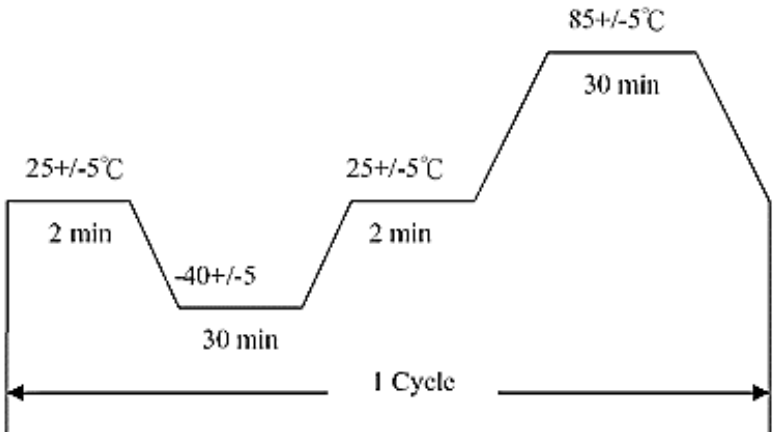
TEST ITEMS	TEST METHOD AND CONDITIONS
Shock	Dropping three times from the height of 50cm onto hard wooden board of thickness more than 30mm.
Vibration	a) Vibration Frequency： 10 To 55hz b) Vibration Amplitude： 0.8mm c) Cycle Time： 1~2min(10-55-10hz) d) Direction： X.Y.Z e) Duration： 2h/Each Direction, total 6Hours
Terminal Strength	Pulling: a) Body of specimen shall be fixed and 8.82N of tension weight shall be supplied gradually to axial direction of terminals/lead-wires for 30s b) After above test a)there is no observation of any visual damages on the specimen Bending: a) Body of specimen shall be fixed and 90 degree bending shall be given being supplied 225g tension weight, After that terminals lead-wires shall be straightened gradually Then the same bending and straightening shall be supplied to the opposite direction in the same axial b) After above tesla)there is no observation of any visual damages on the specimen
Sealing Tightness	There is no observation of gas bubble after specimen put into alcohol below 1atm for 3 min.
Solder ability	Terminals/lead-wires of specimen shall be dipped into solder melted tank at 230±5℃ for 3±0.5sec. Dipping depth shall be 2mm from the bottom of specimen's body. (After applying ROSIN flux) Soldering portion shall be covered in over 90% of terminals/lead-wires dipped
Resistance to Soldering Heat	Terminals/lead-wires of specimen shall be dipped into solder melted tank at 350±10℃'C for 3-4sec. or 260±5℃ for 5±1sec

Note:

1) Frequency variation shall be within ±5ppm and equivalent resistance less than ±15% max after the test
2) Measuring the frequency should be done after keeping test samples at room temperature for 24 hours

ENVIRONMENTAL CHARACTERISTICS

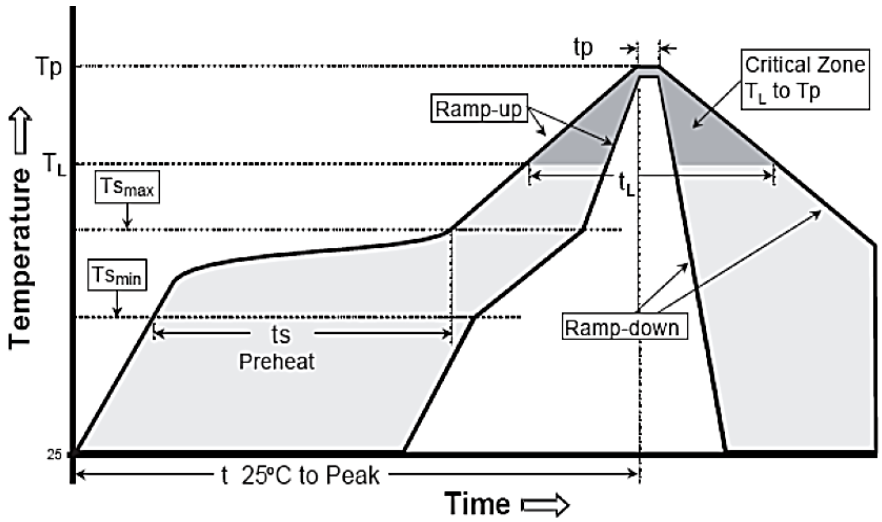
Provided that measurement shall be carried out after letting it alone in the room temperature for 1h.

TEST ITEMS	TEST METHOD AND CONDITIONS
Humidity Storage	It alone at 40℃+-2℃ in humidity of 90~95% for 48h
Storage in Low Temperature	It alone at -40℃+-2℃ for 240h
Storage in High Temperature	It alone at -85℃+-2℃ for 240h
Temperature Cycle	The following temperature cycle (10 cycles) Refer to below Fig. Temperature shift from low to high, high to low shall be done in 1℃'C /min. 

Note:

1) Frequency variation shall be within ±5ppm and equivalent resistance less than ±15% max after the test
2) Measuring the frequency should be done after keeping test samples at room temperature for 24 hours

SUGGESTED REFLOW PROFILE (For Reference Only)

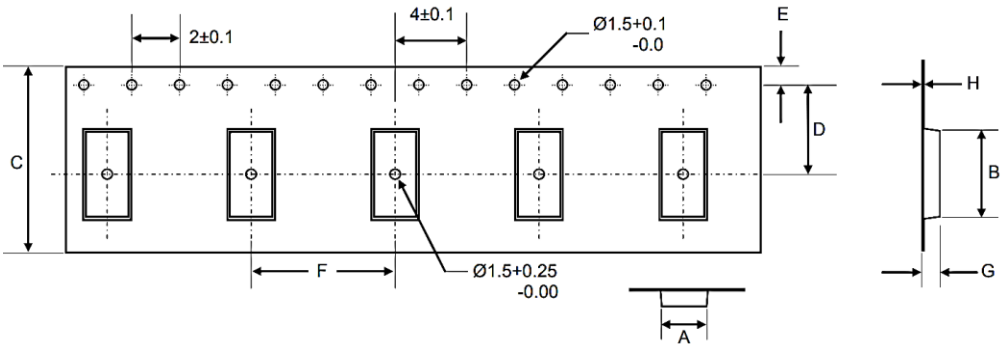


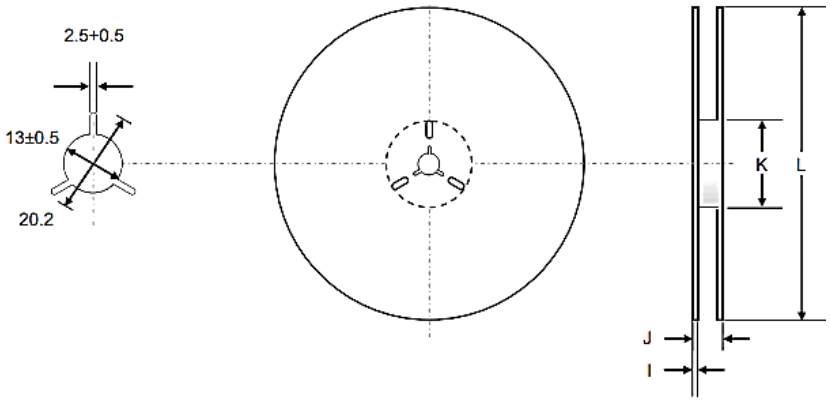
PROFILE FEATURE		HIGH-PB ASSEMBLY
Average Ramp-up Rate (Ts Max to Tp)		3°C/second Max
Preheat	Temperature Min (Ts Min.)	125°C
	Temperature Max (Ts Max.)	200°C
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (TL)	217°C
	Time (tL)	60 ~ 150 seconds
Peak/Classification Temperature (Tp)		260 °C
Time within 5°C of actual Peak Temperature (tp)		5 ~ 6 seconds
Ramp-down rate		6 °C /Second Max.
Time 25 °C to Peak Temperature		8 minutes Max.

NOTES

1. Only the lead should be heated when soldering. In case that the package temperature is exceeding 150℃ It may impair the crystal or may e cause the crystal quartz 10 destroy.
2. Pulling the lead strongly may cause cracking of the hermetic grass seal bending the lead closely from the case may also cause same problem so when the lead needs to be bent please leave move than 05.mm of lead from the case.
3. Too much shock or vibration is not allowed. According to conditions such as machine shock during the assembly the internal quartz crystal might be damaged. Please check your conditions carefully when using it in advance.
4. Don't storage or use in the environment that temperature may change rapidly to avoid the condensation. And also we recommend to storage the products in the normal environment (Temperature humidity).
5. This product can be subjected to ultrasonic cleaning. However since the oscillator may be affected depending on the condition be sure to check it.
6. Applying excessive drive level to the quartz crystal may cause deterioration for characteristics or damage. Circuit design must be such as to maintain a proper drive level.
7. Unless adequate negative resistance is allocated in the oscillation circuit startup time of oscillation may be increased or no oscillation may occur In order to avoid this provide enough negative resistance in the circuitry design.

TAPE AND REEL - Unite: mm, All Devices are packed in accordance with EIA standard RS-481-2 & 1000pcs/Reel)





Symbol	Dimension
A	5.0±0.1
B	15.0±0.2
C	24.0±0.3
D	11.05±0.1
E	1.75±0.1
F	8.0±0.1/12.0±0.1
G	5.0±0.1
H	0.5±0.1
I	2.4±0.2
J	24.4+2.0/-0.0
K	100.0±1.0
L	330

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 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 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.
5. *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.
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