



actual size

# Automotive SMD Crystal · JXS21P4

- 4 Pad Version, 2.0 x 1.6 mm
- seam sealed ceramic/metal package
- all versions are AEC-Q200 qualified
- HMR version with extended shock & vibration immunity



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

GENERAL DATA	
TYPE	JXS21P4
frequency range	16.0 ~ 40.0 MHz (fund. AT-cut)
frequency tolerance at 25 °C	±10 ppm, ±20 ppm, ±30 ppm
load capacitance $C_L$	8 pF / 10 pF / 12 pF standard (option: 6 pF ~ 16 pF / series)
shunt capacitance $C_0$	< 5 pF
storage temperature	-40 °C ~ +125 °C (T2, T3) / -40 °C ~ +85 °C (T1)
shock resistance	> 100 g (half sine pulse, 6.0 ms)*
drive level max.	100 µW (10 µW recommended)
aging	< ±3 ppm first year (< ±1 ppm for tol. ±10 ppm)

\* optional HMR version: 3000G / half sine pulse / 0,3 ms

TABLE 1: FREQUENCY STABILITY VS. TEMPERATURE							
		±15 ppm	±20 ppm	±25 ppm	±30 ppm	±50 ppm	±100 ppm
-20 °C ~ +70 °C		△	△	○	△	△	△
-40 °C ~ +85 °C	T1	△	○	○	○	○	○
-40 °C ~ +105 °C	T2			△	○	○	○
-40 °C ~ +125 °C	T3					△	○

○ available △ ask if available

ESR (SERIES RESISTANCE RS)			
frequency in MHz	vibration mode	ESR max. in Ω	ESR typ. in Ω
16.0 ~ 19.999	fund. - AT	150	120
20.0 ~ 29.999	fund. - AT	100	70
30.0 ~ 35.999	fund. - AT	80	50
36.0 ~ 40.000	fund. - AT	60	40

MARKING											
frequency with load capacitance code											
company code / date code / internal code											
date code: year/month; A ~ M: Jan. - Dec.; example 9A = 2019 January											
9:	2019	0:	2020	1:	2021	2:	2022	3:	2023	4:	2024
Jan.	Febr.	Mar.	Apr.	May	June						
A	B	C	D	E	F						
July	Aug.	Sept.	Oct.	Nov.	Dec.						
G	H	J	K	L	M						

**DIMENSIONS**

top view      side view      bottom view      crystal connection      pad layout      in mm

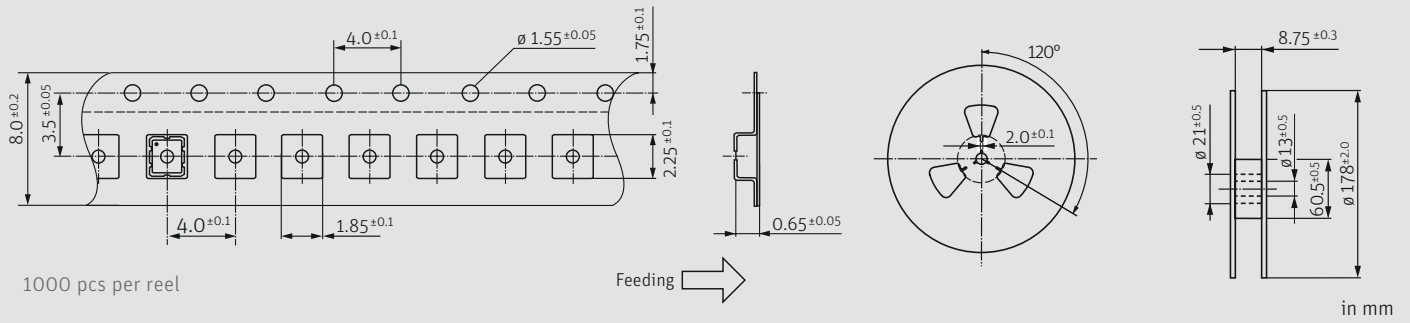
#2-#4: connected to lid, preferably connect to GND

ORDER INFORMATION							
Q	frequency	type	load capacitance	tolerance at 25 °C	stability vs. temp. range	option 1	option 2
Quartz	16.0 ~ 40.0 MHz	JXS21P4	8/10/12 pF std. 6 pF ~ 16 pF S for series	10 = ±10 ppm 20 = ±20 ppm 30 = ±30 ppm	see table 1	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C FU = for fundamental frequencies ≥ 20 MHz	AEC = AEC-Q200 qualified HMR = high mechanical reliability (3000g/half sine wave/0.3ms)

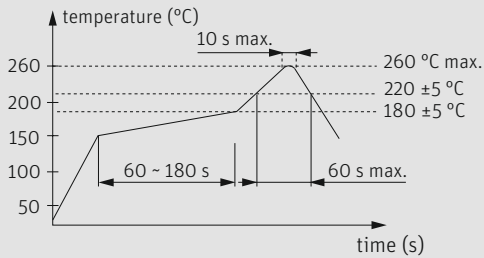
**Example: Q 26.0-JXS21P4-12-30/50-T2-FU-AEC-LF** (Suffix LF = RoHS compliant / Pb free)

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## TAPING SPECIFICATION



## REFLOW SOLDERING PROFILE



note: parts are also suitable for soldering systems with lead (Pb) content

## LOAD CAPACITANCE CODES

6 pF: q	12 pF: a	18 pF: f	27 pF: w
7 pF: m	13 pF: v	20 pF: c	30 pF: .
8 pF: k	14 pF: x	22 pF: g	series: s
9 pF: n	15 pF: j	24 pF: d	T: 3rd OT
10 pF: h	16 pF: b	25 pF: r	
11 pF: l	17 pF: t		

example 20.0 MHz / 12 pF: 20a00