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10 February 2026

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JAXA-QTS-2070/131C
Cancelled
10 February 2026

CRYSTAL UNITS, QUARTZ (TYPE HC-35/U),
HIGH RELIABILITY, SPACE USE,
DETAIL SPECIFICATION FOR

Prepared and Established by Nihon Dempa Kogyo Co., Ltd.

Issued by Japan Aerospace Exploration Agency

This document is the English version of JAXA QTS/ADS which was originally written and authorized in Japanese and carefully translated into English for international users. If any question arises as to the context or detailed description, it is strongly recommended to verify against the latest official Japanese version.

The release date of the English version of this specification: 15 September 2026

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Record of Revisions			
Rev.	Date	Revised Contents	
NC	19 Sep. 03	Original	
A	1 Sep. 2005	Reflected GG-16 (Rev. A), issued by Nihon Dempa Kogyo Co., Ltd.	
B	29 May 2013	Reflected GG-16 (Rev. B), issued by Nihon Dempa Kogyo Co., Ltd.	
C	10 Dec. 2018	Reflected GG-16 (Rev. C), issued by Nihon Dempa Kogyo Co., Ltd.	
D	10 Feb. 2026	Reflected GG-16 (Rev. D), issued by Nihon Dempa Kogyo Co., Ltd.	
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Revision History			
Rev.	Date	Revised Contents	
NC	19 Sep. 2003	Original	
A	1 Sep. 2005	1. Standardized fonts (only applicable in Japanese language version). 2. Added Revision History. 3. Corrected editorial errors. 4. Modified to be consistent with JAXA-QTS-2070A.	
B	29 May 2013	1. Modified equivalent resistance range at the reference temperature and operating temperature range. 2. Corrected editorial errors.	
C	10 Dec. 2018	1. Changes only applicable in Japanese (cover page). 2. Added the note to paragraph 4.5 Change in Test and Inspection.	
D	10 Feb. 2026	1. Added document (No.: GG-16), issued by Nihon Dempa Kogyo Co., Ltd. 2. Added “(b) Radiography” to paragraph 4.5, “Change in Test and Inspection”.	
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CRYSTAL UNITS, QUARTS (TYPE HC-35/U),
HIGH RELIABILITY, SPACE USE,
DETAIL SPECIFICATION FOR

1. GENERAL

1.1 Scope

This specification establishes the detail requirements for NASDA 2070/131 (type HC-35/U) that satisfies NASDA-QTS-2070, crystal units, quartz, high reliability, space use, general specification for.

1.2 Part Number

The part number of this type is identified by frequency as follows:
(Example)

NASDA⁽¹⁾

2070 /

131 –

M***

Generic
specification
Number

Individual
identification

Frequency

The frequency of 20 to 130MHz shall be represented as 20M00000 to 130M00000 by replacing the decimal point with M.

Note: ⁽¹⁾ “NASDA” indicates the common part is for space use and may be abbreviated to “N”.

1.3 Ratings

The ratings shall be as shown in Table 1.

Table 1. Ratings

Item	Rating			
Frequency range	16 ≤ f < 20 MHz	18 ≤ f < 60 MHz	50 ≤ f < 100 MHz	70 ≤ f ≤ 130 MHz
Overtone	Fundamental	3rd	5th	7th
Drive level	25 μW ±20 %			
Operating temperature range	-55 to +105 °C			
Load capacitance	Series excitation			
Holder	HC-35/U or the equivalent			

2. APPLICABLE DOCUMENTS

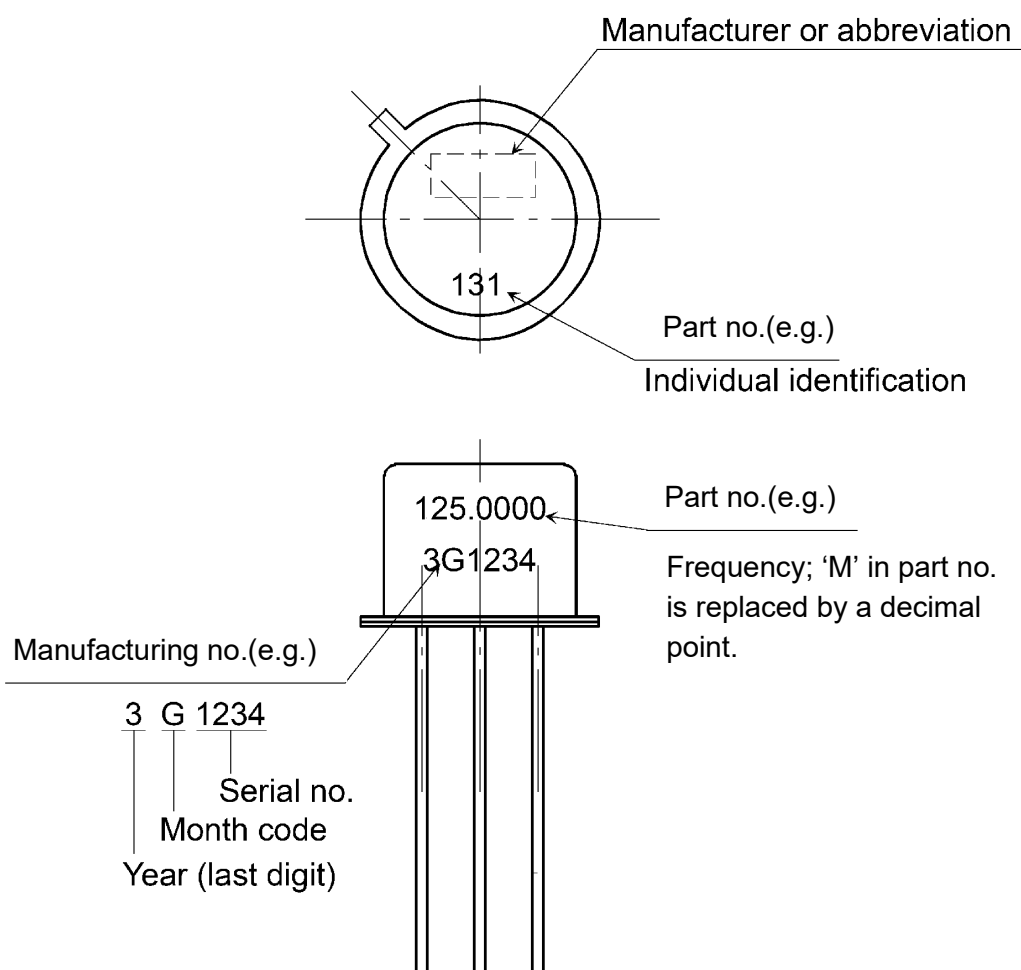
2.1 Applicable Documents

The applicable documents shall be in accordance with paragraph 2.1 of JAXA-QTS-2070.

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3. REQUIREMENTS The requirements shall be as specified in paragraph 3 of JAXA-QTS-2070. 3.1 Performance The requirements for performance are as specified in Table 2. 3.2 Marking Only the individual identification and the frequency shall be marked on the products as specified in Figure 1.			GG-16

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Table 2. Performance			
Item	Requirement paragraph of JAXA-QTS-2070	Requirement	
Marking	3.5.1	As specified in Supplementary Figure 1.	
Externals, Construction and Dimensions	3.5.2	As specified in Supplementary Figure 2.	
Mass	3.5.2	1.0 ± 0.5 g max.	
DPA	3.8	(1) Qualification test The crystal units shall conform to the requirements specified in the quality assurance program. (2) Quality conformance inspection Product construction shall conform to qualification requirements.	
Frequency and equivalent resistance (at the reference temperature)	3.10.1	Maximum frequency: $\pm 10 \times 10^{-6}$ Maximum equivalent resistance Fundamental: $16 \leq f \leq 20$ MHz 100 Ω max. 3rd: $18 \leq f < 30$ MHz 90 Ω max. 3rd: $30 \leq f < 36$ MHz 60 Ω max. 3rd: $36 \leq f \leq 60$ MHz 40 Ω max. 5th: $50 \leq f \leq 100$ MHz 60 Ω max. 7th: $70 \leq f \leq 130$ MHz 100 Ω max.	
Frequency and equivalent resistance (within the operating temperature range)	3.10.1	Maximum frequency shift: Measurement at the reference temperature $\pm 25 \times 10^{-6}$ Maximum equivalent resistance Fundamental: $16 \leq f \leq 20$ MHz 100 Ω max. 3rd: $18 \leq f < 30$ MHz 90 Ω max. 3rd: $30 \leq f < 36$ MHz 60 Ω max. 3rd: $36 \leq f \leq 60$ MHz 40 Ω max. 5th: $50 \leq f \leq 100$ MHz 60 Ω max. 7th: $70 \leq f \leq 130$ MHz 100 Ω max. (The operating temperature range: -55 to +105 °C)	
Parallel capacitance	3.10.2	7.0 pF max.	
Drive level	3.10.5	Maximum frequency shift: $\pm 5 \times 10^{-6}$ Maximum equivalent resistance shift: 2 Ω or $\pm 15\%$, whichever is greater.	
Hermeticity	3.11.1	1×10^{-9} Pam ³ /sec max.	
Terminal strength	3.11.2	Tensile applied: 10 N min., Bending applied: 5 N min.	
High-frequency vibration	3.11.4	Maximum frequency shift: $\pm 5 \times 10^{-6}$ Maximum equivalent resistance shift: 2 Ω or $\pm 15\%$, whichever is greater.	
Random vibration	3.11.5	Maximum frequency shift: $\pm 5 \times 10^{-6}$ Maximum equivalent resistance shift: 2 Ω or $\pm 15\%$, whichever is greater.	
Shock	3.11.6	Maximum frequency shift: $\pm 5 \times 10^{-6}$ Maximum equivalent resistance shift: 2 Ω or $\pm 15\%$, whichever is greater.	
Thermal shock	3.12.1	Maximum frequency shift: $\pm 5 \times 10^{-6}$ Maximum equivalent resistance shift: 2 Ω or $\pm 15\%$, whichever is greater.	
Radiation hardness	3.12.3	Maximum frequency shift: $\pm 5 \times 10^{-6}$ Maximum equivalent resistance shift: 2 Ω or $\pm 15\%$, whichever is greater.	
Operating aging	3.13.1.1	Maximum frequency shift: 30 days continuously $\pm 2 \times 10^{-6}$ 90 days continuously $\pm 2.5 \times 10^{-6}$	
Non-operating aging	3.13.1.2	Temperature: 85 ± 2 °C Maximum frequency shift: $\pm 2 \times 10^{-6}$	

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GG-16 4. QUALITY ASSURANCE PROVISIONS The quality assurance provisions shall be as specified in paragraph 4 of JAXA-QTS-2070. 4.1 In-Process Inspection The in-process inspection shall be in accordance with paragraph 4.3 of JAXA-QTS-2070. 4.2 Qualification Test The qualification test shall be in accordance with paragraph 4.4 of JAXA-QTS-2070. 4.3 Quality Conformance Inspection The quality conformance inspection shall be in accordance with paragraph 4.5 of JAXA-QTS-2070. 4.4 Long-Term Storage The long-term storage shall be in accordance with paragraph 4.7 of JAXA-QTS-2070. 4.5 Change of Tests and Inspections Exceptions and changes to tests and inspections with respect to the requirements of JAXA-QTS-2070 are as follows. (a) Radiation hardness There is no change in the tests or inspections for requirements specified in JAXA-QTS-2070. Note the relative humidity and atmospheric pressure stated in paragraph 4.6.1.1 are the reference for radiation hardness test. (b) Radiography (Changes) Paragraphs 4.6.4.1 and 4.6.4.2 are revised to comply with method 209 of MIL-STD-202. (Rationale) Due to a change from radiographic film-based imaging to digital image-based imaging. 5. PREPARATION FOR DELIVERY Preparation for delivery shall be as specified in paragraph 5 of JAXA-QTS-2070. 6. NOTES The notes shall be as specified in paragraph 6 of JAXA-QTS-2070.			

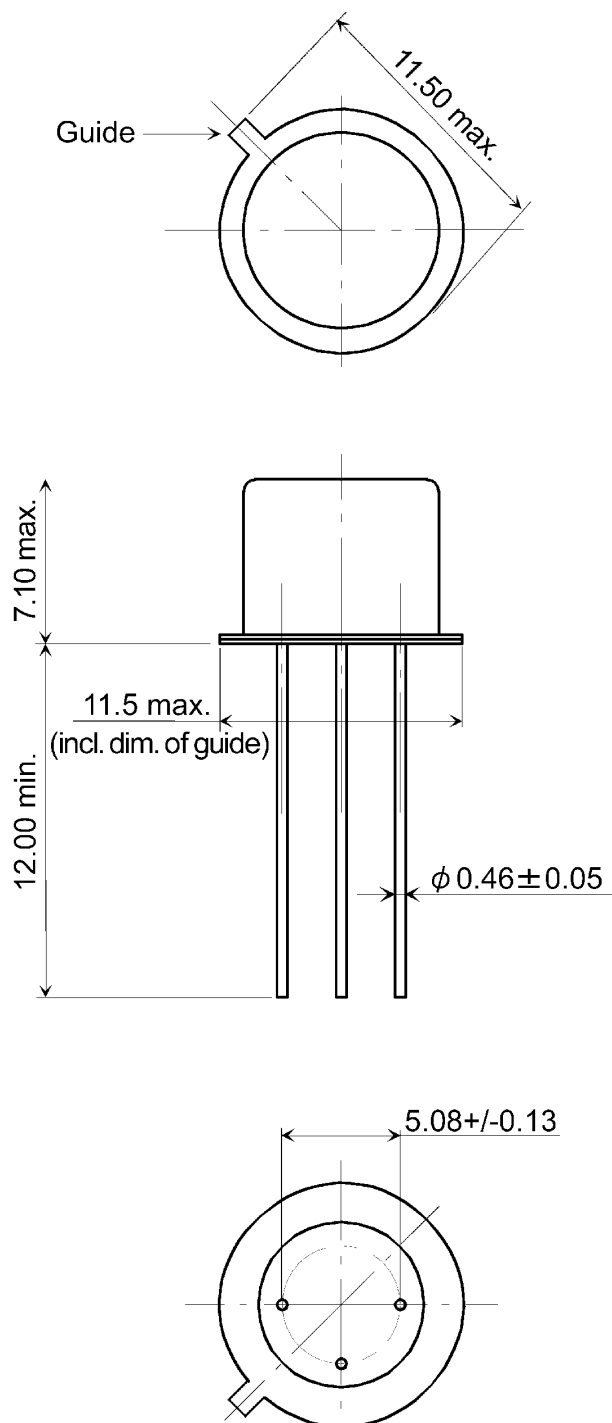


Month Code

Month	Jun.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Code	A	B	C	D	E	F	G	H	J	K	L	M

Supplementary Figure 1. Marking

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(Unit: mm)



Supplementary Figure 2. Externals and Dimensions