RF Fixed attenuator

RF Fixed attenuator is a device used to reduce power levels of a signal by a fixed amount with little or no reflections.

Applications

- Extending the dynamic range of measuring equipment
- Impedance matching to reduce the effects of improper input/output terminations
- Test setups

Important characteristics

- Attenuation and accuracy
- Impedance
- VSWR
- Flatness over a specified frequency range
- Average power
- Dimension

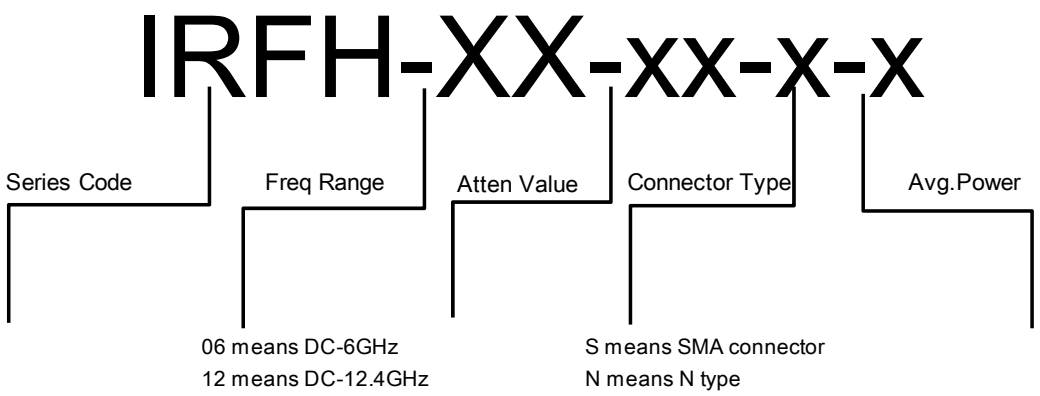
ID Connecting provides fixed attenuators with **SMA, N type** connector **(MMCX, MCX, N7/16, 2.92mm are in development)**, ranging from 1 to 60 dB spanning DC to 18GHz. Custom design is available.

Model Description

Our fixed attenuator comes in RFH and RF two series.

IRFH series operates DC-18GHz, 2W-500W, with superior RF performance.

IRF series operates DC-6GHz, 2W/5W, featuring low cost, small size.



For example, IRFH1830N5 refers to the IRFH series fixed attenuator, DC-18GHz, 30dB, N type, 5Watts. IRF0606S2 refers to the IRF series fixed attenuator, operating DC-6GHz, 6dB, SMA, 2Watts.

*Default impedance is 50-ohm. Should 75-ohm is needed, please indicate on your enquiry form and PO.

Coaxial Fixed Attenuator

Reference for RFH Series

Model	Frequency MAX(GHz)	Attenuation(dB)	Connector	Power Rating(W)
IRFH06XXS2	6GHz	1-9,10/15/20/30/40/50	SMA	2
IRFH06XXN2	6GHz	1-9,10/15/20/30/40	N	2
IRFH18XXS2	18GHz	1-9,10/15/20/30/40/50	SMA	2
IRFH18XXN2	18GHz	1-9,10/15/20/30/40	N	2
IRFH06XXS5	6GHz	1-9,10/15/20/30/40/50	SMA	5
IRFH06XXN5	6GHz	1-9,10/15/20/30/40	N	5
IRFH18XXS5	18GHz	1-9,10/15/20/30/40/50	SMA	5
IRFH18XXN5	18GHz	1-9,10/15/20/30/40	N	5
IRFH06XXN15	6GHz	1-9,10/15/20/30/40	N	15
IRFH18XXN15	18GHz	1-9,10/15/20/30/40	N	15
IRFH06XXN25	6GHz	1-9,10/15/20/30/40	N	25
IRFH18XXN25	18GHz	1-9,10/15/20/30/40	N	25
IRFH06XXN35	6GHz	1-9,10/20/30/40/50	N	35
IRFH18XXN35	18GHz	1-9,10/20/30/40/50	N	35
IRFH06XXN50	6GHz	1-9,10/20/30/40/50	N	50
IRFH18XXN50	18GHz	1-9,10/20/30/40/50	N	50
IRFH06XXN100	6GHz	6,10/20/30/40/50/60	N	100
IRFH18XXN100	18GHz	6,10/20/30/40/50/60	N	100
IRFH06XXN150	6GHz	6,10/20/30/40/50/60	N	150
IRFH18XXN150	18GHz	6,10/20/30/40/50/60	N	150
IRFH06XXN200	6GHz	10/20/30/40/50/60	N	200
IRFH18XXN200	18GHz	10/20/30/40/50/60	N	200
IRFH06XXN250	6GHz	10/20/30/40/50/60	N	250
IRFH18XXN250	18GHz	10/20/30/40/50/60	N	250
IRFH06XXN300	6GHz	10/20/30/40/50/60	N	300
IRFH18XXN300	18GHz	10/20/30/40/50/60	N	300
IRFH06XXN500	6GHz	10/20/30/40/50/60	N	500
IRFH12XXN500	12.4GHz	10/20/30/40/50/60	N	500

1) 3GHz/8GHz/12.4GHz are also available, please contact us for detailed specs.
2) 100W to 300W attenuators are available in both square and round type.
3) Standard connectors are in SMA Female-male or N female-male. MMCX, MCX, N7/16, 2.92mm are in development.

SMA, 2W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:2W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 1-60dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- Passivated stainless steel SMA connector, gold plated beryllium Copper(female) contacts
- RoHs compliant

Nominal Attenuation Values and Accuracy

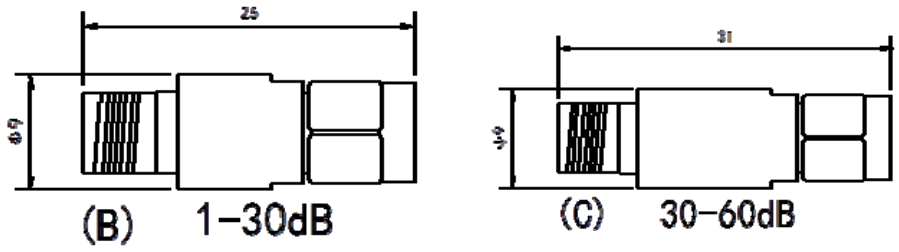
Nominal Attenuation(dB)	Accuracy:±dB (max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
1-10	0.3	0.5	0.6	0.6
11-20	0.4	0.6	0.7	0.8
21-30	0.6	0.8	0.9	1.0
31-40	0.8	1.0	1.1	1.2
41-60	1.0	1.2	——	——

V.S.W.R

Frequency	V.S.W.R (max):1
DC-4GHz	1.15
4-8GHz	1.20
8-12.4GHz	1.30
12.4-18GHz	1.40

Dimensions

Attenuation values	Dimensions(mm) Φ*L
1-30dB	9*26 (B)
40-60dB	9*31 (C)



N Type, 2W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:2W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 1-40dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- Ternary copper N connectors, gold plated beryllium copper (female) contacts
- RoHs compliant

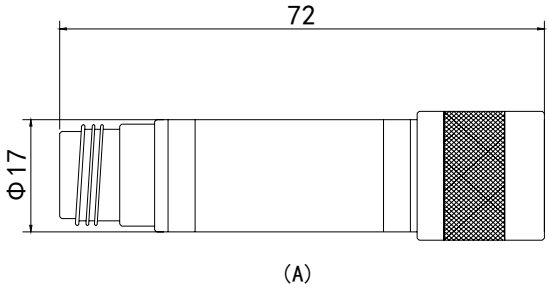
Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB (max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
1-10	0.4	0.5	0.6	0.6
11-20	0.5	0.6	0.7	0.8
21-30	0.6	0.8	0.8	1.0
31-40	0.7	0.8	0.9	1.2

V.S.W.R

Frequency	V.S.W.R (max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions: Φ*L:17*72 (mm) (A)



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SMA, 5W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:5W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 1-60dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- Passivated stainless steel SMA connector, anodized aluminum heat sink
- Gold plated beryllium Copper(female) contacts
- RoHs compliant

Nominal Attenuation Values and Accuracy

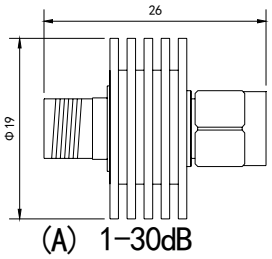
Nominal Attenuation(dB)	Accuracy:±dB (max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
1-10	0.3	0.5	0.6	0.6
11-20	0.4	0.6	0.7	0.8
21-30	0.6	0.8	0.9	1.0
31-40	0.8	1.0	1.1	1.2
41-60	1.0	1.2	——	——

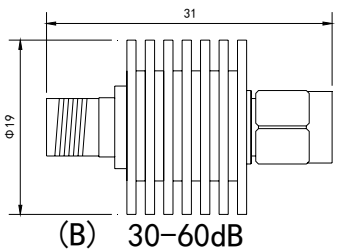
V.S.W.R

Frequency	V.S.W.R (max)
	(max):1
DC-4GHz	1.15
4-8GHz	1.20
8-12.4GHz	1.30
12.4-18GHz	1.40

Dimensions

Attenuation values	Dimensions(mm) Φ*L
1-30dB	18*26(A)
40-60dB	18*31(B)





N Type, 5W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:5W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 1-40dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

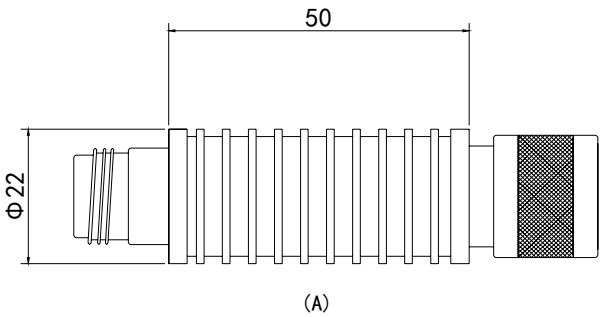
Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB (max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
1-10	0.4	0.5	0.6	0.6
11-20	0.5	0.6	0.7	0.8
21-30	0.6	0.8	0.8	1.0
31-40	0.7	0.8	0.9	1.2

V.S.W.R

Frequency	V.S.W.R
	Max:1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions: Φ*L:22*50(L refers to heat sink length) (mm) (A)



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N Type, 15W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:15W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 1-40dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

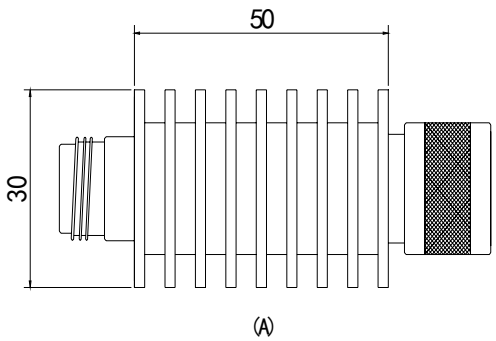
Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB (max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
1-10	0.4	0.5	0.6	0.6
11-20	0.5	0.6	0.7	0.8
21-30	0.6	0.8	0.8	1.0
31-40	0.7	0.8	0.9	1.2

V.S.W.R

Frequency	V.S.W.R (max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions: Φ*L:30*50(L refers to heat sink length) (mm)



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N Type, 25W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:25W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 1-40dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

Nominal Attenuation Values and Accuracy

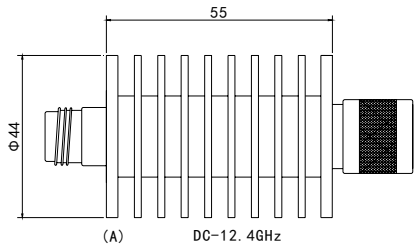
Nominal Attenuation(dB)	Accuracy:±dB (max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
1-10	0.4	0.5	0.6	0.8
11-20	0.5	0.6	0.7	0.9
21-30	0.6	0.8	0.8	1.2
31-40	0.7	0.8	0.9	1.5

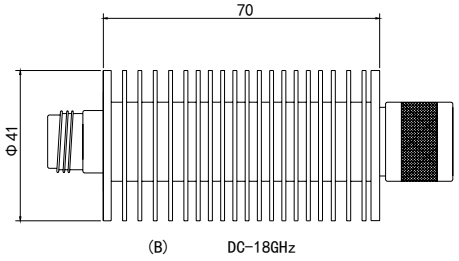
V.S.W.R

Frequency	V.S.W.R (max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions

Frequency	Dimensions (mm) Φ*L (L refers to heat sink length)
DC-12.4GHz	44*55 (A)
DC-18GHz	41*70 (B)





N type, 35W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:35W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 1-50dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

Nominal Attenuation Values and Accuracy

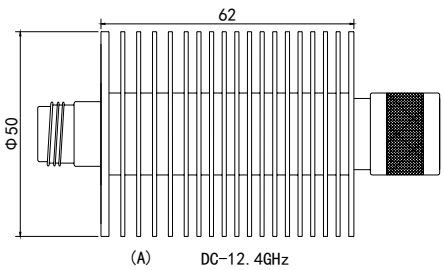
Nominal Attenuation(dB)	Accuracy:±dB(max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
1-10	0.4	0.5	0.6	0.8
20	0.5	0.6	0.7	0.9
30	0.7	0.8	0.8	1.2
40,50	0.7	0.8	0.9	1.5

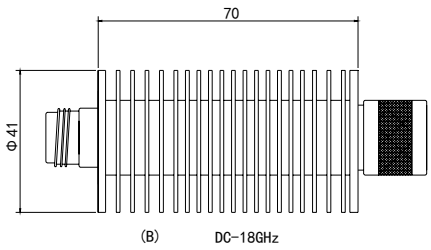
V.S.W.R

Frequency	V.S.W.R(max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions

Frequency	Dimensions (mm) Φ*L (L refers to heat sink length)
DC-12.4GHz	50*62 (A)
DC-18GHz	41*70 (B)





N type, 50W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:50W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 1-50dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

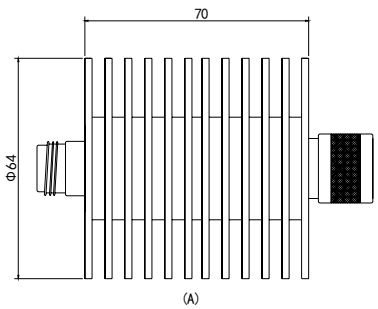
Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB(max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
1-10	0.4	0.5	0.6	0.8
20	0.5	0.6	0.7	0.9
30	0.7	0.8	0.8	1.2
40,50	0.7	0.8	1.0	1.5

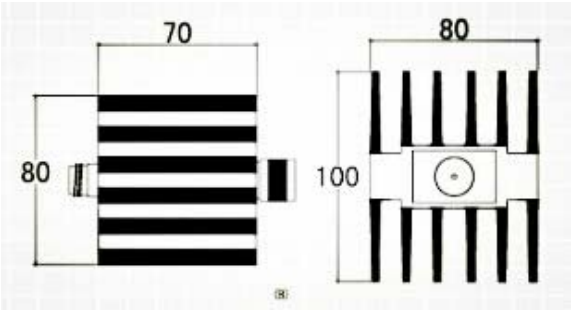
V.S.W.R

Frequency	V.S.W.R(max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions: Φ*L:64*70 (mm) (A) ; L*W*H:70*80*100 (mm) (B) (L refers to heat sink length)



A Round



B Square

Specifications subject to change without prior notice. Contact us for detailed product information.

N Type, 100W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:100W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 6-60dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

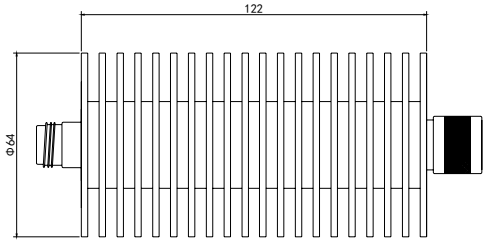
Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB (max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
6-10	0.4	0.5	0.7	0.8
20	0.5	0.6	0.8	1.0
30	0.7	0.8	0.9	1.2
40	0.7	0.8	0.9	1.5
50,60	0.9	1.0	1.1	1.5

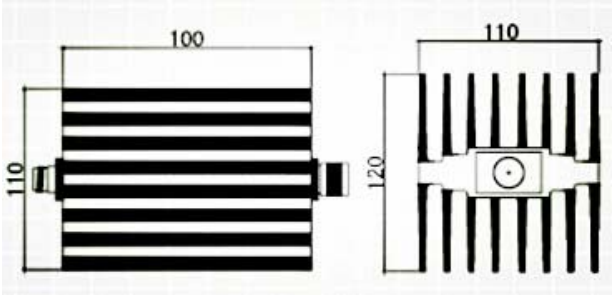
V.S.W.R

Frequency	V.S.W.R (max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions: Φ*L:64*122 (mm) (A)　L*W*H:100*110*120 (mm) (B) (L refers to heat sink length)



A Round



B Square

Specifications subject to change without prior notice. Contact us for detailed product information.

N type, 150W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:150W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 6-60dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

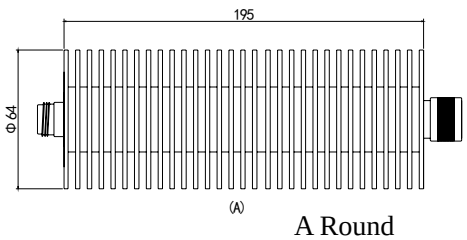
Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB(max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
6-10	0.4	0.5	0.7	0.8
20	0.5	0.6	0.8	1.0
30	0.7	0.8	0.9	1.2
40	0.7	0.8	0.9	1.5
50,60	0.9	1.0	1.1	1.5

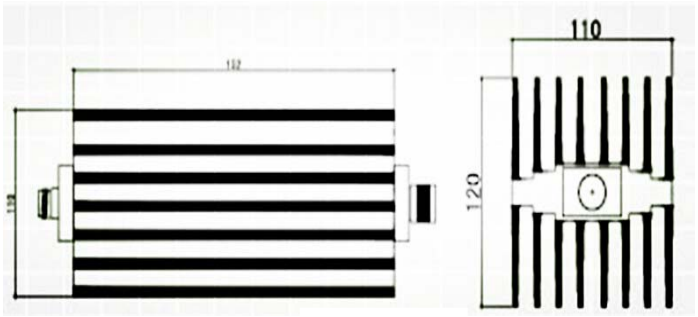
V.S.W.R

Frequency	V.S.W.R(max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions: Φ*L:64*195 (mm) (A), L*W*H:152*110*120 (mm) (B) (L refers to heat sink length)



A Round



B Square

Specifications subject to change without prior notice. Contact us for detailed product information.

N Type, 200W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating: 200W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 10-60dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

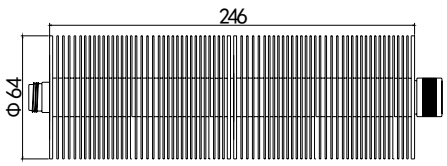
Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB(max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
10	0.5	0.7	0.9	1.0
20	0.6	0.8	0.9	1.0
30	0.8	0.9	1.0	1.2
40	0.9	0.9	1.1	1.5
50,60	0.9	1.0	1.1	1.5

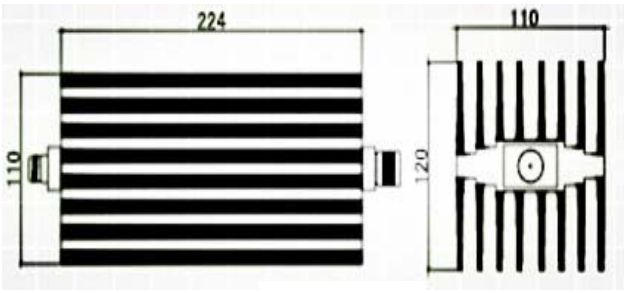
V.S.W.R

Frequency	V.S.W.R(max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions: Φ*L:64*246 (mm) (A) ; L*W*H:224*110*120 (mm) (B) (L refers to heat sink length)



A Round



B Square

N Type, 250W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating:250W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 10-60dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

Nominal Attenuation Values and Accuracy

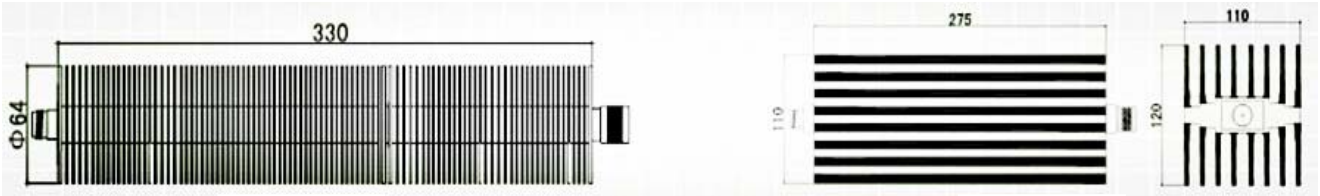
Nominal Attenuation(dB)	Accuracy:±dB(max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
10	0.5	0.7	0.9	1.0
20	0.6	0.8	0.9	1.0
30	0.8	0.9	1.0	1.2
40	0.9	0.9	1.1	1.5
50,60	0.9	1.0	1.1	1.5

V.S.W.R

Frequency	V.S.W.R(max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions

Φ*L:64*330 (mm) (A)　L*W*H: 275*110*120(mm) (B) (L refers to heat sink length)



A Round　　B Square

Specifications subject to change without prior notice. Contact us detailed product information.

N Type, 300W

Specifications

- Options of DC-6GHz,DC-12.4GHz,DC-18GHz
- Nominal Impedance:50 ohms
- Power Rating: 300W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 10-60dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper for DC-12.4GHz, stainless steel for DC-18GHz
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

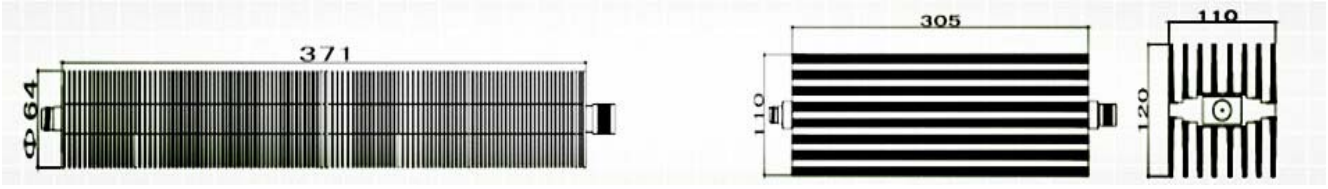
Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB(max)			
	DC-4GHz	4-8GHz	8-12.4GHz	12.4-18GHz
10	0.5	0.7	0.9	1.0
20	0.6	0.8	0.9	1.0
30	0.8	0.9	1.0	1.2
40	0.9	0.9	1.1	1.5
50,60	0.9	1.0	1.1	1.5

V.S.W.R

Frequency	V.S.W.R(max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35
12.4-18GHz	1.45

Dimensions: Φ*L:64*371 (mm) (A); L*W*H:305*110*120 (mm) (B) (L refers to heat sink length)



A Round B Square

Specifications subject to change without prior notice. Contact us for detailed product information.

N Type, 500W

Specifications

- Options of DC-6GHz,DC-12.4GHz
- Nominal Impedance:50 ohms
- Power Rating:500W@25-70℃
- Operating Temperature:-55-125℃
- Attenuation values: 10-60dB

Features

- High attenuation accuracy, excellent VSWR
- Very high reliability, rugged structure
- N connectors: ternary copper
- Anodized aluminum heat sink, gold plated beryllium copper (female) contacts
- RoHs compliant

Nominal Attenuation Values and Accuracy

Nominal Attenuation(dB)	Accuracy:±dB(max)		
	DC-4GHz	4-8GHz	8-12.4GHz
10	0.5	0.7	0.9
20	0.6	0.7	0.9
30	0.8	0.9	1.0
40	0.9	1.0	1.1
50,60	0.9	1.0	1.1

V.S.W.R

Frequency	V.S.W.R(max):1
DC-4GHz	1.20
4-8GHz	1.25
8-12.4GHz	1.35

Dimensions: L*W*H: 509*110*120 (mm) (A) (L refers to heat sink length)