

actual size

# Automotive SMD Crystal · JXS32P4

- 4 Pad Version, 3.2 x 2.5 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	JXS32P4
frequency range	10.0 ~ 54.0 MHz (fund. AT-cut)
frequency tolerance at 25 °C	±10 ppm (≤T1), ±30 ppm (STD ~ T7)
load capacitance $C_L$	12 pF standard (option: 8 pF ~ 30.0 pF / series)
shunt capacitance $C_0$	< 5 pF
storage temperature	-40 °C ~ +125 °C
shock resistance	> 100 g (half sine pulse, 6.0 ms)*
drive level max.	100 µW (10 µW recommended)
aging	< ±3 ppm first year

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

TABLE 1: FREQUENCY STABILITY VS. TEMPERATURE							
		±15 ppm	±20 ppm	±30 ppm	±50 ppm	±100 ppm	±150 ppm
-20 °C ~ +70 °C	STD.	○	○	○	○	○	
-40 °C ~ +85 °C	T1	○	○	○	○	○	
-40 °C ~ +105 °C	T2			○	○	○	
-40 °C ~ +125 °C	T3				○	○	
-40 °C ~ +150 °C	T7					○	○

○ available

ESR (SERIES RESISTANCE RS) AT MAX. TEMPERATURE RANGE			
frequency in MHz	vibration mode	ESR max. in Ω	ESR typ. in Ω
10.0 ~ 11.999	fund. - AT	300	150
12.0 ~ 12.999	fund. - AT	100	50
13.0 ~ 15.999	fund. - AT	100	40
16.0 ~ 18.999	fund. - AT	80	40
19.0 ~ 21.999	fund. - AT	60	30
22.0 ~ 29.999	fund. - AT	50	25
30.0 ~ 54.000	fund. - AT	50	20

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

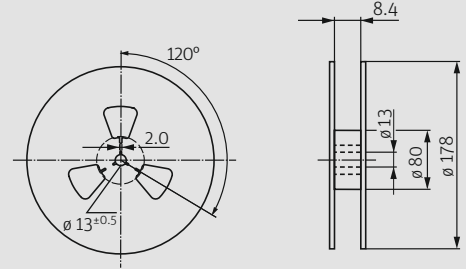
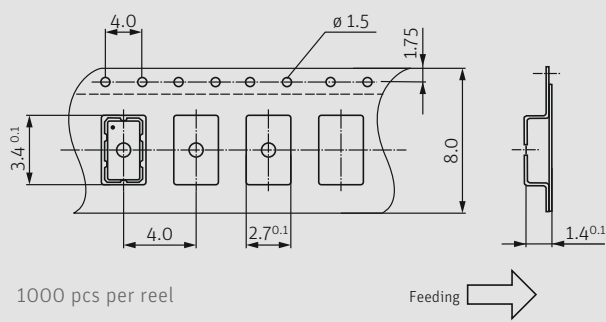
**DIMENSIONS**

top view      side view      bottom view      #2-#4: connected to lid crystal connection      pad layout      in mm

ORDER INFORMATION							
Q	frequency	type	load capacitance	tolerance at 25 °C	stability vs. temp. range	option 1	option 2
Quartz	10.0 ~ 54.0 MHz	JXS32P4	12 pF standard 8 pF ~ 30 pF S for series	10 = ±10 ppm 30 = ±30 ppm	15 = ±15 ppm 20 = ±20 ppm 30 = ±30 ppm 50 = ±50 ppm 100 = ±100 ppm 150 = ±150 ppm	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C T7 = -40 °C ~ +150 °C FU = for fundamental frequencies ≥ 20 MHz	AEC = AEC-Q200 qualified HMR = high mechanical reliability (3000g/half sine wave/0.3ms)
<b>Example: Q 24.0-JXS32P4-12-30/50-T1-FU-AEC-LF</b> (Suffix LF = RoHS compliant / Pb free)							

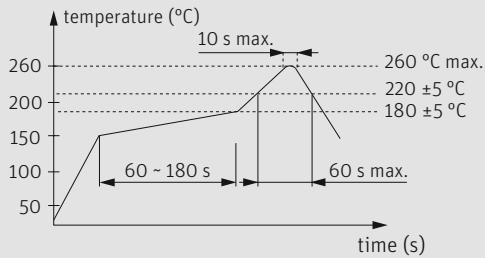
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## TAPING SPECIFICATION



in mm

## REFLOW SOLDERING PROFILE



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

## LOAD CAPACITANCE CODES

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	27 pF: w	
12 pF: a	18 pF: f	30 pF: .	
13 pF: v	20 pF: c		

example 20.0 MHz / 12 pF: 20a00