COMMON PARTS/MATERIALS, SPACE USE, APPLICATION DATA SHEET FOR

Part Description	TEMPERATURE SENSOR, PLATINUM
Part Number and Type	N1043/301 N1043/401 N1043/501
Applicable Specification	JAXA-QTS-2180 JAXA-QTS-2180/103 JAXA-QTS-2180/104 JAXA-QTS-2180/105

February 2025

Prepared and Established by Mitsubishi Heavy Industries, 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 data sheet: 28 May 2025

Record of revisions

Rev.	Date	Description
NC	11 Aug. 2009	Original
A	6 Feb. 2025	Reflected the change of document by Mitsubishi Heavy Industries, Ltd. Document No: VET25110 (Rev. A)
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Revision history

Rev.	Date	Description
NC	11 Aug. 2009	Original
A	6 Feb. 2025	(1) Changed the name of the corporate name on the cover page Changed the name of "Issued" from "National Space Development Agency of Japan" to "Japan Aerospace Exploration Agency". (For Japanese version only.) (2) Added part numbers Figures 1 and 3 and Table 3: Added part numbers corresponding to the addition of calibration temperatures. (3) Figures 4 to 6: Clarified the "sensing element" is the temperature sensor area. (4) Change of the Contact Changed and updated the contact in association with organization change.

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Contents

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COMMON PARTS/MATERIALS,
SPACE USE,
APPLICATION DATA SHEET FOR

1. GENERAL

1.1 Scope

This Application Data Sheet provides additional detailed information necessary for designing or selecting products not contained in JAXA QML. Relevant information not covered in this document shall also be considered. Users are responsible for all aspects pertaining to selection and use of the product(s) specified in this document.

1.2 Applicable Documents

a) JAXA-QTS-2000 Common Parts/Materials, Space Use, General Specification for

b) JAXA-QTS-2180 Temperature Sensors, Platinum, High Reliability, Space Use, General Specification For

c) JAXA-QTS-2180/103 Temperature Sensors, Platinum, Probe Sheath Type, Radiation Hardened, Long-life, High Reliability, Space Use, Detail Specification For

d) JAXA-QTS-2180/104 Temperature Sensors, Platinum, Extension Wire Sheath Type, Radiation Hardened, Long-life, High Reliability, Space Use, Detail Specification For

e) JAXA-QTS-2180/105 Temperature Sensors, Platinum, Surface Type, Radiation Hardened, Long-life, High Reliability, Space Use, Detail Specification For

1.3 Application Instruction

Mitsubishi Heavy Industries, Ltd. obtained certification of JAXA-QTS-2180 (QML system) without changing the qualification coverage of NASDA-QTS-1043. Therefore, the application data of NASDA-QTS-1043 and JAXA-QTS-2180 are the same. To use this application data sheet, the specification number shall be replaced as specified in Table 1.

Table 1. Specification Number Replacement

Detail specification number for NASDA-QTS-1043	Detail specification number for JAXA-QTS-2180
NASDA-QTS-1043/301	JAXA-QTS-2180/103
NASDA-QTS-1043/401	JAXA-QTS-2180/104
NASDA-QTS-1043/501	JAXA-QTS-2180/105

2. SUMMARY OF PRODUCT

The temperature sensors have been developed as platinum resistance temperature sensors for launch vehicle and satellite applications and have high quality, long-life, and high reliability characteristics.

2.1 Externals and Dimensions

The external view, dimensions, mass, interface and marking shall be as shown in Table 2.

Table 2. Externals, Dimensions, Mass, Interface and Marking

Part number	External view, dimensions, mass, interface and identification	Type
N1043/301	Shown in Figure 1	Probe sheath type, radiation hardened, long-life
N1043/401	Shown in Figure 2	Extended wire type, radiation hardened, long-life
N1043/501	Shown in Figure 3	Surface type, radiation hardened, long-life

2.2 Constructions

The temperature sensor consists of a sensing element which is made of tightly wound platinum resistance wire coil and a connector through which temperature change is transferred as a change in resistance value or extension wires including lead wires. The main construction and components are as follows.

a) When robustness is required for the temperature measuring element, the probe shall be constructed with a sensing element housed in protective tube.
b) When long extension wires are required, a sensing element and extension wires shall be connected with a transition that can be clamped.
c) When corrosion resistance is required, a sensing element shall be hermetically sealed (sheath) for protection.
d) For surface mount type, the temperature sensor shall be constructed only with a sensing element and lead wires.
e) The connector shall be of a hermetic type.

The construction drawings are shown in Figures 4 through 6.

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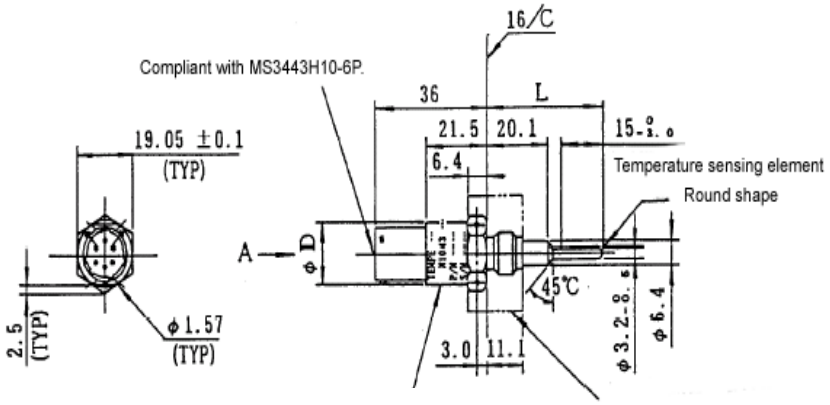


Unit: mm

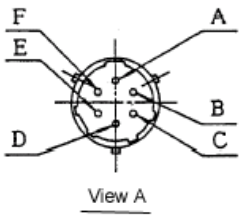
	φD
Weld reinforcement	$\phi 19^{+0.5}_{0}$
Cylindrical part	$\phi 19^{0}_{-0.2}$

Part Number	L	Mass
N1043/301-50-X32-1	38±1 mm	Max. 60g

X=1, 2

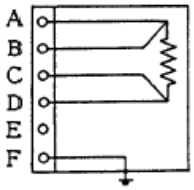
Note: For dimensions without specified tolerances in the above figure, the tolerance values specified below shall apply.

Significant figures shown in the above figure	Tolerance
X	±1
X.X	±0.5
X.XX	±0.25



View A

The phase between the hexagonal connector receptacle portion and each pin may be aligned inaccurately.



Wiring diagram

Receptacle (Compliant with MS3443H10-6P) and Pin Assignment

TEMPERATURE SENSOR
N1043/ [ ] JAXA part number
P/N [ ] QML manufacturer's part number
S/N [ ] [ ] [ ]
- [ ] Supplier's name
- [ ] Year and month manufactured (Example 2009-05)
- [ ] Serial number, starting with "0001"

Identification Markings

Figure 1. Externals, Dimensions, Mass and Interface and Markings of Temperature Sensor N1043/301

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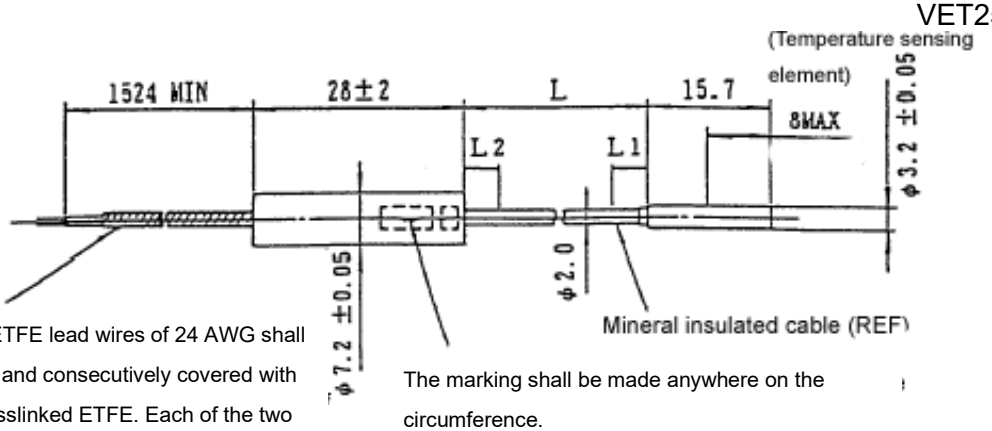


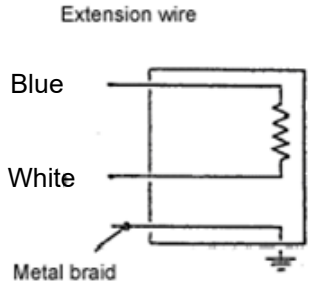
Two crosslinked ETFE lead wires of 24 AWG shall be metal-braided, and consecutively covered with metal-braided crosslinked ETFE. Each of the two lead wires shall be of two wire system.

The marking shall be made anywhere on the circumference.

Unit: mm

Note: For dimensions without specified tolerances in the above figure, the tolerance values specified below shall apply.

Significant figures shown in the above figure	Tolerance
X	±1
X.X	±0.5
X.XX	±0.25



Wiring diagram

Minimum length of a mineral insulated cable to be bent	L 1	L 2
	9mm	9mm

Minimum bending radius for a mineral insulated cable	Radius
	6mm

Part Number	Length
N1043/401-70-902-1	43mm
N1043/401-70-902-2	84mm
N1043/401-70-902-3	66mm
N1043/401-71-702-1	84mm

Part Number	Mass
N1043/401-70-902-1 N1043/401-70-902-2 N1043/401-70-902-3 N1043/401-71-702-1	Body: Max. 14g Extension wire: Max. 20g/cm

[ ] [ ]

Most significant digit number of base resistance

QML manufacture's serial number, starting with “0001”

Identification Markings

Figure 2. External views, Dimensions, Mass, Interface, and Markings of Temperature Sensor N1043/401

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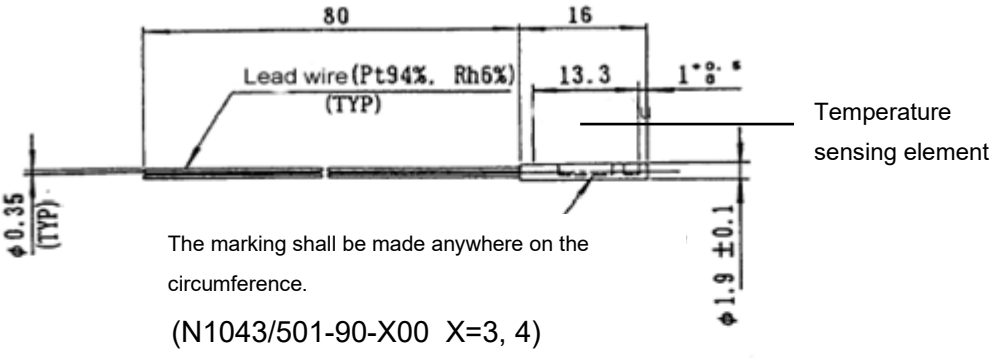
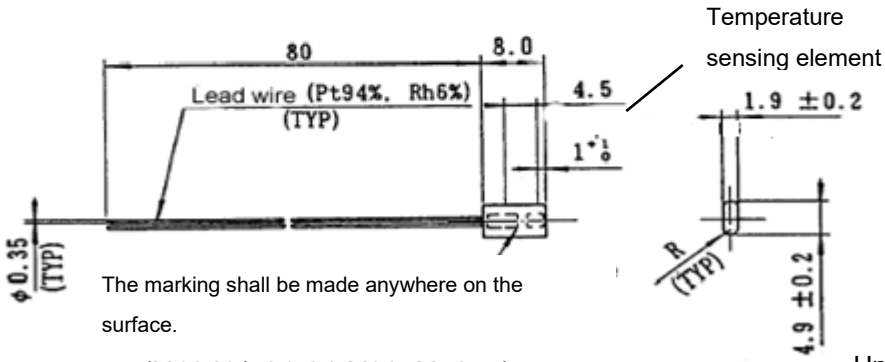


The marking shall be made anywhere on the circumference.

(N1043/501-90-X00 X=3, 4)



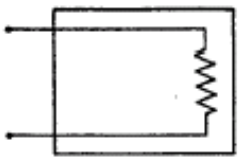
The marking shall be made anywhere on the surface.

(N1043/501-91-X00 X=6, 7)

Unit: mm

Note: For dimensions without specified tolerances in the above figure, the tolerance values specified below shall apply.

Significant figures shown in the above figure	Tolerance
X	±1
X.X	±0.5
X.XX	±0.25



Wiring diagram

Part Number	Mass
N1043/501-90-X00 X=3, 4	5g max.
N1043/501-91-X00 X=6, 7	5g max.

[ ] [ ]

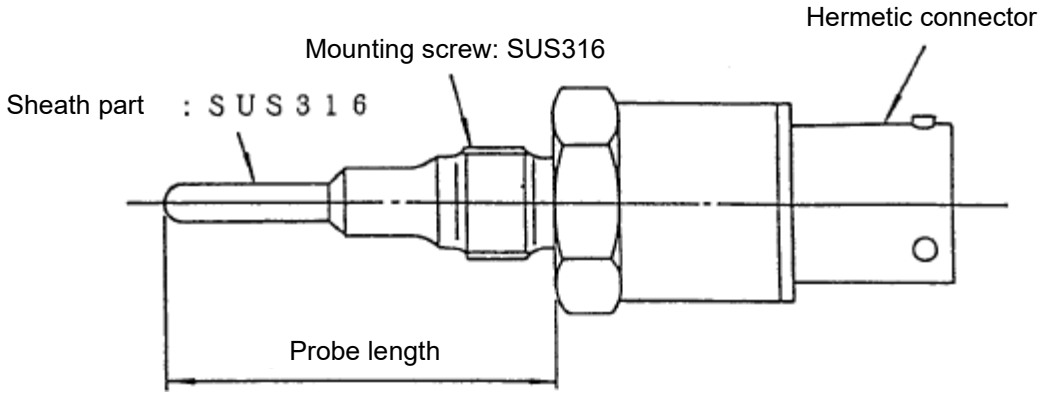
Most significant digit number of base resistance

QML manufacture's serial number, starting with “0001”

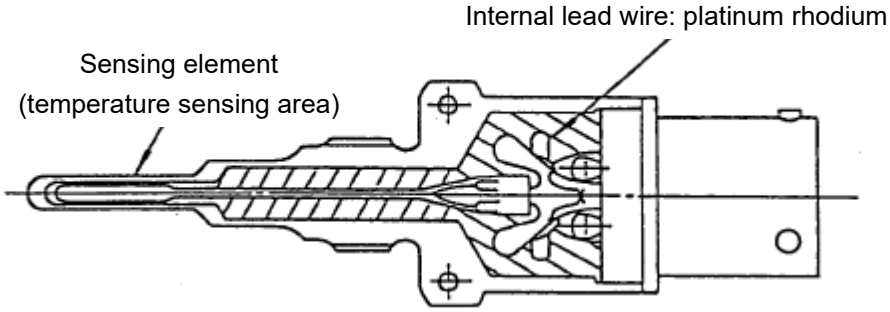
Identification Markings

Figure 3. External views, Dimensions, Mass, Interface, and Markings

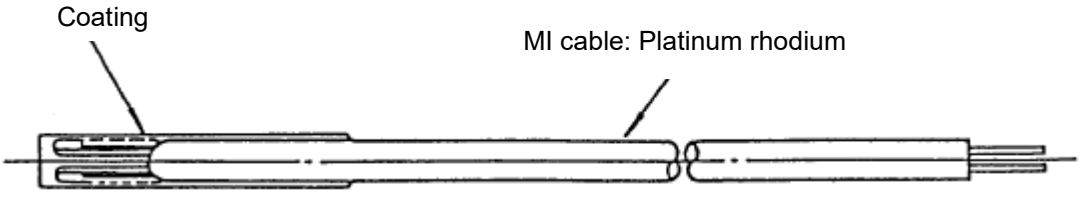
of Temperature Sensor N1043/501



External Structure

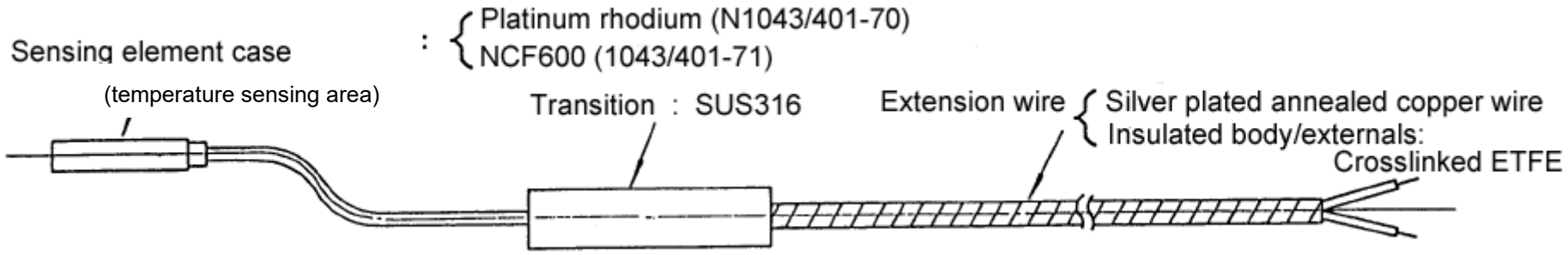


Internal Construction

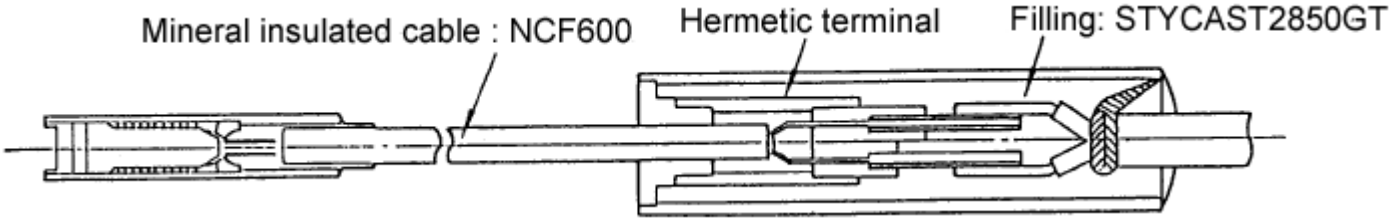


Sensing Elements

Figure 4. Construction of Probe Sheath Type Temperature Sensor (N1043/301)

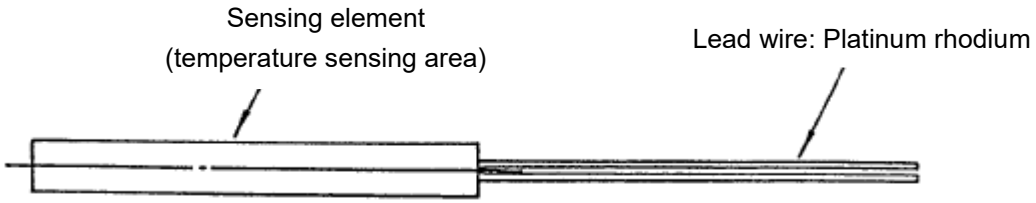


External Structure



Internal Construction

Figure 5. Construction of Extension Wire Sheath Temperature Sensor (N1043/401)



External View

Sensing Element

Figure 6. Construction of Surface Type Temperature Sensor (N1043/501)

3. USAGE

3.1 Specification

The specification is shown in Table 3.

Table 3. Specification

Part number	Temperature measurement range (Operating temperature range)	Max. operating pressure	Power supply	Nominal resistance
N1043/301-50-132-1	−260 to +135°C (−260 to +135°C)	6.865MPaG {70kgf/cm^{2}G}	Max. 5mA	1000 ± 2Ω (at 0°C)
N1043/301-50-232-1	−196 to +135°C (−260 to +135°C)			
N1043/401-70-902-1	−18 to +930°C (−60 to +980°C) The operating temperature range for transition and extension wire parts is −30 to +121°C	Ambient pressure	Max. 5mA	100 ± 0.5Ω (at 0°C) except for extension wire resistance
N1043/401-70-902-2				
N1043/401-70-902-3				
N1043/401-71-702-1	−80 to +430°C (−120 to +430°C) The operating temperature range for transition and extension wire parts is −40 to +150°C	Ambient pressure	Max. 5mA	500 ± 2.5Ω (at 0°C) except for extension wire resistance
N1043/501-90-300	−260 to +400°C (−260 to +400°C)	Ambient pressure	Max. 5mA	2000 ± 4Ω (at 0°C)
N1043/501-90-400	−196 to +400°C (−260 to +400°C)			
N1043/501-91-600	−183 to +400°C (−196 to +400°C)			500 ± 1Ω (at 0°C)
N1043/501-91-700	−196 to +400°C (−196 to +400°C)			

3.2 Installation Method

The following products were installed reflecting the actual usage for the environmental test of the qualification test.

a) Probe type and probe sheath type (N1043/301)

These sensors shall be installed with screws. There were no supports for probe and housing parts. Seal materials and torques used are shown in Table 4.

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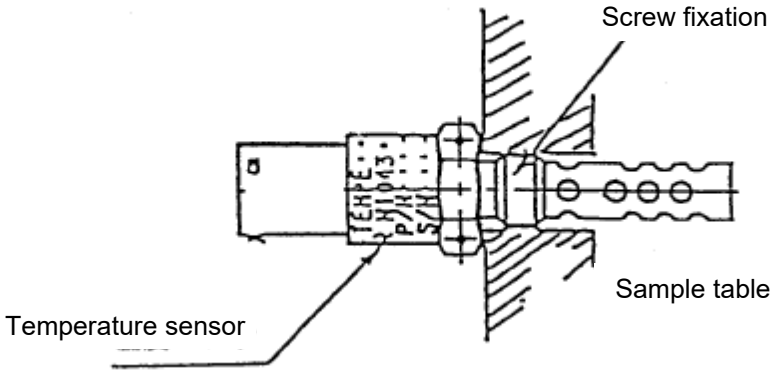
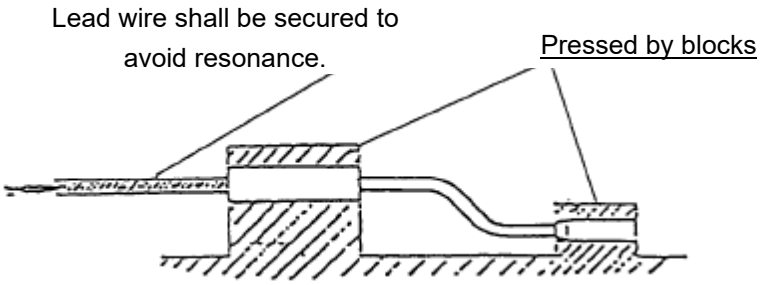
Table 4. Seal Materials and Torques

Seal type	O-ring	Boss seals	
		Metal O-ring	K-seal
Seal material / Screw type	Viton	SUS321.302 (Ni plating)	SUS304 (Silver plating)
MS33656E4	15.3 to 17.0N•m {156 to 173 kgf•cm}		31.1 to 36.7N•m {317 to 374 kgf•cm}
MS33656E8	50.8 to 56.6N•m {518 to 576 kgf•cm}		68.9 to 80.2N•m {703 to 818 kgf•cm}



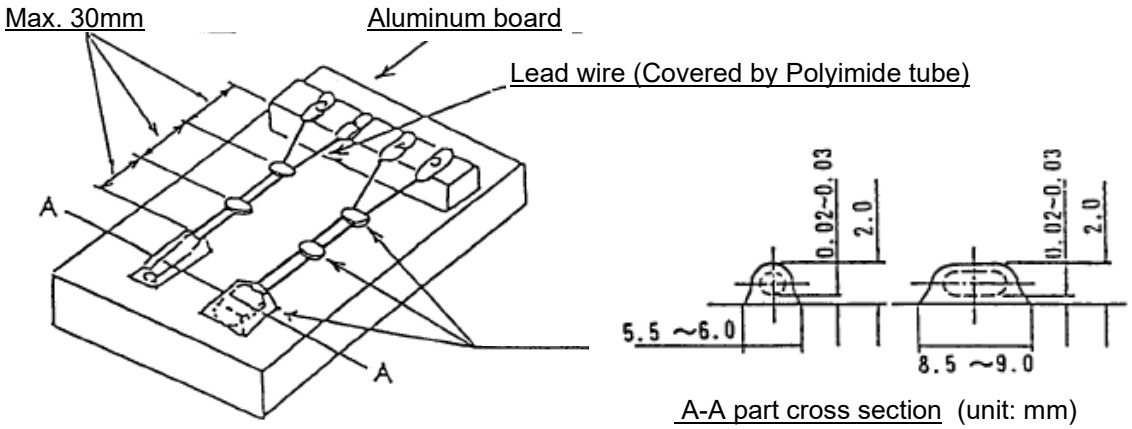
b) Extension wire sheath type (N1043/401)
The transition joint and the sensing element were evenly pressed with metal blocks. Bending of MI cable shall be limited to once and repeated bending is not allowed. If other installation methods such as cantilever installation are used to install the temperature sensor, perform advance evaluation such as evaluation on environmental conditions.



c) Surface type (N1043/501)
- The surface type was mounted on an aluminum board with RTV-566 (Silicone type adhesives) as shown below. Bonding was performed as shown below in consideration of NASDA CR68805 Bonding technique references.
- Ecobond 285FR (Epoxy adhesives) was used as shown below and evaluated. The coating surface on the sensing element was damaged after 10 cycles of temperature cycling between room temperature and −196°C (LN_2 temperature).

However, the coating was not damaged after 20 cycles of temperature cycling between room temperature and −80°C.

- Therefore, bonding using Epoxy adhesives shall be performed after advance evaluation is performed for operating temperature range and temperature change rate.



A-A part cross section (unit: mm)

3.3 Error Factors at Measurement

a) Influence of extension wires

When measured with 2-wire extension wire type, measurement errors may occur due to the extension wires, resistance of MI cable and temperature gradient. Resistance (a total resistance of hot and return lines) and temperature coefficient per unit length of extension wire and MI cable are shown in Table 5.

Table 5. Resistance and Temperature Coefficient of Extension Wire and MI Cable

Item		Resistance (at 20°C)	Temperature coefficient (at 20°C)
Extension wire	N1043/201-22-510	0.11Ω/m	0.0039°C^{-1}
	N1043/401	16 Ω/m	0.0039°C^{-1}
MI cable	N1043/401	5.2 Ω/m	0.0020°C^{-1}

b) Vacuum environment N1043/501 (surface type) is installed with adhesive on a location for measurement. Under vacuum conditions, sensors are in adiabatic conditions in which heats can be transferred between the sensors and measurement targets only through adhesive. The response characteristics become more sensitive than in atmosphere with respect to type, thickness, and amount of the adhesive. Therefore, advance evaluation is recommended for measuring in the fast temperature changing environment or when there is disturbance such as radiation heat transfer.

4. CHARACTERISTIC IN NORMAL ENVIRONMENTAL CONDITIONS

The qualification test results under the operating conditions specified in NASDA-QTS-1043 are summarized in Table 6.

Table 6. Results of Qualification Test

Item	Characteristics
Liquid compatibility	Oxygen compatibility is KEL-F or better.
Leakage	Pressure cell: 1.4×10^{-9} Pa•m/s {1.4×10^{-8} sccs} as a maximum. Non pressure cell: 6.5×10^{-10} Pa•m/s {6.5×10^{-9} sccs} as a maximum.
Over current	Over current of 20mA DC for 10minutes: no open circuiting occurred Temperature resistance characteristic change after application: 1/10 as a maximum of the required repeatability.
Insulation resistance	100MΩ as a minimum in atmosphere or in water (N1043/501 only).
Dielectric withstanding voltage	Leak current is max. 0.1mA and no breakage occurred by applying 100 V AC.
Repeatability	Resistance characteristic change (N1043/401): 2/3 as a maximum of the repeatability requirement. Resistance characteristic change (other sensors): 1/10 as a maximum of the repeatability. requirement.
Thermo-electromotive force	11.1μV as a maximum.
Dynamic pressure	No instantaneous signal interruption occurred during each environmental test. After the test the samples met the requirements for external visual inspection and leakage. Temperature-resistance characteristic changes were 1/10 as a maximum of the repeatability requirement.
Sine vibration	
Random vibration	
Shock	
Radiation hardness	After the test. the samples met the requirements for external visual inspection and leakage. Temperature-resistance characteristic changes were 1/10 as a maximum of the repeatability requirements.

5. CHARACTERISTIC IN VARIOUS ENVIRONMENTAL CONDITIONS

To understand characteristics in different environments, environmental tests shown in Table 7 were conducted. The test results are provided below. The test to understand the limit strength of the sensor is described in paragraph 6.

Table 7. Characteristic in Various Environmental Conditions

Item	Type	Environmental test level
Exposure to high temperature	N1043/401	500°C x 500 hours. 750°C x 500 hours
Insulation resistance (80,000ft)	N1043/301 N1043/401 N1043/501	50 VDC
Storage life(1)	N1043/401-71	150°C x 336 hours
Operating life(1)	N1043/401-71	Exposure to high temperature: 430°C x 500 hours Temperature cycling; Room temperature to 430°C x 2,000 times Room temperature to 235°C x 18,000 times

Note (1): This item was added because the results met the requirement of the specification with a sufficient margin.

5.1 Exposure to High Temperature

The high temperature sensors were exposed to realistic operating temperatures. The results are shown in Table 8.

Table 8. Exposure to High Temperature

Type	Test conditions	Test results		
		Repeatability		Externals, insulation resistance, leakage (for parts other than the pressure cell) proof pressure
		Change at 0°C	Change at 100°C	
N1043/401	At 500°C for 500 hours	-0.19°C	-0.20°C	Met the requirements specified in NASDA-QTS-1043
	At 700°C for 500 hours	-1.02°C	-1.08°C	

5.2 Insulation Resistance (Altitude 24384m)

50 VDC was applied to the temperature sensor under a reduced pressure equivalent to that of 24384m (80,000ft) in altitude at room temperature. The result of insulation resistance measured was 10^4MΩ to 10^6MΩ.

5.3 Storage Life

Storage life data for N1043/401-71 is shown in Table 9.

Table 9. Storage Life

Test condition	Test result	
	Calibrated temperature	Result of calibrated temperature
150°C as a minimum for 336 hours	−60°C	−0.01 to +0.01°C
	0° C	−0.003 to +0.001°C
	+100°C	−0.003 to +0.001°C
	+420°C	−0.03 to −0.01°C

5.4 Operating Life

Operating life data for N1043/401-71 is shown in Table 10.

Table 10. Operating Life

Item	Test condition	Test result
Exposure to high temperature	430°C x 500 hours	0°C ; −0.010 to +0.002Ω +100°C; −0.006 to +0.002Ω
Temperature cycling	Room temperature to 430°C x 2,000 times	0°C ; +0.02 to +0.03°C +100°C; −0.01 to +0.03°C
	Room temperature to 235°C x 18,000 times	0°C ; +0.002 to +0.005°C +100°C; +0.003 to +0.01°C

5.5 Outgassing

The cables (MIL standards, JUNFLON® cross-linked ETFE shield cable) used for N1043/401 are shown in Table 11.

Table 11. Outgassing

No.	Material	TML(%)	CVCM(%)	WVR(%)	Pass/fail
1	Cross-linked ETFE (jacket)	0.166 ±0.001	0.010 ±0.001	0.010 ±0.001	Pass
2	Cross-linked ETFE (wire covering: white)	0.182 ±0.002	0.010 ±0.001	0.010 ±0.001	Pass
3	Cross-linked ETFE (wire covering: blue)	0.234 ±0.003	0.013 ±0.002	0.013 ±0.002	Pass

TML: Total Mass Loss

CVCM: Collected Condensable Material

WVR: Water Vapor Regained

Pass/Fail: NASA recommended value (any values which met TML and CVCM of 1.0% or less were passing values)

6. ENVIRONMENTAL LIMITS

The environmental limit tests were performed. The results are shown in the following table.

Table 12. Environmental Limit

Item	Type	Environmental limit
Over current	N1043/301 N1043/401 N1043/501	Fusing limit
Extension wire connection strength	N1043/401	Rupture limit
Lead wire strength	N1043/501	Rupture limit
Humidity	N1043/401-71	At 130°C,100% humidity for 24 hours
Exposure to constant temperature and humidity	N1043/401-71	At 40°C, 90 to 95% humidity for 720 hours

6.1 Over Current

Over current limit and melted locations are shown in Table 13.

a) Test condition: Sensing element in quiet atmosphere.

Table 13. Over Current

Type	Maximum current	Melted location
N1043/301	38mA	Wire wound part
N1043/401	131mA	Wire wound part
N1043/501-91-600	56mA	Wire wound part

6.2 Strength of the Extended Wires

The strength of the extended wires is shown in Table 14. The results indicate that the products met the 22.6±0.981N {2.3 ±0.1kgf} specified in paragraph 3.6.3.1 of NASDA-QTS-1043 with a sufficient margin. However, use caution in installation and usage.

Table 14. Strength of the Extended Wires

Type	Rupture limit
N1043/401	309N {31.5 kgf}

6.3 Lead Wire Strength

The lead wire strength is shown in Table 15. Use caution in installation and usage.

Table 15. Lead Wire Strength

Type	Rupture limit
N1043/501	25.5N {2.6kgf}

6.4 Humidity Resistance

The humidity resistance test was performed under the conditions specified in Table 16 for each sensor type of N1043-401-71. The test results met the requirements specified in Externals, Insulation resistance and Repeatability of paragraphs 3.6.2.1 (2), 3.6.2.4 and 3.6.3.4, respectively.

Table 16. Test Condition of Humidity Resistance

Test temperature	130±2°C
Humidity	100%
Pressure	265±26kPaA {2.7±0.27kg/cm^{2}A}
Duration	$24\,^{+1}_{-0}$ hours

6.5 Exposure to Constant Temperature and Humidity

The test was performed by exposing each sensor type of N1043/401-71 to constant temperature and humidity environments under the condition specified in Table 17. The test results met the requirements of Fundamental Characteristics specified in Table 4 and paragraph 3.6.3.4 Repeatability of NASDA-QTS-1043.

Table 17. Test Condition of Exposure to Constant Temperature and Humidity

Test temperature	40±2°C
Humidity	$93\,^{+2}_{-3}$ %
Pressure	Ambient pressure
Duration	$720\,^{+10}_{-0}$ hours (30 days)

7. RELIABILITY

7.1 Life Test Conditions

The accelerated life test conditions (temperature and time) for Storage test and Operating life test at constant-temperature were determined based on the following reasons.

(1) Storage life test

Accelerated life test conditions were determined in accordance with the Arrhenius law using the commonly-used storage temperature of +30°C as the reference temperature to satisfy the storage life test requirements of 7-year storage at the temperature range of −30 to +60°C. For each type of products, the test temperature and time were determined in consideration of the temperature limit of the materials and the acceleration test period to be 100 hours as a minimum.

(2) Operating life test and exposure to high temperature

The test conditions for N1043/301,501 for satellite applications were determined for external applications (−196 to +120°C) and internal applications (−40 to +85°C) separately in consideration of the actual operating environment to satisfy the 10-year life requirement. The conditions for the high temperature type (N1043/401) were determined based on the actually-used temperature and duration.

(3) Arrhenius law and activation energy

(a) Arrhenius law

The actual test duration was calculated using the following equation.

$$AL = EXP\left\{ \frac{E}{k}\left(\frac{1}{T_0} - \frac{1}{T_1}\right) \right\}$$

$$H = AL \times H_0$$

AL: Acceleration factor
E: Activation Energy (eV)
K: Boltzmann constant 8.62 x 10^{-5} (eV/K)
T_0: Reference temperature (K)
T_1: Actual test temperature (K)
H: Duration equivalent to the life
H_0: Actual test duration

(b) Activation energy

Based on a study result that the insulation resistance degradation of the coating material that secures the platinum resistance wire affects the product's life most significantly, the following activation energies of the coating materials shown in Table 18 were used.

Table 18. Activation Energy of the Coating Materials

High temperature product (N1043/401)	General-use products (except for the types specified in the left column)
0.5eV	0.73eV

7.2 Failure Rate Prediction

Failure rates were calculated based on various data resulting from the development of temperature sensor and accumulated test durations as shown in Table 19. The reliability level shall be 90%.

Table 19. Failure Rate

Item \ Sensor construction	Failure rate (x 10^{-6}/h)				
	Long-term assured type	General use type		High temperature type	
	Surface-type	Probe type	Extended-wire	Probe type	Extended-wire
Actual failure rate (At the completion of the qualification test)	0.758	0.176	1.390	2.359	5.322
Predicted failure rate (At the completion of the qualification test)	0.036	0.080	0.060	0.120	0.074

7.3 Possible Failure Mode

The possible failure mode shall be shown in Table 20.

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Table 20. Possible Failure Mode

Failure mode (P: Probe type / E : Extende-wire / S : Surface type)	Failure cause	Impact
(1) Sensing element		
Platinum wire open circuit	Excessive shock, over current	High
Platinum wire short circuit	Excessive shock, over current	High
Cracks and flaking of coating	Excessive temperature cycling, thermal shock	Medium
(2) MI cable		
Cracks with pressure seal	Excessive shock	High
Connection failure	Connection failure, vibration, shock	Medium
(3) Transition		
Cracks with fillings (P, E)	Thermal shock	Low
Damage of insulation tube (P, E)	Excessive shock	Low
(4) Connection		
Leaking of connector (P)	Excessive temperature	Low
Connection failure of connector (P)	Blazing failure, excessive vibration	Medium
Connection failure of extended wire (E)	Blazing failure, excessive vibration	High
Open circuit of lead wire (S)	Excessive pull	High
Short circuit of lead wire (S)	Excessive voltage	High
(5) Mounting		
Leaking from mounting screw (P)	Improper mounting torque	High
Missing of metal fixture (E)	Mounting failure, vibration	High
Separation of sensor adhesion (S)	Temperature, vibration, adhesive	High

8. NOTE FOR HANDLING AND STORAGE CONDITIONS

(1) Use caution not to apply any local force to the sensing element.

(2) Avoid the following practices which could damage lead wires of the surface type temperature sensor (N1043/501).

(a) Bending of lead wires at a point within 2mm from the sensing element.

(b) Bending of lead wires at a radius less than 1mm.

(3) Check the cleanliness of the area where the package is opened. Do not touch the products with bare hands after opening the package. An example of cleanliness proof marking on contamination prevention bag is shown in Figure 7.

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Clean Part for Liquid Oxygen System

Applicable clean spec.: AU-050-L020-11

JAXA part number: N1043/301-50-132-1

Product name: Temperature sensor (probe type, element type)

Serial number:

Manufacture date: MO, DAY, 19XX

Cleaned by: Okazaki Manufacturing Company Akashi factory

Cleaning operator: Cleaning inspector:

Registered inspector of Okazaki Manufacturing Company:

Open the package immediately before installation or in a clean room only.

Figure 7. An Example of Cleanliness Proof Marking on Contamination Prevention Bag

(4) Follow the instructions for handling organic materials such as polyimide wires and fluorine resin wires used as extended wires. Avoid contacting hydrazine, alkali or acid.

(5) It is desirable to store the platinum temperature sensor for space use in a dry, ambient condition at room temperature in atmosphere.

9. NOTES

The following conditions shall be specified to procure the products.

(a) Length of MI cable and extended wires

The length of MI cable and extended wires shall be specified within the qualification coverage certified in the applicable specification. JAXA QTS-2180 part number shall be provided.

(b) Bending of MI cable

Bending shape shall be specified when bending of MI cable is required.

10. OTHERS

(a) The contact information on this data sheet is as follows:

The certified manufacturer: Mitsubishi Heavy Industries, LTD.

Contact: Please contact us via the following URL.

https://www.mhi.com/products/space/temperature_sensor.html

(b) Example of the package marking

An example of markings for tag and shipping container is shown in Figure 8.

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TEMPERATURE SENSOR	
JAXA part number:	N1043/301-50-132-1
MHI part number:	P/N 31DS07010-183
Serial number:	S/N
QML Manufacturer:	Mitsubishi Heavy Industries, LTD.
Supplier:	Okazaki Manufacturing Company
Packing date:	August, 1989

Figure 8. Example of the package marking