

110 ohm - 75 ohm Impedance Transformers

Passively convert AES/EBU digital audio signals from 110Ω/XLR3 output to a 75Ω BNC coaxial cable and then back again to a 110Ω/XLR3 input.

— Key Features and Benefits

- SMPTE 276M and AES3 transmission standards
- Coaxial transmission of 2 channel digital audio
- Allows longer cable runs than 110 ohm twisted pair
- AES/EBU signal distribution using Canare 75 ohm video patchbays

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BCJ-XJ-TRC, BCJ-XP-TRC, BCJ-XJ-A10TRC, XJ3F-TRC-BCJ, BCJ-TRC-XP3M



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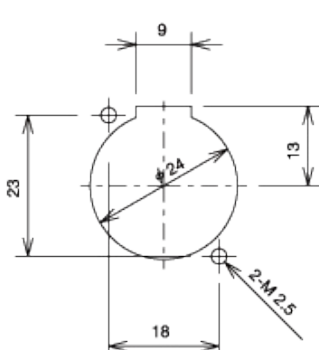
// Adapter Type

Model	Description	Standard package
BCJ-XJ-TRC	XLR3 (F) - BNC Jack	1 pc
BCJ-XP-TRC	XLR3 (M) - BNC Jack	1 pc
BCJ-XJ-A10TRC	XLR3 (F) - BNC Jack, 10dB Attenuation Pad	1 pc

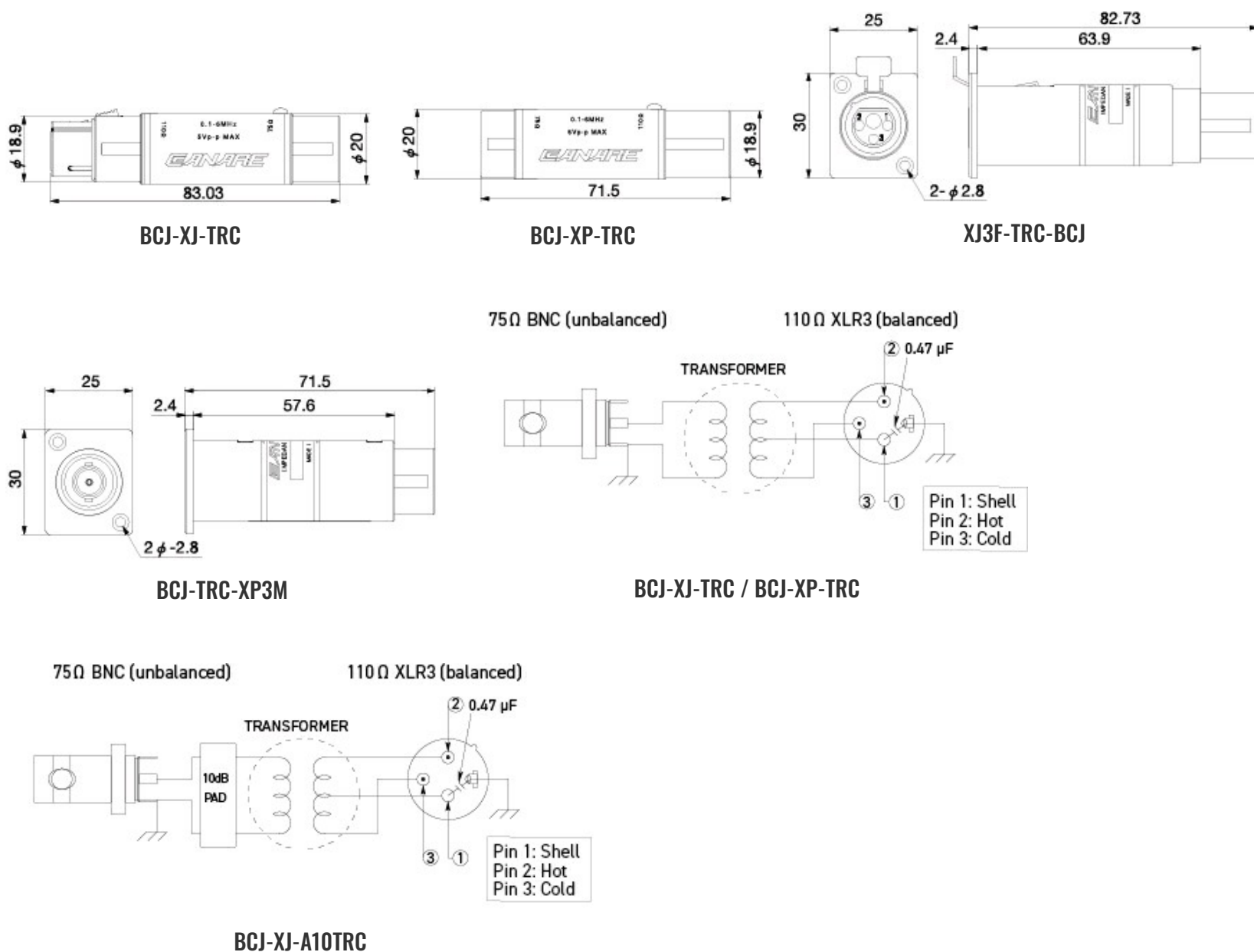
// Panel Mount Type

Model	Description (Front - Back)	Flange Type	Standard package
XJ3F-TRC-BCJ	XLR3 (F) - BNC Jack	ITT XLR-F77	1 pc
XJ3M-TRC-BCJ	XLR3 (M) - BNC Jack		1 pc
BCJ-TRC-XP3F	BNC Jack - XLR (F)		1 pc
BCJ-TRC-XP3M	BNC Jack - XLR (M)		1 pc
XJ3F-A10TRC-BCJ	XLR3 (F) - BNC Jack, 10dB Attenuation Pad		1 pc
BCJ-A10TRC-XP3F	BNC Jack - XLR3 (F), 10dB Attenuation Pad		1 pc

< Panel Hole Dimensions >



< Dimensions >



110 ohm - 75 ohm Impedance Transformer: Input/Output Level Performance

BCJ-XJ-TRC, BCJ-XP-TRC		BCJ-XJ-A10TRC	
AES/EBU Transmitter (V)	Transformer Out (V)	AES/EBU Transmitter (V)	Transformer Out -10dB Pad (V)
2.0 V	1.60 V	2.0 V	0.50 V
3.0 V	2.39 V	3.0 V	0.75 V
4.0 V	3.18 V	4.0 V	1.01 V
4.5 V	3.60 V	4.5 V	1.13 V
5.0 V	3.98 V	5.0 V	1.26 V
6.0 V	4.78 V	6.0 V	1.51 V
7.0 V	5.58 V	7.0 V	1.76 V
8.0 V	6.38 V	8.0 V	2.02 V
9.0 V	7.18 V	9.0 V	2.27 V
10.0 V	7.98 V	10.0 V	2.52 V

Technical Note

Voltage Standing - wave Ratio (VSWR) and Return Loss

Terminating the receiving end of a limited length coaxial cable using a resistance value not equal to its characteristic impedance creates a reflected wave that returns back down the cable to the sending end. The result is interference developing between the travelling wave and the return wave which results in a standing wave that causes voltage levels to fluctuate. The degree to which terminating resistance matches the characteristic impedance is indicated using the VSWR or voltage standing-wave ratio standard shown in Fig. 1. Going hand in hand with the VSWR ratio is the return loss factor which measures the size of the reflected wave current in relation to the travelling wave current. (See Fig. 2)

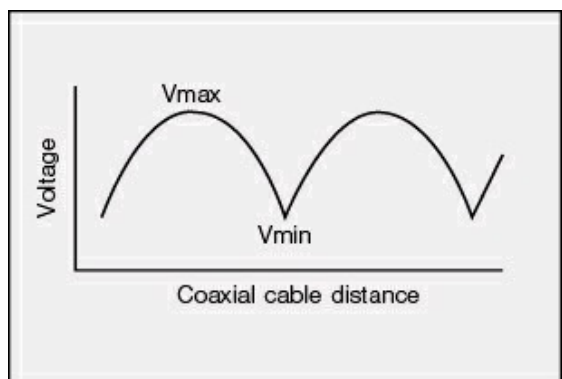


Fig. 1 Voltage Distribution Over Coaxial Cable

VSWR	Return Loss (dB)
2	9.54
1.5	13.98
1.2	20.83
1.1	26.44
1.05	32.26
1.02	40.09
1.01	46.06

Fig. 2 VSWR to Return Loss Conversion Table

PRODUCT SPECIFICATIONS

(BCJ-XJ-TRC)

SAB424

Ver. 1.0

CANARE ELECTRIC CO., LTD

1. Scope This product specification covers the performance of CANARE 110Ω-75Ω impedance transformer.

2. General Specifications

- (1) **Product name** 110Ω-75Ω impedance transformer
 (2) **Model name** BCJ-XJ-TRC
 (3) **Connector** XLA(1st pin: to body, 2nd pin: hot, 3rd pin: cold)
 BNC (CANARE) center contact: hot
 (4) **Nominal impedance** XLA: 110Ω balance, BNC: 75Ω unbalanced
 (5) **Construction** As shown in the drawing (BL424).
 (6) **Weight** Approx 48g
 (7) **Designation** Model name (BCJ-XJ-TRC) and brand name (CANARE) on the label.
 (8) **Packaging** 1pc/package (150 x 50 x 30mm)

3. Rating

- (1) **operating frequency range** 0.1MHz ~ 6MHz
 (2) **Maximum voltage** 5Vp-p
 (3) **Operating temperature** -25 °C ~ +85 °C

4. Characteristics

4.1 Electrical characteristics As shown in Table 1

Table 1

Items	Specified values	Test methods
Contact resistance	BNC: Between center contacts: 6mΩ or less Between external contacts: 3mΩ or less XLA: 10mΩ or less	Measurement shall be made between the contacts, with engaging a plug and a receptacle. (1kHz:1mA a.c.)
Insertion loss	0.3dB or less	Measuring attenuation value between XLA and BNC.
Voltage standing wave ratio(V.S.W.R)	1.1 or less	Terminated with 75Ω and 110Ω. The measurement frequency: 0.1MHz ~ 6MHz

4.2 Mechanical characteristics As shown in Table 2

Table 2

Items	Specified values	Test methods
Intermatability	To be engaged without any abnormality.	The receptacle and applicable plug shall be engaged.
Female contact retention force	BNC: 1.5 ~ 4.0N XLA: 0.8 ~ 22N	Following JIS C 5412 pin gauge (Fig.1) shall be inserted the female contact and measurement shall be made. Following pin gauge (φ2.362+0.003, -0) shall be inserted the female contact and measurement shall be made.
Strength of coupling mechanism	Body shall not be disconnected or no deformation shall be made.	BNC: The plug and a receptacle shall be engaged, after which tensile strength of 245N and rotation strength of 2.45N·m shall be applied for 1 min. XLA: The plug and a receptacle shall be engaged, after which tensile strength of 98N shall be applied for 1 min.
Mechanical endurance	Contact resistance: 10mΩ or less	The endurance test consists of repeated engagement and separation of connector pairs. BNC: The number of operations shall be 5000 cycles. XLA: The number of operations shall be 500 cycles.

4.3 Environmental characteristics As shown in Table 3

Table 3

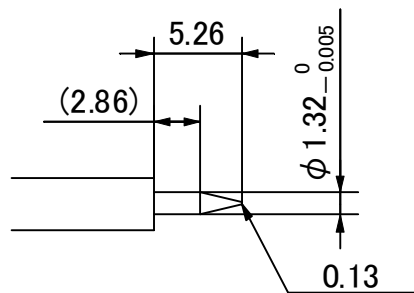
Items	Specified values	Test methods
Change of temperature	Without any abnormality	Performs 5 cycles of changing temperature. (cycle process : -25 °C for 30min → ambient temperature for 15min → +85 °C for 30min → ambient temperature for 15min)

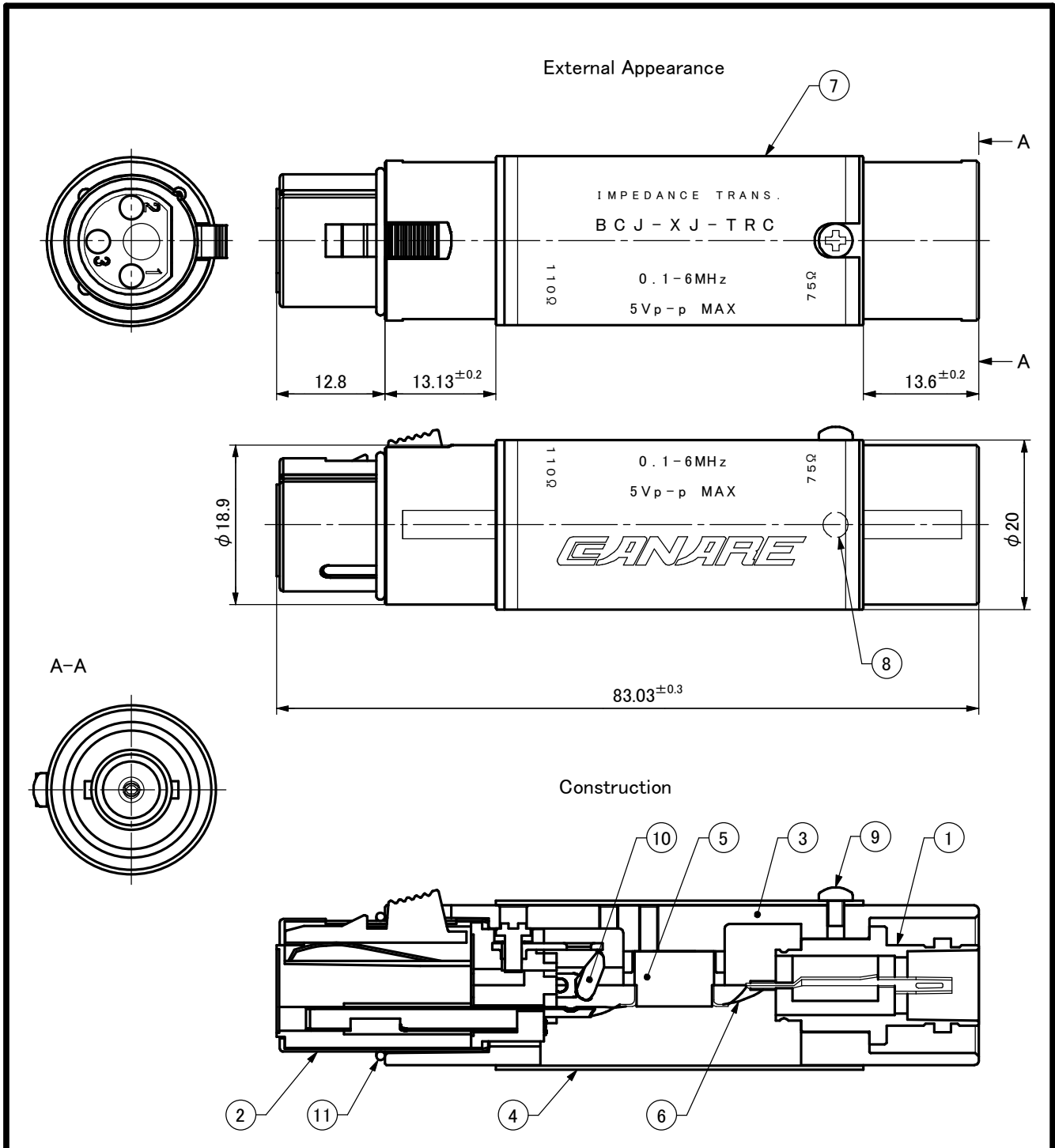
5. Measurement conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows: Ambient temperature (15 °C to 35 °C), Relative humidity (25% to 75%), Air pressure (86kPa to 106kPa). If there is any doubt about the results, measurements shall be made within the following limits: Ambient temperature (20±1 °C), Relative humidity (63% to 67%), Air pressure (86kPa to 106kPa).

Fig.1

Unit: mm





11	O-ring	1	NBR	—					
10	Spring Ceramic Condenser	1	0.47 μ F	—					
9	Cross Recessed Pan Head Screw M2x3	1	Steel	Nickel Plating					
8	Hexagon Socket Set Screw M3x4	2	Stainless Steel	—					
7	Label	1	Laminated Aluminium Sheet	—					
6	Wire	5	PE Insulated Wire	—					
5	Transformer	1	—	—					
4	Shield Cover	1	Brass	Nickel Plating					
3	Body	1	Aluminum Alloy Die Casting	Nickel Plating					
2	XLA Connector (Female)	1	—	—					
1	BNC Connector	1	—	—					
No.	Name of Parts	Pc(s).	Material	End Finish					
Title	110 Ω - 75 Ω	PJTN	Unit	Sc.	Tol.	Date	Ver. 1.0	Model	No.
IMPEDANCE TRANS.			mm	√ 2:1	±0.1	2011-09-27		BCJ-XJ-TRC	BL424

PRODUCT SPECIFICATIONS

(BCJ-XP-TRC)

SAB423

Ver. 1.0

CANARE ELECTRIC CO., LTD

1. Scope This product specification covers the performance of CANARE 110Ω-75Ω impedance transformer.

2. General Specifications

- (1) **Product name** 110Ω-75Ω impedance transformer
 (2) **Model name** BCJ-XP-TRC
 (3) **Connector** XLA (1st pin: to body, 2nd pin: hot, 3rd pin: cold)
 BNC (CANARE) center contact: hot
 (4) **Nominal impedance** XLA: 110Ω balance, BNC: 75Ω unbalanced
 (5) **Construction** As shown in the drawing (BL423).
 (6) **Weight** Approx 42g
 (7) **Designation** Model name (BCJ-XP-TRC) and brand name (CANARE) on the label.
 (8) **Packaging** 1pc/package (150 x 50 x 30mm)

3. Rating

- (1) **Operating frequency range** 0.1MHz ~ 6MHz
 (2) **Maximum voltage** 5Vp-p
 (3) **Operating temperature** -25 °C ~ +85 °C

4. Characteristics

4.1 Electrical characteristics As shown in Table 1

Table 1

Items	Specified values	Test methods
Contact resistance	BNC: Between center contacts: 6mΩ or less Between external contacts: 3mΩ or less XLA: 10mΩ or less	Measurement shall be made between the contacts, with engaging a plug and a receptacle. (1kHz:1mA a.c.)
Insertion loss	0.3dB or less	Measuring attenuation value between XLA and BNC.
Voltage standing wave ratio(V.S.W.R)	1.1 or less	Terminated with 75Ω and 110Ω. The measurement frequency: 0.1MHz ~ 6MHz

4.2 Mechanical characteristics As shown in Table 2

Table 2

Items	Specified values	Test methods
Intermatability	To be engaged without any abnormality.	The receptacle and applicable plug shall be engaged.
Female contact retention force	BNC: 1.5 ~ 4.0N	Following JIS C 5412 pin gauge (Fig.1) shall be inserted the female contact and measurement shall be made.
Strength of coupling mechanism	Body shall not be disconnected or no deformation shall be made.	BNC: The plug and a receptacle shall be engaged, after which tensile strength of 245N and rotation strength of 2.45N·m shall be applied for 1min. ----- XLA: The plug and a receptacle shall be engaged, after which tensile strength of 98N shall be applied for 1min.
Mechanical endurance	Contact resistance: 10m Ω or less	The endurance test consists of repeated engagement and separation of connector pairs. BNC: The number of operations shall be 5000 cycles. ----- XLA: The number of operations shall be 500 cycles.

4.3 Environmental characteristics As shown in **Table 3****Table 3**

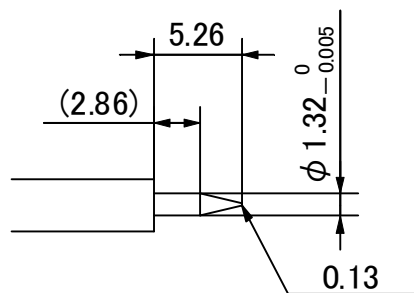
Items	Specified values	Test methods
Change of temperature	Without any abnormality	Performs 5 cycles of changing temperature. (cycle process : -25 °C for 30min → ambient temperature for 15min → +85 °C for 30min → ambient temperature for 15min)

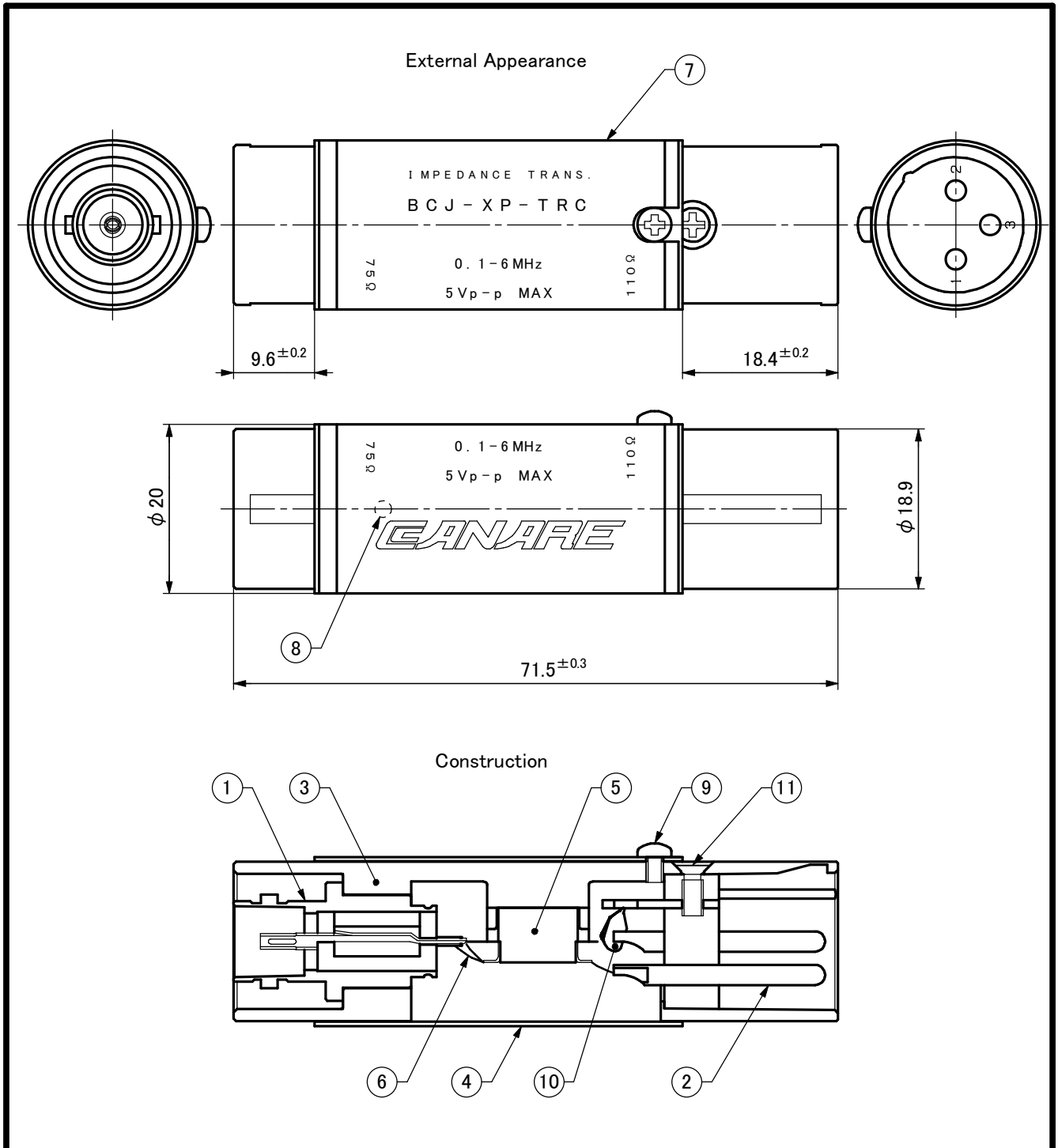
5. Measurement conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows: Ambient temperature (15 °C to 35 °C), Relative humidity (25% to 75%), Air pressure (86kPa to 106kPa). If there is any doubt about the results, measurements shall be made within the following limits: Ambient temperature (20±1 °C), Relative humidity (63% to 67%), Air pressure (86kPa to 106kPa).

Fig.1

Unit: mm





11	Cross Recessed Flat Head Screw M2.5x6	1	Steel	Nickel Plating
10	SpringCeramic Condenser	1	0.47 μ F	—
9	Cross Recessed Pan Head Screw M2x3	1	Steel	Nickel Plating
8	Hexagon Socket Set Screw M3x4	2	Stainless Steel	—
7	Label	1	Laminated Aluminium Sheet	—
6	Wire	5	PE Insulated Wire	—
5	Transformer	1	—	—
4	Shield Cover	1	Brass	Nickel Plating
3	Body	1	Aluminum Alloy Die Casting	Nickel Plating
2	XLA Connector (Male)	1	—	—
1	BNC Connector	1	—	—

No.	Name of Parts	Pc(s).	Material				End Finish		
Title	110 Ω - 75 Ω	PJTN	Unit	Sc.	Tol.	Date	Ver. 1.0	Model	No.
	IMPEDANCE TRANS.		mm	$\sqrt{2}:1$	± 0.1	2011-09-27		BCJ-XP-TRC	BL423

PRODUCT SPECIFICATIONS

(BCJ-XJ-A10TRC)

SAB425

Ver. 1.0

CANARE ELECTRIC CO., LTD

1. Scope This product specification covers the performance of CANARE 110Ω-75Ω impedance transformer.

2. General Specifications

- (1) **Product name** 110Ω-75Ω impedance transformer
 (2) **Model name** BCJ-XJ-A10TRC
 (3) **Connector** XLA (1st pin: to body, 2nd pin: hot, 3rd pin: cold), BNC (CANARE)
 (4) **Nominal impedance** XLA: 110 Ω balance, BNC: 75 Ω unbalanced
 (5) **Construction** As shown in the drawing (BL425).
 (6) **Weight** Approx 48g
 (7) **Designation** Model name (BCJ-XJ-A10TRC 10dB) and brand name (CANARE) on the label.
 (8) **Packaging** 1pc/package (150 x 50 x 30mm)

3. Rating

- (1) **operating frequency range** 0.1MHz ~ 6MHz
 (2) **Maximum voltage** 5Vp-p
 (3) **Operating temperature** -25 °C ~ +85 °C

4. Characteristics

4.1 Electrical characteristics As shown in **Table 1**

Table 1

Items	Specified values	Test methods
Contact resistance	BNC Between external contacts: 3mΩ or less Between center contacts: 6mΩ or less XLA 10mΩ or less	Measurement shall be made between the contacts, with engaging a plug and a receptacle. (1kHz:1mA a.c.)
Insertion Loss	10±0.3dB or less	Measuring attenuation value between XLA and BNC.
Voltage standing wave ratio(V.S.W.R)	1.1 or less	Terminated with 75 Ω. The measurement frequency: 0.1MHz ~ 6MHz

4.2 Mechanical characteristics As shown in **Table 2**

Table 2

Items	Specified values	Test methods
Intermatability	To be engaged without any abnormality.	The receptacle and applicable plug shall be engaged.
Female contact retention force	BNC: 1.5 ~ 4.0N ----- XLA: 0.8 ~ 22N	Following JIS C 5412 pin gauge (Fig.1) shall be inserted the female contact and measurement shall be made. ----- Following pin gauge (φ 2.362+0.003, -0) shall be inserted the female contact and measurement shall be made.
Strength of coupling mechanism	Body shall not be disconnected or no deformation shall be made.	BNC: The plug and a receptacle shall be engaged, after which tensile strength of 250N shall be applied for 1 min. ----- XLA: The plug and a receptacle shall be engaged, after which tensile strength of 100N shall be applied for 1 min.
Mechanical endurance	Contact resistance: 10mΩ or less	The endurance test consists of repeated engagement and separation of connector pairs. BNC: The number of operations shall be 5000 cycles. ----- XLA: The number of operations shall be 500 cycles.

4.3 Environmental characteristics As shown in **Table 3**
Table 3

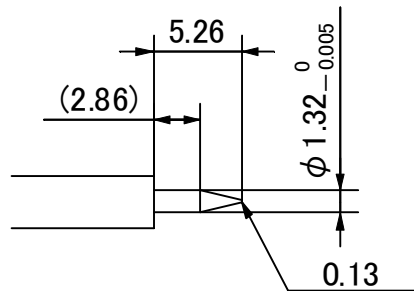
Items	Specified values	Test methods
Change of Temperature (Cycle) -Thermal Shock-	Without any abnormality	Performs 5 cycles of thermal shock (-25 degrees Celsius as low temperature, +85 degrees Celsius as high temperature, 30 minutes in each temperature.) Moving the sample from low to high temperature should be done in a few minutes.

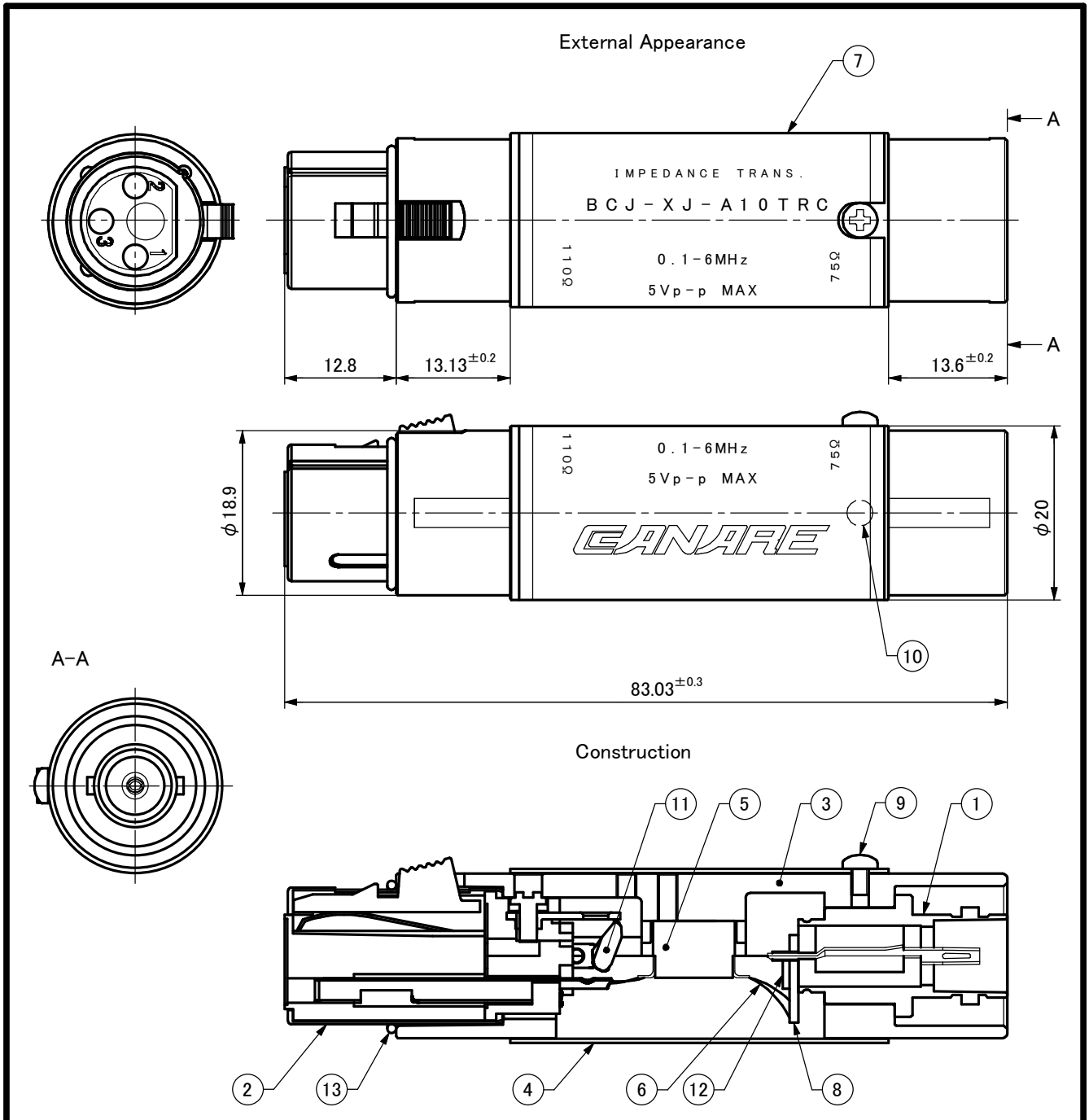
5. Measurement conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows: Ambient temperature (15 °C to 35 °C), Relative humidity (25% to 75%), Air pressure (86kPa to 106kPa). If there is any doubt about the results, measurements shall be made within the following limits: Ambient temperature (20±1 °C), Relative humidity (63% to 67%), Air pressure (86kPa to 106kPa).

Fig.1

Unit: mm





13	O-ring	1	NBR	—
12	Fixed Attenuator	1	75Ω, 10dB	—
11	SpringCeramic Condenser	1	0.47 μF	—
10	Hexagon Socket Set Screw M3x4	2	Stainless Steel	—
9	Cross Recessed Pan Head Screw M2x3	1	Steel	Nickel Plating
8	PCB	1	FR-4	—
7	Label	1	Laminated Aluminium Sheet	—
6	Wire	5	PE Insulated Wire	—
5	Transformer	1	—	—
4	Shield Cover	1	Brass	Nickel Plating
3	Body	1	Aluminum Alloy Die Casting	Nickel Plating
2	XLA Connector (Female)	1	—	—
1	BNC Connector	1	—	—

No.	Name of Parts	Pc(s).	Material				End Finish		
Title	110Ω-75Ω	PJTN	Unit	Sc.	Tol.	Date	Ver. 1.0	Model	No.
	IMPEDANCE TRANS.		mm	√2:1	±0.1	2011-09-27		BCJ-XJ-A10TRC	BL425

PRODUCT SPECIFICATIONS

(XJ3F-TRC-BCJ, BCJ-TRC-XP3F)

SAB426

Ver. 1.0

CANARE ELECTRIC CO., LTD

1. Scope This product specification covers the performance of CANARE 110Ω-75Ω bulkhead impedance transformer.

2. General Specifications

- (1) **Product name** 110Ω-75Ω bulkhead impedance transformer
 (2) **Model name** XJ3F-TRC-BCJ, BCJ-TRC-XP3F
 (3) **Connector** XLA (1st pin: to body, 2nd pin: hot, 3rd pin: cold), BNC (CANARE)
 (4) **Nominal impedance** XLA: 110 Ω balance, BNC: 75 Ω unbalanced
 (5) **Construction** XJ3F-TRC-BCJ: As shown in the drawing (BL426).
 BCJ-TRC-XP3F: As shown in the drawing (BL428).
 (6) **Weight** XJ3F-TRC-BCJ: Approx 95g, BCJ-TRC-XP3F: Approx 100g
 (7) **Designation** XJ3F-TRC-BCJ:
 Model name (XJ3F-TRC-BCJ) and brand name (CANARE) on the label.
 BCJ-TRB-XP3F:
 Model name (BCJ-TRC-XP3F) and brand name (CANARE) on the label.
 (8) **Packaging** 1pc/package (150 x 50 x 30mm)

3. Rating

- (1) **operating frequency range** 0.1MHz ~ 6MHz
 (2) **Maximum voltage** 5Vp-p
 (3) **Operating temperature** -25 °C ~ +85 °C

4. Characteristics

4.1 Electrical characteristics As shown in Table 1

Table 1

Items	Specified values	Test methods
Contact resistance	BNC Between external contacts: 3mΩ or less Between center contacts: 6mΩ or less XLA 10m Ω or less	Measurement shall be made between the contacts, with engaging a plug and a receptacle. (1kHz:1mA a.c.)
Insertion Loss	0.3dB or less	Measuring attenuation value between XLA and BNC.
Voltage standing wave ratio(V.S.W.R)	1.1 or less	Terminated with 75 Ω. The measurement frequency: 0.1MHz ~ 6MHz

4.2 Mechanical characteristics As shown in Table 2

Table 2

Items	Specified values	Test methods
Intermatability	To be engaged without any abnormality.	The receptacle and applicable plug shall be engaged.
Female contact retention force	BNC: 1.5 ~ 4.0N ----- XLA: 0.8 ~ 22N	Following JIS C 5412 pin gauge (Fig.1) shall be inserted the female contact and measurement shall be made. ----- Following pin gauge (ϕ 2.362+0.003, -0) shall be inserted the female contact and measurement shall be made.
Strength of coupling mechanism	Body shall not be disconnected or no deformation shall be made.	BNC: The plug and a receptacle shall be engaged, after which tensile strength of 250N shall be applied for 1 min. ----- XLA: The plug and a receptacle shall be engaged, after which tensile strength of 100N shall be applied for 1 min.
Mechanical endurance	Contact resistance: 10m Ω or less	The endurance test consists of repeated engagement and separation of connector pairs. BNC: The number of operations shall be 5000 cycles. ----- XLA: The number of operations shall be 500 cycles.

4.3 Environmental characteristics As shown in **Table 3**
Table 3

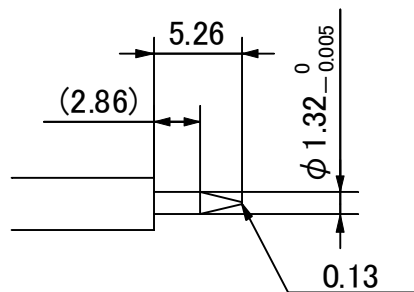
Items	Specified values	Test methods
Change of Temperature (Cycle) -Thermal Shock-	Without any abnormality	Performs 5 cycles of thermal shock (-25 degrees Celsius as low temperature, +85 degrees Celsius as high temperature, 30 minutes in each temperature.) Moving the sample from low to high temperature should be done in a few minutes.

5. Measurement conditions

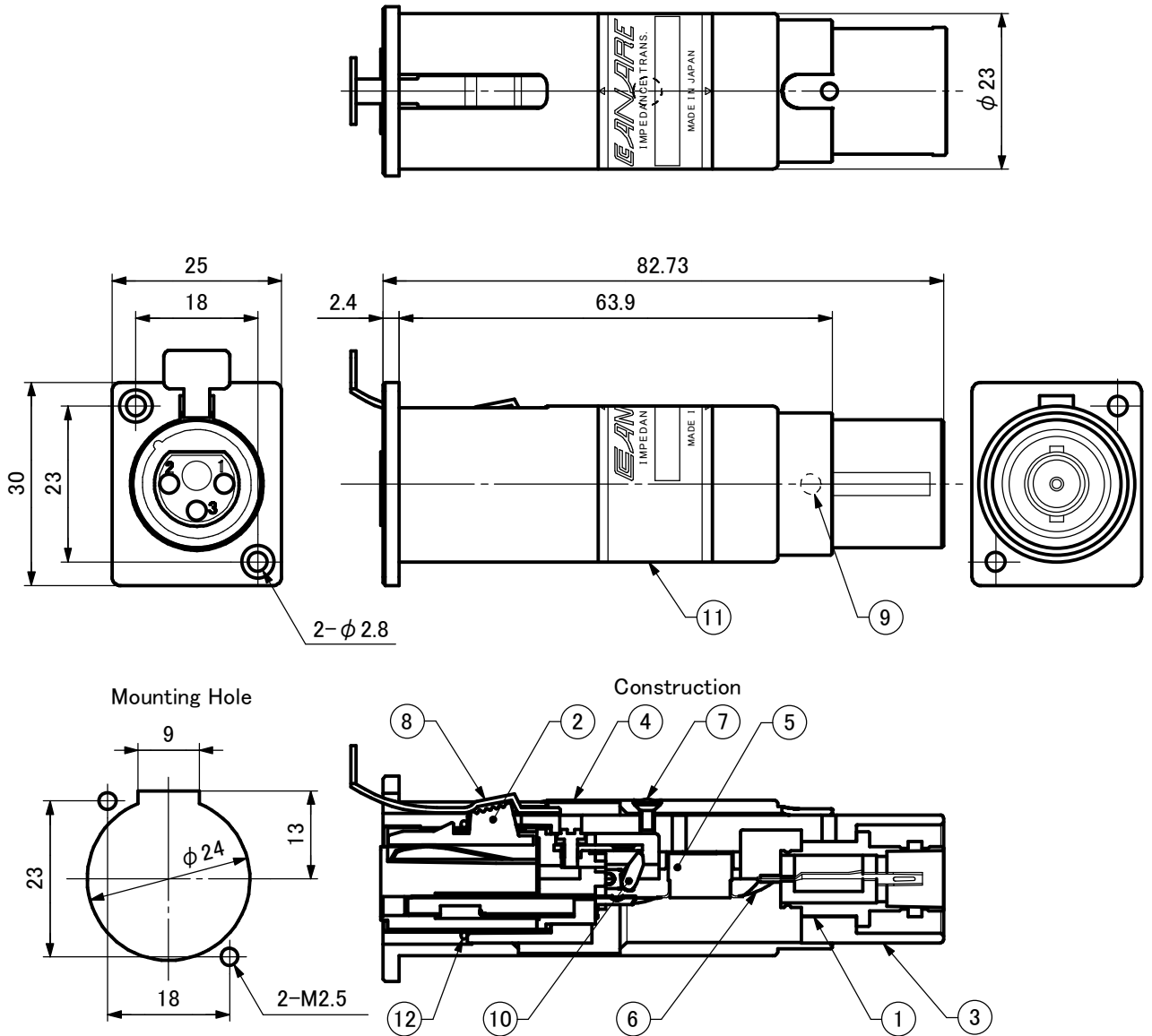
Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows: Ambient temperature (15 °C to 35 °C), Relative humidity (25% to 75%), Air pressure (86kPa to 106kPa). If there is any doubt about the results, measurements shall be made within the following limits: Ambient temperature (20±1 °C), Relative humidity (63% to 67%), Air pressure (86kPa to 106kPa).

Fig.1

Unit: mm



External Appearance



12	O-ring	1	NBR	—
11	Label	1	Laminated Aluminium Sheet	—
10	Ceramic Condenser	1	0.47 μ F	—
9	Hexagon Socket Set Screw M3x4	2	Stainless Steel	—
8	Latch Lever	1	Stainless Steel	Nickel Plating
7	Cross Recessed Flat Head Screw M2x4	1	Steel	Nickel Plating
6	Wire	5	PE Coated Wire	—
5	Transformer	1	—	—
4	Shield Cover	1	Brass	Nickel Plating
3	Body	1	Aluminum Alloy Die Casting	Nickel Plating
2	XLA Connector (Female)	1	—	—
1	BNC Connector	1	—	—
No.	Name of Parts	Pc(s).	Material	Finish
Title	110 Ω -75 Ω BULKHEAD IMPEDANCE TRANS.	PJTN	Unit Sc. Tol. Date Ver. 1.0	Model No.
			mm 1:1 \pm 0.1 2011-07-26	XJ3F-TRC-BCJ BL426

PRODUCT SPECIFICATIONS

(XJ3M-TRC-BCJ, BCJ-TRC-XP3M)

SAB427

Ver. 1.0

CANARE ELECTRIC CO., LTD

1. Scope This product specification covers the performance of CANARE 110Ω-75Ω bulkhead impedance transformer.

2. General Specifications

- (1) **Product name** 110Ω-75Ω bulkhead impedance transformer
 (2) **Model name** XJ3M-TRC-BCJ, BCJ-TRC-XP3M
 (3) **Connector** XLA (1st pin: to body, 2nd pin: hot, 3rd pin: cold), BNC (CANARE)
 (4) **Nominal impedance** XLA: 110 Ω balance, BNC: 75 Ω unbalanced
 (5) **Construction** XJ3M-TRC-BCJ: As shown in the drawing (BL427).
 BCJ-TRC-XP3M: As shown in the drawing (BL429).
 (6) **Weight** Approx 105g
 (7) **Designation** XJ3M-TRC-BCJ:
 Model name (XJ3M-TRC-BCJ) and brand name (CANARE) on the label.
 BCJ-TRC-XP3M:
 Model name (BCJ-TRC-XP3M) and brand name (CANARE) on the label.
 (8) **Packaging** 1pc/package (150 x 50 x 30mm)

3. Rating

- (1) **operating frequency range** 0.1MHz ~ 6MHz
 (2) **Maximum voltage** 5Vp-p
 (3) **Operating temperature** -25 °C ~ +85 °C

4. Characteristics

4.1 Electrical characteristics As shown in **Table 1**

Table 1

Items	Specified values	Test methods
Contact resistance	BNC Between external contacts: 3mΩ or less Between center contacts: 6mΩ or less XLA 10mΩ or less	Measurement shall be made between the contacts, with engaging a plug and a receptacle. (1kHz:1mA a.c.)
Insertion Loss	0.3dB or less	Measuring attenuation value between XLA and BNC.
Voltage standing wave ratio(V.S.W.R)	1.1 or less	Terminated with 75 Ω. The measurement frequency: 0.1MHz ~ 6MHz

4.2 Mechanical characteristics As shown in **Table 2**

Table 2

Items	Specified values	Test methods
Intermatability	To be engaged without any abnormality.	The receptacle and applicable plug shall be engaged.
Female contact retention force	BNC: 1.5 ~ 4.0N	Following JIS C 5412 pin gauge (Fig.1) shall be inserted the female contact and measurement shall be made.
Strength of coupling mechanism	Body shall not be disconnected or no deformation shall be made.	BNC: The plug and a receptacle shall be engaged, after which tensile strength of 250N shall be applied for 1 min. ----- XLA: The plug and a receptacle shall be engaged, after which tensile strength of 100N shall be applied for 1 min.
Mechanical endurance	Contact resistance: 10mΩ or less	The endurance test consists of repeated engagement and separation of connector pairs. BNC: The number of operations shall be 5000 cycles. ----- XLA: The number of operations shall be 500 cycles.

4.3 Environmental characteristics As shown in **Table 3**
Table 3

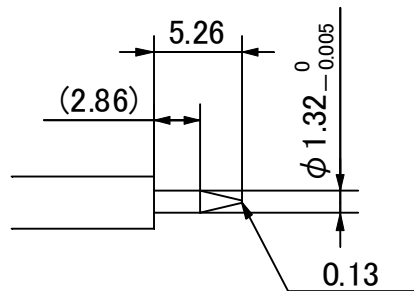
Items	Specified values	Test methods
Change of Temperature (Cycle) -Thermal Shock-	Without any abnormality	Performs 5 cycles of thermal shock (-25 degrees Celsius as low temperature, +85 degrees Celsius as high temperature, 30 minutes in each temperature.) Moving the sample from low to high temperature should be done in a few minutes.

5. Measurement conditions

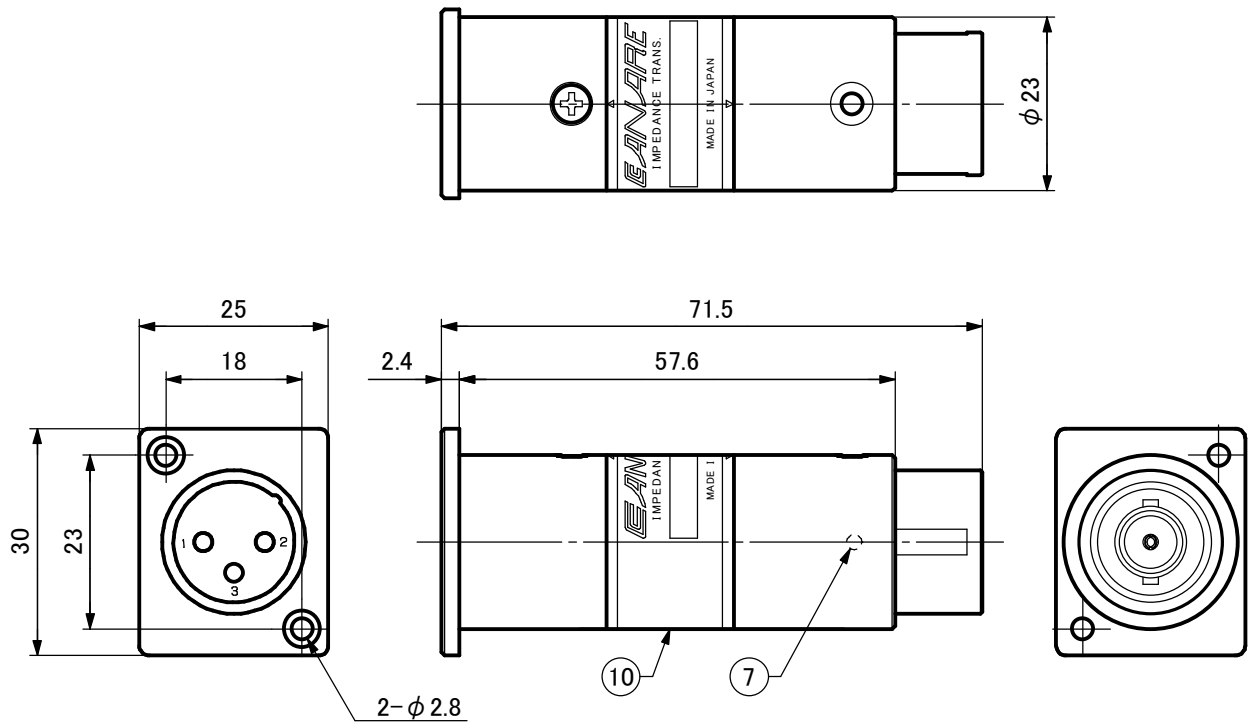
Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows: Ambient temperature (15 °C to 35 °C), Relative humidity (25% to 75%), Air pressure (86kPa to 106kPa). If there is any doubt about the results, measurements shall be made within the following limits: Ambient temperature (20±1 °C), Relative humidity (63% to 67%), Air pressure (86kPa to 106kPa).

Fig.1

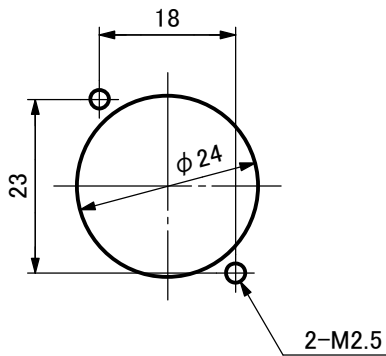
Unit: mm



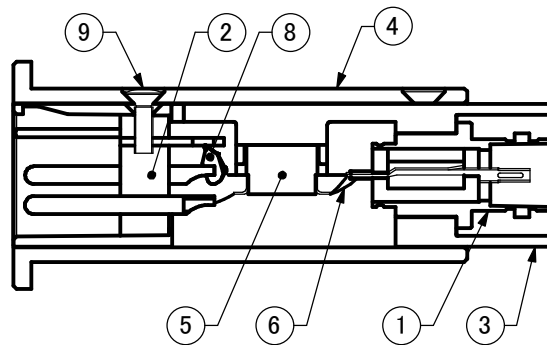
External Appearance



Mounting Hole



Construction



10	Label	1	Laminated Aluminium Sheet	—
9	Cross Recessed Flat Head Screw M2.5x8	1	Steel	Nickel Plating
8	Ceramic Condenser	1	0.47 μ F	—
7	Hexagon Socket Set Screw M3x4	2	Stainless Steel	—
6	Wire	5	PE Coated Wire	—
5	Transformer	1	—	—
4	Shield Cover	1	Brass	Nickel Plating
3	Body	1	Aluminum Alloy Die Casting	Nickel Plating
2	XLA Connector (Male)	1	—	—
1	BNC Connector	1	—	—
No.	Name of Parts	Pc(s).	Material	Finish
Title	110 Ω -75 Ω BULKHEAD IMPEDANCE TRANS.	PJTN	Unit Sc. Tol. Date Ver. 1.0	Model No.
		mm	1:1 \pm 0.1 2011-07-26	XJ3M-TRC-BCJ BL427

PRODUCT SPECIFICATIONS

(XJ3F-TRC-BCJ, BCJ-TRC-XP3F)

SAB426

Ver. 1.0

CANARE ELECTRIC CO., LTD

1. Scope This product specification covers the performance of CANARE 110Ω-75Ω bulkhead impedance transformer.

2. General Specifications

- (1) **Product name** 110Ω-75Ω bulkhead impedance transformer
 (2) **Model name** XJ3F-TRC-BCJ, BCJ-TRC-XP3F
 (3) **Connector** XLA (1st pin: to body, 2nd pin: hot, 3rd pin: cold), BNC (CANARE)
 (4) **Nominal impedance** XLA: 110 Ω balance, BNC: 75 Ω unbalanced
 (5) **Construction** XJ3F-TRC-BCJ: As shown in the drawing (BL426).
 BCJ-TRC-XP3F: As shown in the drawing (BL428).
 (6) **Weight** XJ3F-TRC-BCJ: Approx 95g, BCJ-TRC-XP3F: Approx 100g
 (7) **Designation** XJ3F-TRC-BCJ:
 Model name (XJ3F-TRC-BCJ) and brand name (CANARE) on the label.
 BCJ-TRB-XP3F:
 Model name (BCJ-TRC-XP3F) and brand name (CANARE) on the label.
 (8) **Packaging** 1pc/package (150 x 50 x 30mm)

3. Rating

- (1) **operating frequency range** 0.1MHz ~ 6MHz
 (2) **Maximum voltage** 5Vp-p
 (3) **Operating temperature** -25 °C ~ +85 °C

4. Characteristics

4.1 Electrical characteristics As shown in Table 1

Table 1

Items	Specified values	Test methods
Contact resistance	BNC Between external contacts: 3mΩ or less Between center contacts: 6mΩ or less XLA 10m Ω or less	Measurement shall be made between the contacts, with engaging a plug and a receptacle. (1kHz:1mA a.c.)
Insertion Loss	0.3dB or less	Measuring attenuation value between XLA and BNC.
Voltage standing wave ratio(V.S.W.R)	1.1 or less	Terminated with 75 Ω. The measurement frequency: 0.1MHz ~ 6MHz

4.2 Mechanical characteristics As shown in Table 2

Table 2

Items	Specified values	Test methods
Intermatability	To be engaged without any abnormality.	The receptacle and applicable plug shall be engaged.
Female contact retention force	BNC: 1.5 ~ 4.0N ----- XLA: 0.8 ~ 22N	Following JIS C 5412 pin gauge (Fig.1) shall be inserted the female contact and measurement shall be made. ----- Following pin gauge (ϕ 2.362+0.003, -0) shall be inserted the female contact and measurement shall be made.
Strength of coupling mechanism	Body shall not be disconnected or no deformation shall be made.	BNC: The plug and a receptacle shall be engaged, after which tensile strength of 250N shall be applied for 1 min. ----- XLA: The plug and a receptacle shall be engaged, after which tensile strength of 100N shall be applied for 1 min.
Mechanical endurance	Contact resistance: 10m Ω or less	The endurance test consists of repeated engagement and separation of connector pairs. BNC: The number of operations shall be 5000 cycles. ----- XLA: The number of operations shall be 500 cycles.

4.3 Environmental characteristics As shown in **Table 3**
Table 3

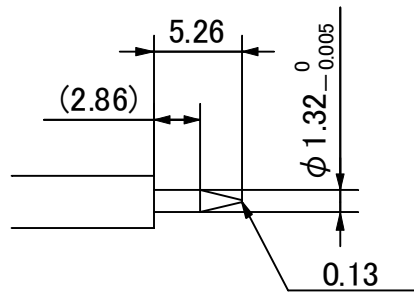
Items	Specified values	Test methods
Change of Temperature (Cycle) -Thermal Shock-	Without any abnormality	Performs 5 cycles of thermal shock (-25 degrees Celsius as low temperature, +85 degrees Celsius as high temperature, 30 minutes in each temperature.) Moving the sample from low to high temperature should be done in a few minutes.

5. Measurement conditions

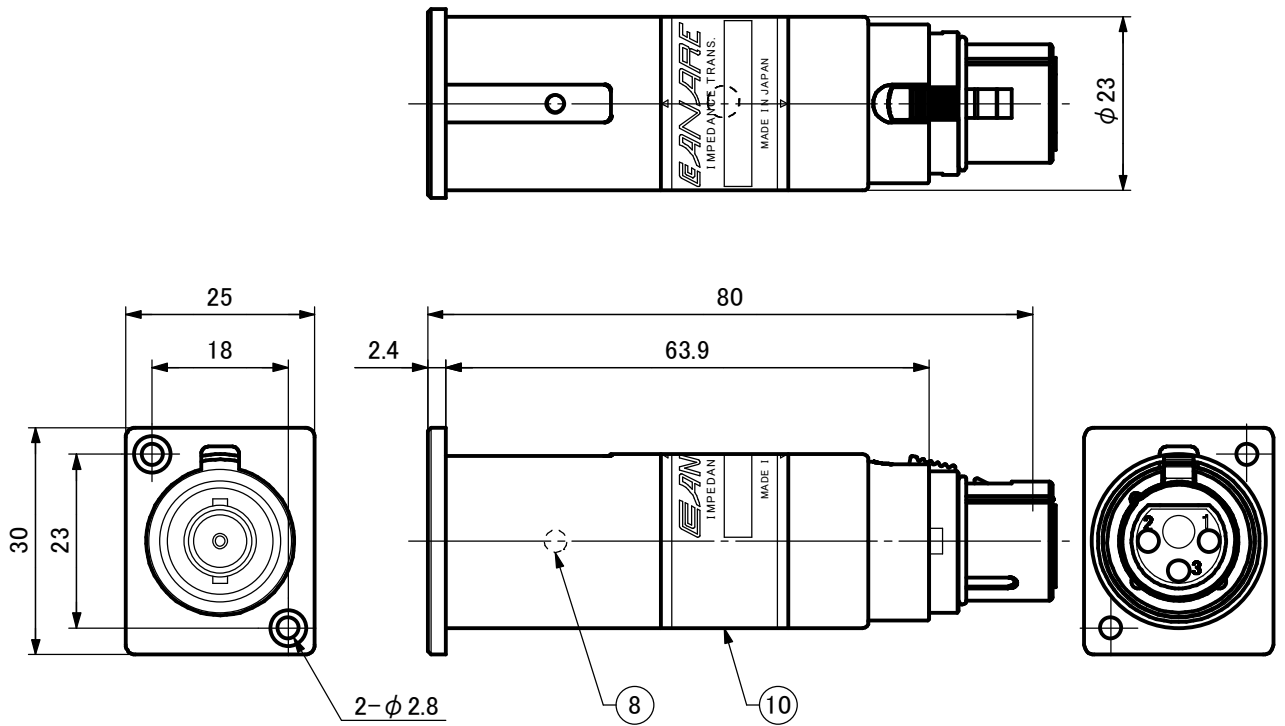
Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows: Ambient temperature (15 °C to 35 °C), Relative humidity (25% to 75%), Air pressure (86kPa to 106kPa). If there is any doubt about the results, measurements shall be made within the following limits: Ambient temperature (20±1 °C), Relative humidity (63% to 67%), Air pressure (86kPa to 106kPa).

Fig.1

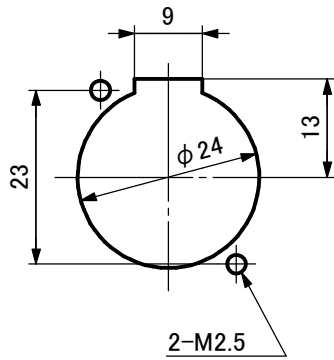
Unit: mm



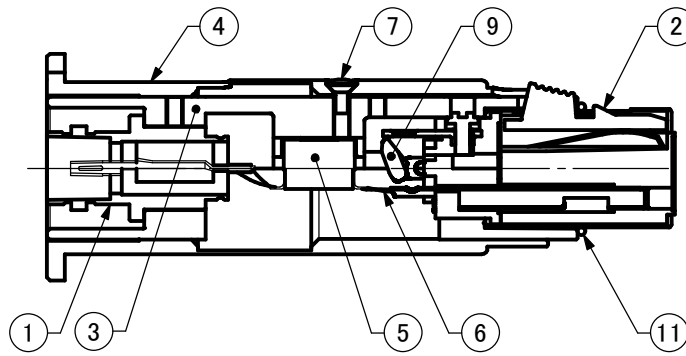
External Appearance



Mounting Hole



Construction



11	O-ring	1	NBR	—					
10	Label	1	Laminated Aluminium Sheet	—					
9	Ceramic Condenser	1	0.47 μ F	—					
8	Hexagon Socket Set Screw M3x4	2	Stainless Steel	—					
7	Cross Recessed Flat Head Screw M2.5x8	1	Steel	Nickel Plating					
6	Wire	5	PE Coated Wire	—					
5	Transformer	1	—	—					
4	Shield Cover	1	Brass	Nickel Plating					
3	Body	1	Aluminum Alloy Die Casting	Nickel Plating					
2	XLA Connector (Female)	1	—	—					
1	BNC Connector	1	—	—					
No.	Name of Parts	Pc(s).	Material	Finish					
Title	110 Ω -75 Ω BULKHEAD IMPEDANCE TRANS.	PJTN	Unit mm	Sc. 1:1	Tol. \pm 0.1	Date 2011-07-26	Ver. 1.0	Model BCJ-TRC-XP3F	No. BL428

PRODUCT SPECIFICATIONS

(XJ3M-TRC-BCJ, BCJ-TRC-XP3M)

SAB427

Ver. 1.0

CANARE ELECTRIC CO., LTD

1. Scope This product specification covers the performance of CANARE 110Ω-75Ω bulkhead impedance transformer.

2. General Specifications

- (1) **Product name** 110Ω-75Ω bulkhead impedance transformer
 (2) **Model name** XJ3M-TRC-BCJ, BCJ-TRC-XP3M
 (3) **Connector** XLA (1st pin: to body, 2nd pin: hot, 3rd pin: cold), BNC (CANARE)
 (4) **Nominal impedance** XLA: 110 Ω balance, BNC: 75 Ω unbalanced
 (5) **Construction** XJ3M-TRC-BCJ: As shown in the drawing (BL427).
 BCJ-TRC-XP3M: As shown in the drawing (BL429).
 (6) **Weight** Approx 105g
 (7) **Designation** XJ3M-TRC-BCJ:
 Model name (XJ3M-TRC-BCJ) and brand name (CANARE) on the label.
 BCJ-TRC-XP3M:
 Model name (BCJ-TRC-XP3M) and brand name (CANARE) on the label.
 (8) **Packaging** 1pc/package (150 x 50 x 30mm)

3. Rating

- (1) **operating frequency range** 0.1MHz ~ 6MHz
 (2) **Maximum voltage** 5Vp-p
 (3) **Operating temperature** -25 °C ~ +85 °C

4. Characteristics

4.1 Electrical characteristics As shown in **Table 1**

Table 1

Items	Specified values	Test methods
Contact resistance	BNC Between external contacts: 3mΩ or less Between center contacts: 6mΩ or less XLA 10mΩ or less	Measurement shall be made between the contacts, with engaging a plug and a receptacle. (1kHz:1mA a.c.)
Insertion Loss	0.3dB or less	Measuring attenuation value between XLA and BNC.
Voltage standing wave ratio(V.S.W.R)	1.1 or less	Terminated with 75 Ω. The measurement frequency: 0.1MHz ~ 6MHz

4.2 Mechanical characteristics As shown in **Table 2**

Table 2

Items	Specified values	Test methods
Intermatability	To be engaged without any abnormality.	The receptacle and applicable plug shall be engaged.
Female contact retention force	BNC: 1.5 ~ 4.0N	Following JIS C 5412 pin gauge (Fig.1) shall be inserted the female contact and measurement shall be made.
Strength of coupling mechanism	Body shall not be disconnected or no deformation shall be made.	BNC: The plug and a receptacle shall be engaged, after which tensile strength of 250N shall be applied for 1 min. ----- XLA: The plug and a receptacle shall be engaged, after which tensile strength of 100N shall be applied for 1 min.
Mechanical endurance	Contact resistance: 10mΩ or less	The endurance test consists of repeated engagement and separation of connector pairs. BNC: The number of operations shall be 5000 cycles. ----- XLA: The number of operations shall be 500 cycles.

4.3 Environmental characteristics As shown in **Table 3**
Table 3

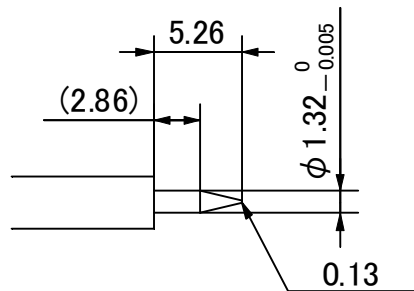
Items	Specified values	Test methods
Change of Temperature (Cycle) -Thermal Shock-	Without any abnormality	Performs 5 cycles of thermal shock (-25 degrees Celsius as low temperature, +85 degrees Celsius as high temperature, 30 minutes in each temperature.) Moving the sample from low to high temperature should be done in a few minutes.

5. Measurement conditions

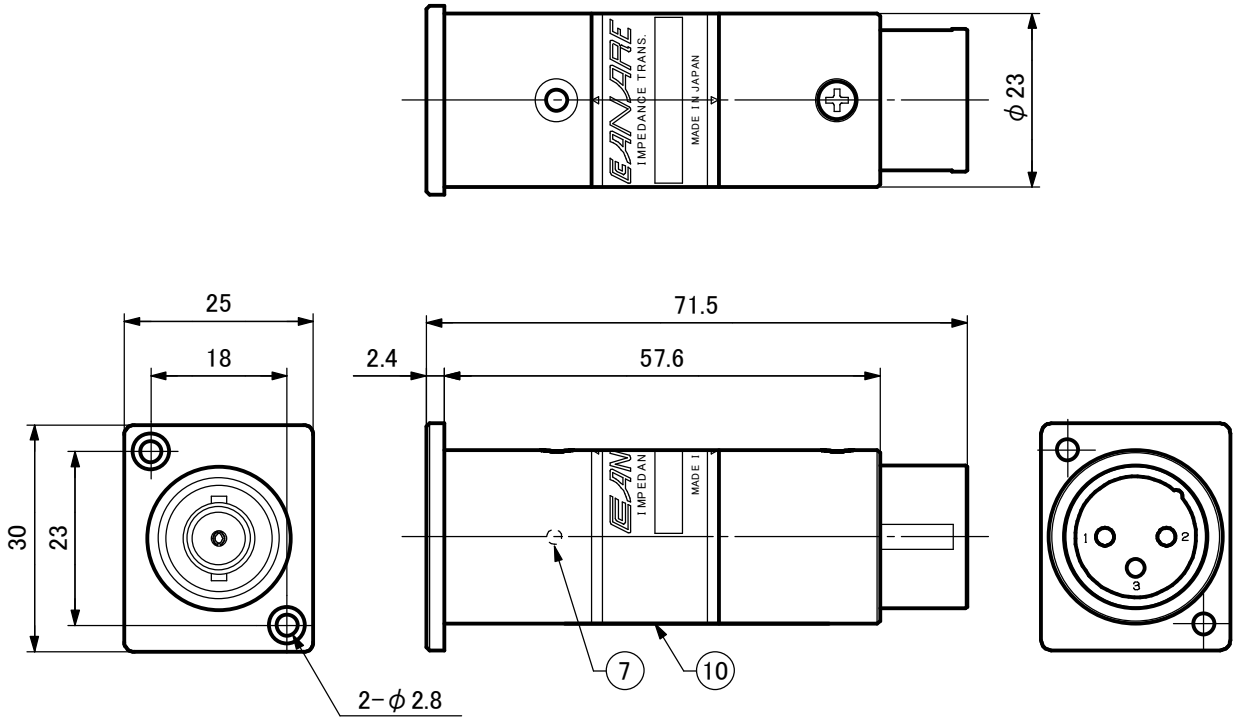
Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows: Ambient temperature (15 °C to 35 °C), Relative humidity (25% to 75%), Air pressure (86kPa to 106kPa). If there is any doubt about the results, measurements shall be made within the following limits: Ambient temperature (20±1 °C), Relative humidity (63% to 67%), Air pressure (86kPa to 106kPa).

Fig.1

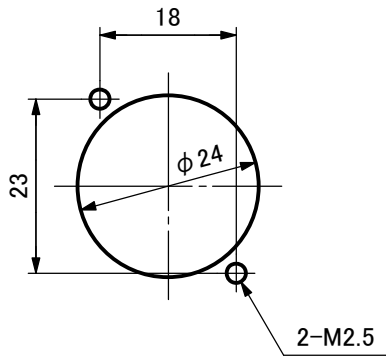
Unit: mm



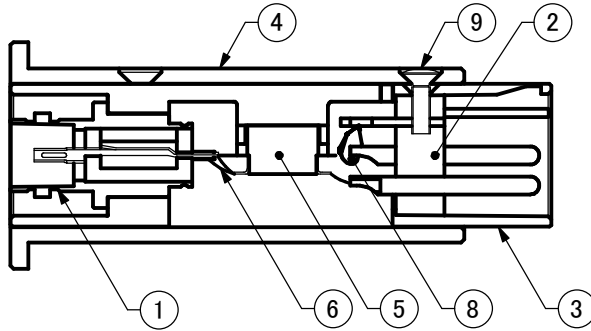
External Appearance



Mounting Hole



Construction



10	Label	1	Laminated Aluminium Sheet	—
9	Cross Recessed Flat Head Screw M2.5x8	1	Steel	Nickel Plating
8	Ceramic Condenser	1	0.47 μ F	—
7	Hexagon Socket Set Screw M3x4	2	Stainless Steel	—
6	Wire	5	PE Coated Wire	—
5	Transformer	1	—	—
4	Shield Cover	1	Brass	Nickel Plating
3	Body	1	Aluminum Alloy Die Casting	Nickel Plating
2	XLA Connector (Male)	1	—	—
1	BNC Connector	1	—	—
No.	Name of Parts	Pc(s).	Material	Finish
Title	110 Ω -75 Ω BULKHEAD IMPEDANCE TRANS.	PJTN	Unit Sc. Tol. Date Ver. 1.0	Model No.
			mm 1:1 \pm 0.1 2011-07-26	BCJ-TRC-XP3M BL429

PRODUCT SPECIFICATIONS

(XJ3F-A10TRC-BCJ, BCJ-A10TRC-XP3F)

SAB430

Ver. 1.0

CANARE ELECTRIC CO., LTD

1. Scope This product specification covers the performance of CANARE 110Ω-75Ω bulkhead impedance transformer.

2. General Specifications

- (1) **Product name** 110Ω-75Ω bulkhead impedance transformer
 (2) **Model name** XJ3F-A10TRC-BCJ, BCJ-A10TRC-XP3F
 (3) **Connector** XLA (1st pin: to body, 2nd pin: hot, 3rd pin: cold), BNC (CANARE)
 (4) **Nominal impedance** XLA: 110 Ω balance, BNC: 75 Ω unbalanced
 (5) **Construction** XJ3F-A10TRC-BCJ: As shown in the drawing (BL430).
 BCJ-A10TRC-XP3F: As shown in the drawing (BL431).
 (6) **Weight** Approx 105g
 (7) **Designation** XJ3F-A10TRC-BCJ:
 Model name (XJ3F-A10TRC-BCJ) and brand name (CANARE) on the label.
 BCJ-A10TRC-XP3F:
 Model name (BCJ-A10TRC-XP3F) and brand name (CANARE) on the label.
 (8) **Packaging** 1pc/package (150 x 50 x 30mm)

3. Rating

- (1) **operating frequency range** 0.1MHz ~ 6MHz
 (2) **Maximum voltage** 5Vp-p
 (3) **Operating temperature** -25 °C ~ +85 °C

4. Characteristics**4.1 Electrical characteristics** As shown in **Table 1****Table 1**

Items	Specified values	Test methods
Contact resistance	BNC Between external contacts: 3mΩ or less Between center contacts: 6mΩ or less XLA 10m Ω or less	Measurement shall be made between the contacts, with engaging a plug and a receptacle. (1kHz:1mA a.c.)
Insertion Loss	10±0.3dB or less	Measuring attenuation value between XLA and BNC.
Voltage standing wave ratio(V.S.W.R)	1.1 or less	Terminated with 75 Ω. The measurement frequency: 0.1MHz ~ 6MHz

4.2 Mechanical characteristics As shown in **Table 2****Table 2**

Items	Specified values	Test methods
Intermatability	To be engaged without any abnormality.	The receptacle and applicable plug shall be engaged.
Female contact retention force	BNC: 1.5 ~ 4.0N ----- XLA: 0.8 ~ 22N	Following JIS C 5412 pin gauge (Fig.1) shall be inserted the female contact and measurement shall be made. ----- Following pin gauge (φ 2.362+0.003, -0) shall be inserted the female contact and measurement shall be made.
Strength of coupling mechanism	Body shall not be disconnected or no deformation shall be made.	BNC: The plug and a receptacle shall be engaged, after which tensile strength of 250N shall be applied for 1 min. ----- XLA: The plug and a receptacle shall be engaged, after which tensile strength of 100N shall be applied for 1 min.
Mechanical endurance	Contact resistance: 10m Ω or less	The endurance test consists of repeated engagement and separation of connector pairs. BNC: The number of operations shall be 5000 cycles. ----- XLA: The number of operations shall be 500 cycles.

4.3 Environmental characteristics As shown in **Table 3**
Table 3

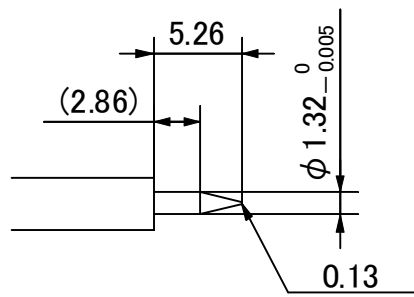
Items	Specified values	Test methods
Change of Temperature (Cycle) -Thermal Shock-	Without any abnormality	Performs 5 cycles of thermal shock (-25 degrees Celsius as low temperature, +85 degrees Celsius as high temperature, 30 minutes in each temperature.) Moving the sample from low to high temperature should be done in a few minutes.

5. Measurement conditions

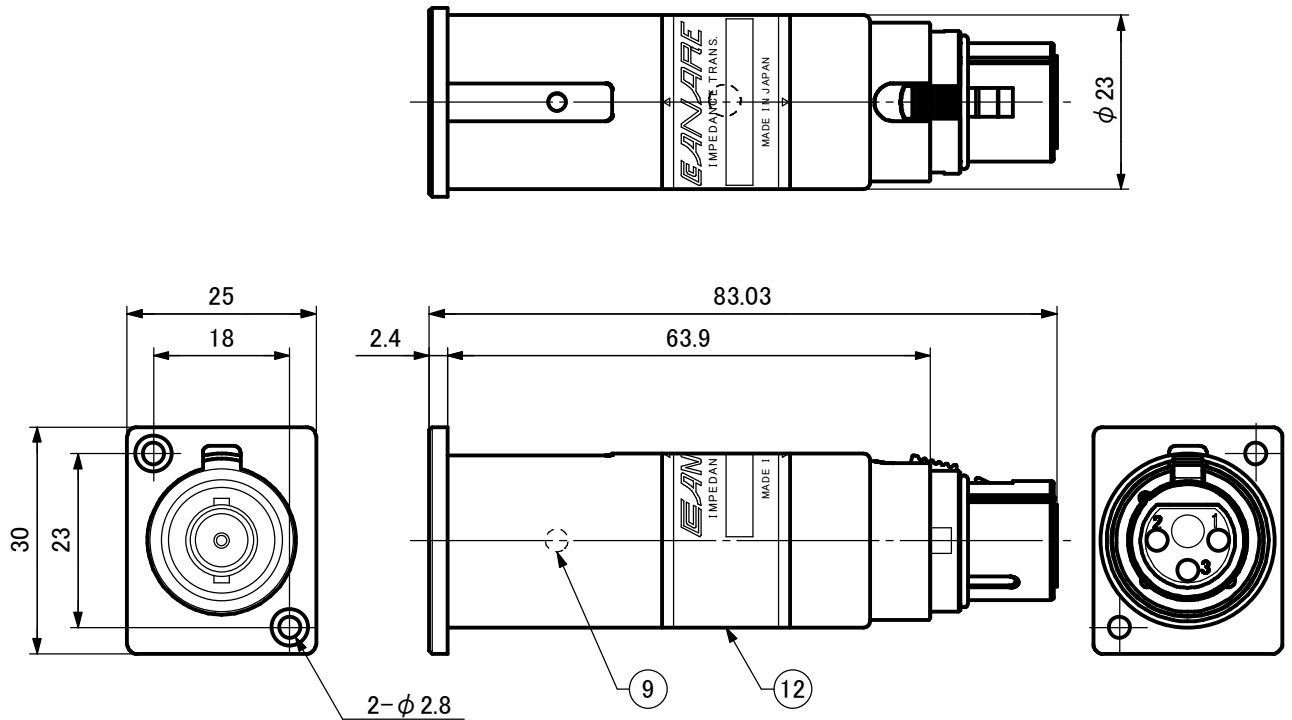
Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows: Ambient temperature (15 °C to 35 °C), Relative humidity (25% to 75%), Air pressure (86kPa to 106kPa). If there is any doubt about the results, measurements shall be made within the following limits: Ambient temperature (20±1 °C), Relative humidity (63% to 67%), Air pressure (86kPa to 106kPa).

Fig.1

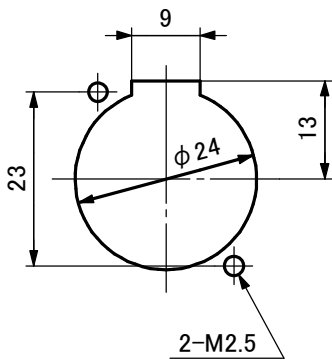
Unit: mm



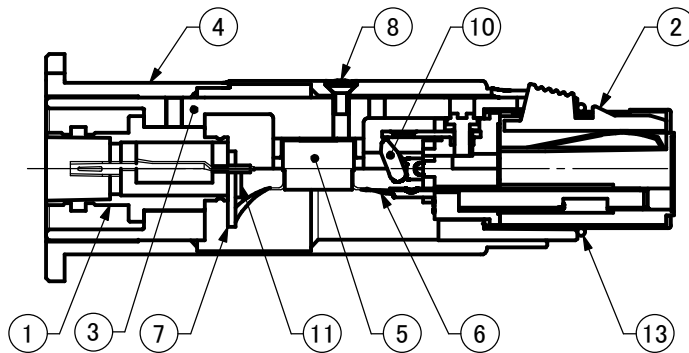
External Appearance



Mounting Hole



Construction



13	O-ring	1	NBR	—
12	Label	1	Laminated Aluminium Sheet	—
11	Fixed Attenuator	1	75 Ω , 10dB	—
10	Ceramic Condenser	1	0.47 μ F	—
9	Hexagon Socket Set Screw M3x4	2	Stainless Steel	—
8	Cross Recessed Flat Head Screw M2x4	1	Steel	Nickel Plating
7	PCB	1	FR-4	—
6	Wire	5	PE Coated Wire	—
5	Transformer	1	—	—
4	Shield Cover	1	Brass	Nickel Plating
3	Body	1	Aluminum Alloy Die Casting	Nickel Plating
2	XLA Connector (Female)	1	—	—
1	BNC Connector	1	—	—
No.	Name of Parts	Pc(s).	Material	Finish
Title	110 Ω -75 Ω BULKHEAD IMPEDANCE TRANS.	PJTN	Unit Sc. Tol. Date Ver. 1.0	Model No.
			mm 1:1 ±0.1 2011-07-26	BCJ-A10TRC-XP3F BL431