

Variable Rotary Step Attenuators, 2 Watts

INDE®

Frequency: DC ~ 18 GHz

P/N: IVA-S2...18.. Series



Impedance : 50 Ω

Average Power : 2 W

Peak Power : 100W (5us pulse width
with 2% duty cycle)

Operating Temp : 20°C ~ 85°C

Ordering Code	Figure	Frequency Range (GHz)	Attenuation Range (dB) Step Size	MAX VSWR	Insertion Loss(dB)	Attenuation Accuracy (dB)	Connector Type
IVA-S2-1-10-6-A1	Fig 1	DC - 6	0-10 / 1	1.20-1.50	≤ 0.0	± 0.5	SMA(F,F)
IVA-S2-1-10-18-A5	Fig 3	DC-18	0-10/1	1.60	≤ 0.5	±1.0	SMA(F,F)
IVA-S2-1-60-2.5-A1	Fig 1	DC - 2.5	0-60 / 10	1.2	≤ 0.4	± 0.5	SMA(F,F)
IVA-S2-1-60-6-A1	Fig 1	DC - 6	0-60 / 10	1.20-1.50	≤ 0.0	±0.5(<50dB) ±0.8(≥50dB)	SMA(F,F)
IVA-S2-2-70-4.3-A2	Fig 2	DC - 4.3	0-70 / 1	1.25-1.50	≤ 0.5	±0.3dB(≤40dB) ±0.8dB(≤60dB) ±1.5dB(>60dB)	SMA(F,F)
IVA-S2-2-70-8-A6	Fig 5	DC-8	0-70/1	1.50	≤ 0.0	±0.5dB (0~9dB) ±1.0dB(10~19dB) ±1.5dB(20~49dB) ±1.9dB(50~70dB)	SMA(F,F)
IVA-S2-2-70-18-A6	Fig 5	DC-18	0-70/1	1.75	≤ 0.5	±0.5dB (0~9dB) ±1.0dB(10~19dB) ±1.5dB(20~49dB) ±1.9dB(50~70dB)	SMA(F,F)
IVA-S2-3-71-6-A4	Fig 6	DC-6	0-71/0.1	1.8	≤ 2.5	±0.3dB(0.1~1dB) ±0.4dB(1~10dB) ±0.8dB(10~60dB) ±1.5dB(≤71dB)	N (F,F)
IVA-S2-1-80-18-A5	Fig 4	DC-18	0-80/10	1.60	≤ 0.5	±2.5	SMA(F,F)
IVA-S2-1-90-3-A1	Fig 1	DC - 3	0-90 / 10	1.20-1.25	≤ 0.5	±0.5(≤60dB) ±3.5%(>60dB)	SMA(F,F)
IVA-S2-2-99-4-A6	Fig 5	DC-4	0-99/1	1.35	≤ 0.75	±0.5dB (0~9dB) ±1.0dB(10~19dB) ±1.5dB(20~49dB) ±1.9dB(50~69dB) ±2.5dB(70~99dB)	SMA(F,F)
IVA-S2-2-99-18-A6	Fig 5	DC-18	0-99/1	1.75	≤ 0.5	±0.5dB (0~9dB) ±1.0dB(10~19dB) ±1.5dB(20~49dB) ±1.9dB(50~69dB) ±2.5dB(70~99dB)	SMA(F,F)
IVA-S2-3-101-3-A4	Fig 6	DC-3	0-101/0.1	1.60	≤ 0.7	±0.2dB(0.1~1dB) ±0.4dB(1~10dB) ±0.8dB(10~60dB) ±1.5dB(<70dB) ±3.5%(≥70dB)	N (F,F)

N7

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Variable Rotary Step Attenuators, 2 Watts

INDE®

Frequency: DC ~ 18 GHz

P/N: IVA-S2...18.. Series

VNA Plot for IVA-S2-1-10-6-A1 Variable Attenuator (0~10dB/6GHz)

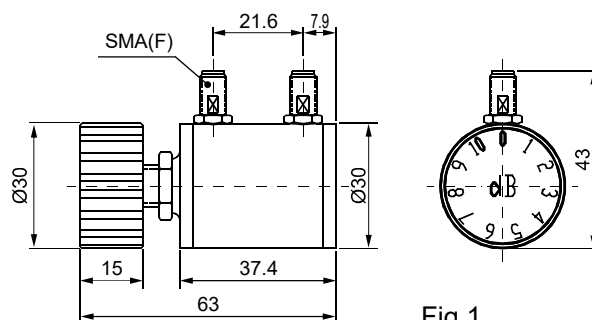
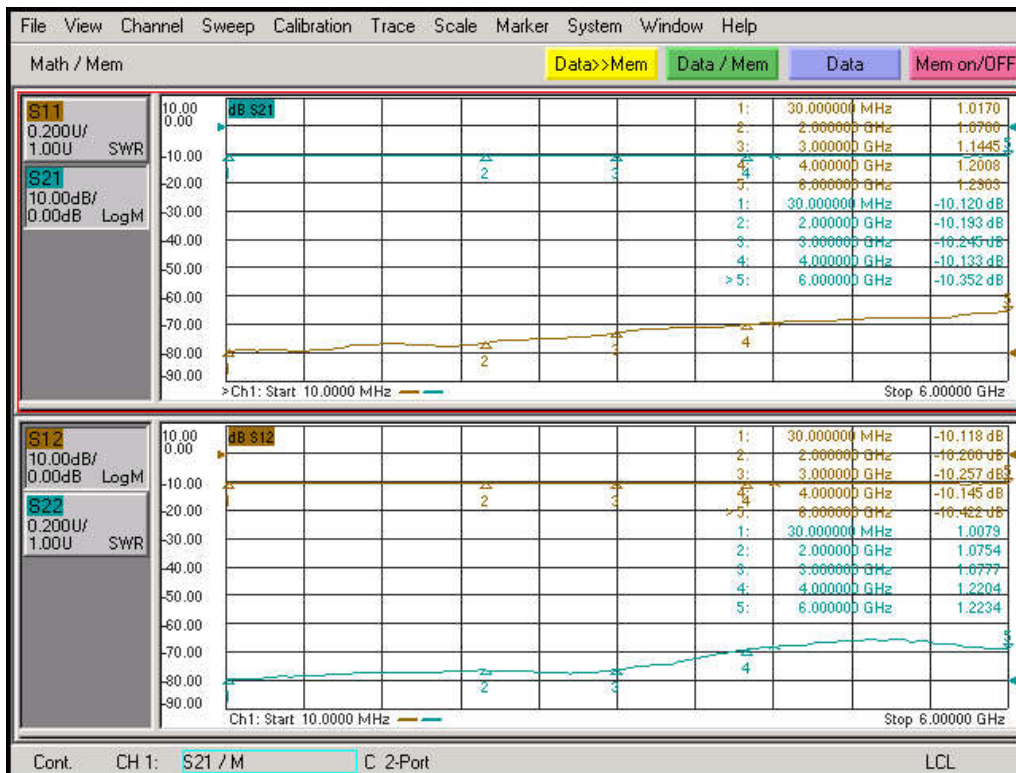


Fig 1

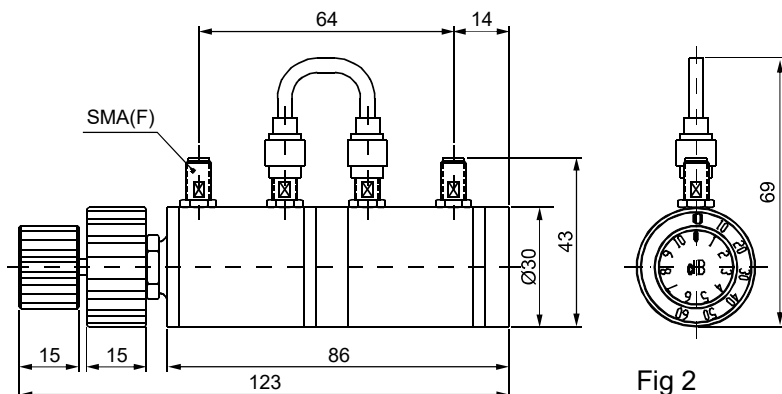


Fig 2

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Variable Rotary Step Attenuators, 2 Watts

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Frequency: DC ~ 18 GHz

P/N: IVA-S2...18.. Series

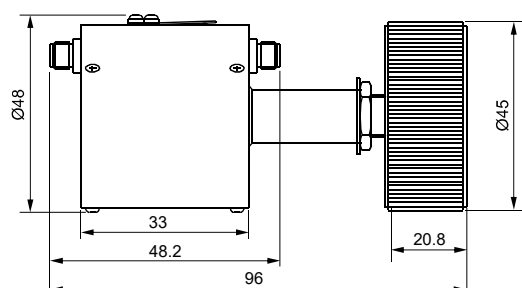


Fig 3

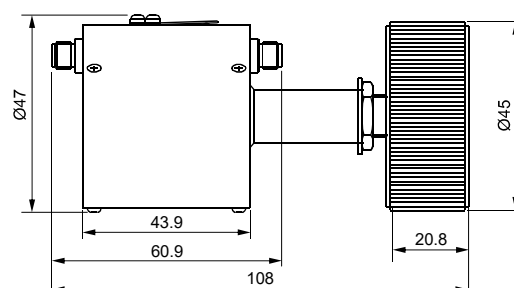


Fig 4

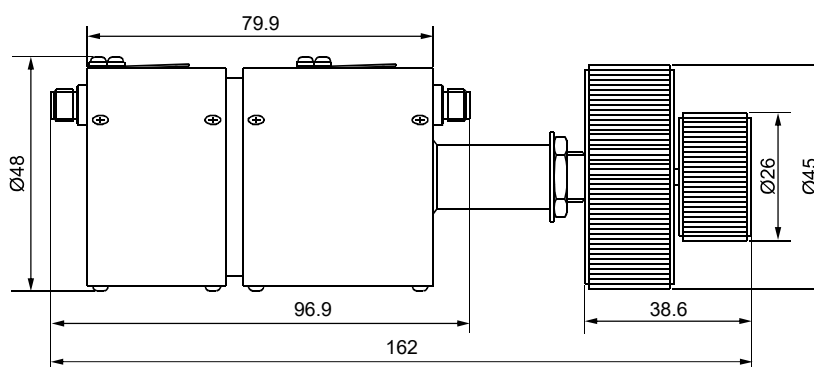


Fig 5

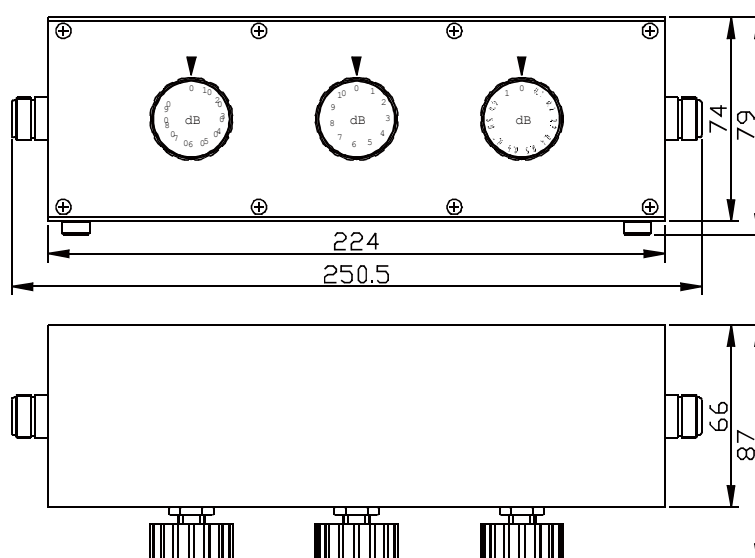


Fig 6

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Imported 2.92 Attenuators, 2W, 5W, 10W

INDE®

Frequency: DC ~ 40 GHz

P/N: IHPA-S1...2.92 Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					1-5	6	10	20	30	40	
IHPA-S1-2-XX-40-2.92	DC-40	1.35	Fig 1	2 ¹⁾	±1.0	±1.0	±1.0	±1.0	-1.0/+1.5	-1.0/+2.0	2.92(M)-(F)
IHPA-S1-5-XX-40-2.92	DC-40	1.35	Fig 2	5 ²⁾	±1.0	±1.0	±1.0	±1.0	-1.0/+1.5	-1.0/+2.0	2.92(M)-(F)
IHPA-S1-10-XX-40-2.92	DC-40	1.40	Fig 3	10 ³⁾	/	/	-1.0/+2.0	-1.0/+1.5	-1.0/+1.5	-1.0/+2.0	2.92(M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 0.5W @125°C. Peak Power is 0.2kW(5us pulse width with 0.5% duty cycle)

2) Average Power at 25°C ambient temperature, derated linearly to 0.5W @125°C. Peak Power is 0.2kW(5us pulse width with 1.25% duty cycle)

3) Average Power at 25°C ambient temperature, derated linearly to 1W @125°C. Peak Power is 0.2kW(5us pulse width with 1.25% duty cycle)

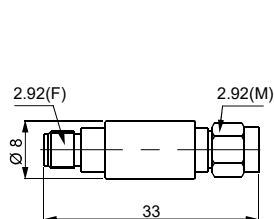


Fig 1

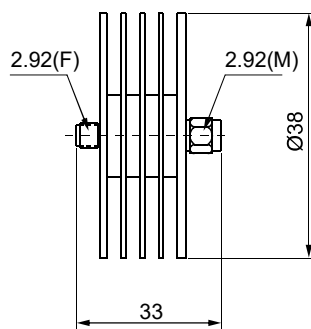


Fig 2

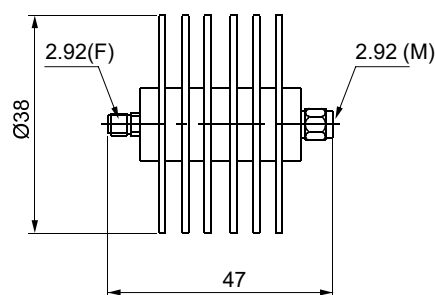


Fig 3

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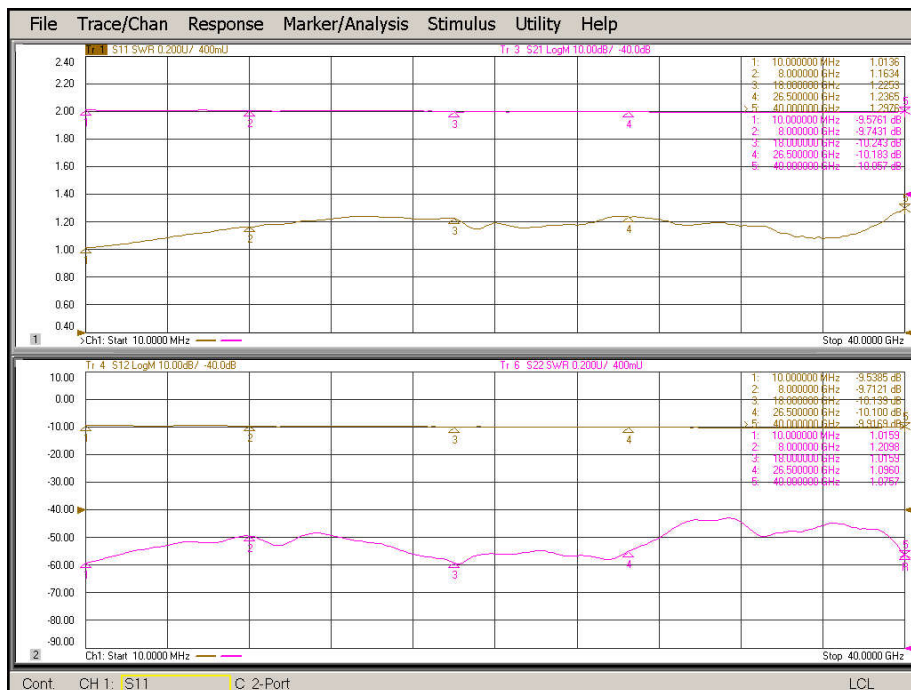
Imported 2.92 Attenuators, 2W, 5W, 10W

Frequency: DC ~ 40 GHz

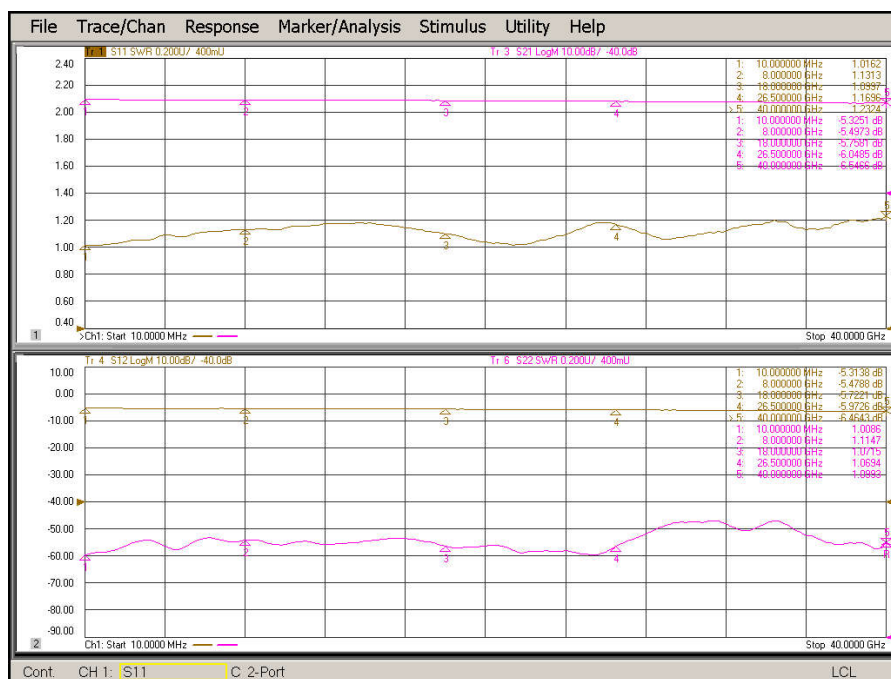
P/N: IHPA-S1...2.92 Series

INDE®

VNA Plot for IHPA-S1-2-10-40-2.92 Attenuator (10dB/2W/40GHz)



VNA Plot for IHPA-S1-5-06-40-2.92 Attenuator (6dB/5W/40GHz)



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N8

Imported 3.5mm Attenuators, 2W, 5W, 10W

INDE®

Frequency: DC ~ 26.5 GHz

P/N: IHPA-S1...3.5 Series



Impedance : 50 Ω

Operating Temp : -55°C ~85°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)				Connector
					1-9	10	20	30	
IHPA-S1-2-XX-26.5-3.5	DC-26.5	1.25	Fig 1	2 ¹⁾	-0.3/+1.0	-0.3/+1.0	-0.3/+1.0	-0.3/+1.0	3.5(M)-(F)
IHPA-S1-5-XX-26.5-3.5	DC-26.5	1.25	Fig 2	5 ²⁾	±1.0	-0.5/+1.2	-0.5/+1.2	-0.5/+1.2	3.5(M)-(F)
HPA-S1-10-XX-26.5-3.5	DC-26.5	1.25	Fig 3	10 ³⁾	±1.0	±1.0	-0.5/+1.2	-0.5/+1.2	3.5(M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 0.5W @125°C. Peak Power is 0.5kW(5us pulse width with 0.2% duty cycle)

2) Average Power at 25°C ambient temperature, derated linearly to 0.5W @125°C. Peak Power is 0.5kW(5us pulse width with 0.5% duty cycle)

3) Average Power at 25°C ambient temperature, derated linearly to 1W @125°C. Peak Power is 1kW(5us pulse width with 0.5% duty cycle)

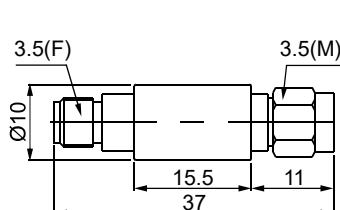


Fig 1

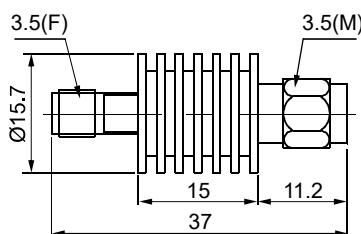


Fig 2

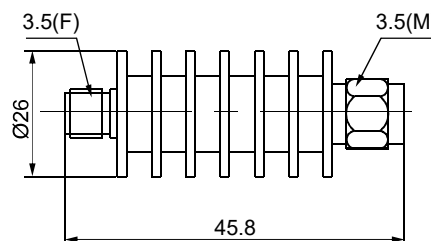


Fig 3

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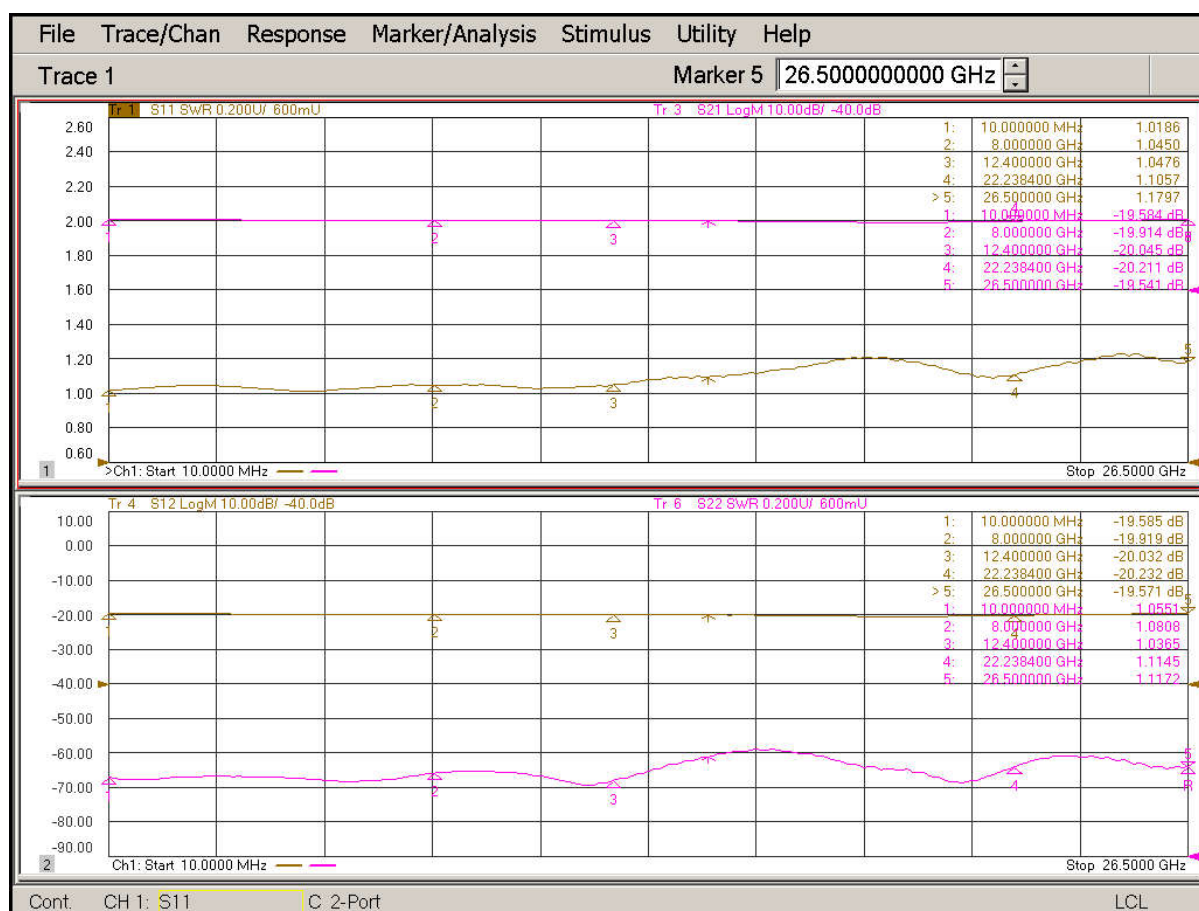
Imported 3.5mm Attenuators, 2W, 5W, 10W

Frequency: DC ~ 26.5 GHz

P/N: IHPA-S1...3.5 Series

INDE[®]

VNA Plot for IHPA-S1-2-20-26.5-3.5 Attenuator (20dB/2W/26.5GHz)



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N8

Imported SMA Attenuators, 2W		INDE®
Frequency: DC ~ 26.5 GHz	P/N: IHP-??-2.. Series	



Impedance : 50 Ω

Operating Temp : -55°C ~85°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					1-5	6	10	20	30	40	
IHPA-S2-2-XX-4	DC-4	1.15	Fig 1	2 ¹⁾	±0.5	±0.5	±0.5	±0.6	±0.6	/	SMA(M)-(F)
IHPA-S2-2-XX-12.4	DC-12.4	1.30	Fig 1	2 ¹⁾	±0.8	±0.8	±0.75	±1.0	±1.0	/	SMA(M)-(F)
IHPA-S2-2-XX-18	DC-18	1.35	Fig 1	2	±1.0	±1.0	±1.0	±1.0	±1.0	/	SMA(M)-(F)
IHPA-S1-2-XX-18-D	DC-18	1.30	Fig 2	2 ¹⁾	±0.8	±0.8	±0.8	±0.8	±0.8	±0.8	SMA(M)-(F)
IHPA-S1-2-XX-26.5-D	DC-26.5	1.35	Fig 2	2 ¹⁾	±1.0	±1.0	±1.0	±1.0	±1.0	±1.0	SMA(M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 0.5W @125°C. Peak Power is 0.5kW(5us pulse width with 0.4% duty cycle)

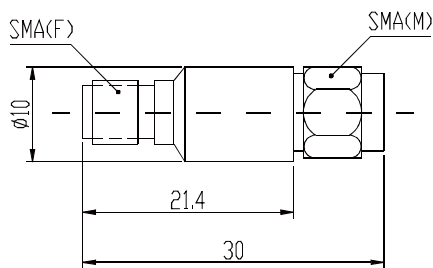


Fig 1

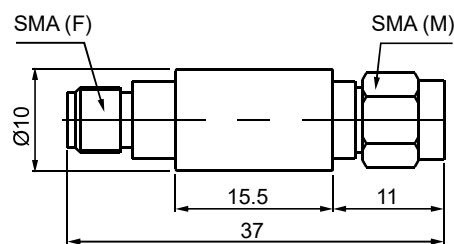


Fig 2

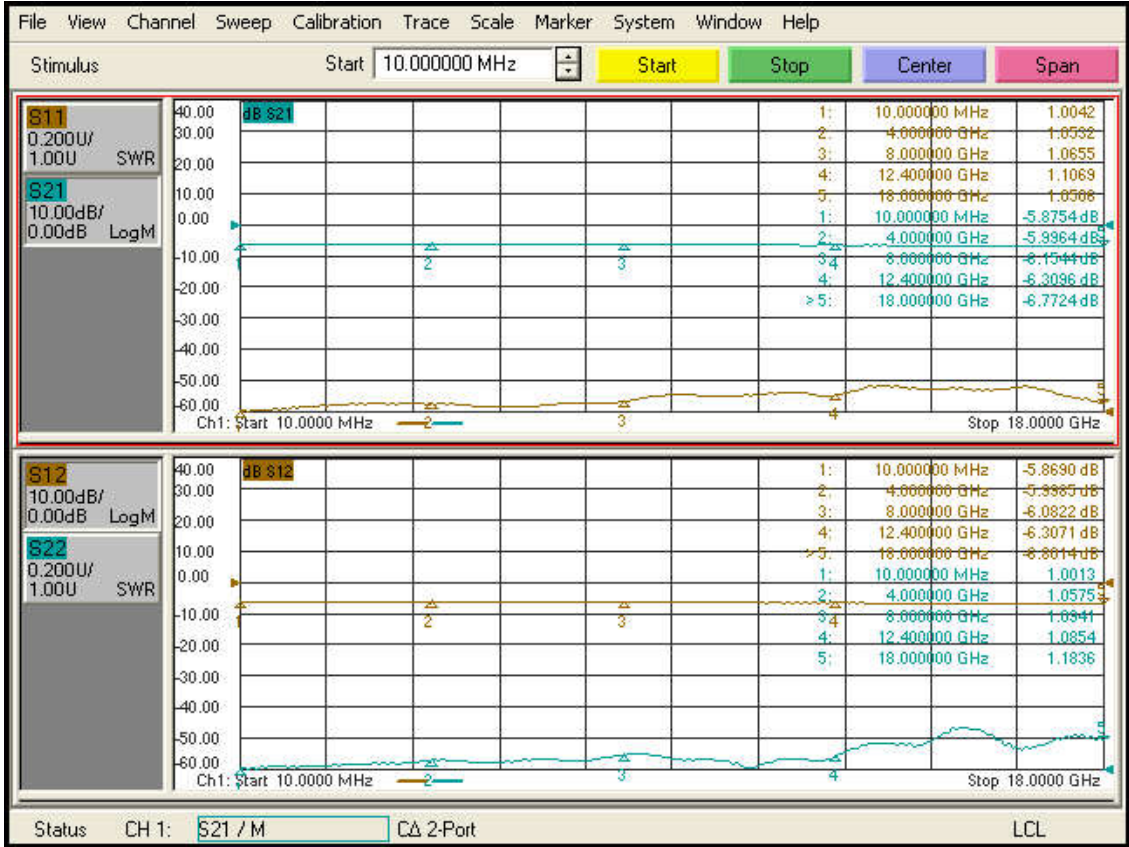
Imported SMA Attenuators, 2W

Frequency: DC ~ 26.5 GHz

P/N: IHP-??-2.. Series



VNA Plot for IHPA-S2-2-XX-18 Attenuator (6dB/2W/18GHz)



Imported SMA Attenuators, 5W

INDE®

Frequency: DC ~ 26.5 GHz

P/N: IHPA-??-5.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-T4-5-XX-4-S	DC-4	<1.10@1 GHz <1.15@2 GHz <1.20 @4 GHz	Fig 2	5 ¹⁾	±0.4	±0.4	±0.5	±0.5	±0.6	±0.6	SMA(M)-(F)
IHPA-S1-5-XX-12.4-A	DC-12.4	1.25	Fig 1	5 ¹⁾	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	SMA(M)-(F)
IHPA-S1-5-XX-18-A	DC-18	1.30	Fig 1	5 ¹⁾	-0.5/ +0.8	-0.5/ +0.8	±1.0	±1.0	±1.0	±1.0	SMA(M)-(F)
IHPA-S1-5-XX-26.5-A	DC-26.5	1.35	Fig 1	5 ¹⁾	±1.0	±1.0	±1.0	-0.5/ +1.5	-0.5/ +1.5	-0.5/ +1.5	SMA(M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 0.5W @125°C. Peak Power is 1kW(5us pulse width with 0.5% duty cycle)

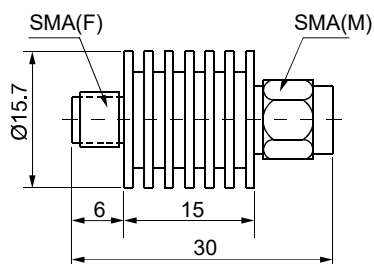


Fig 1

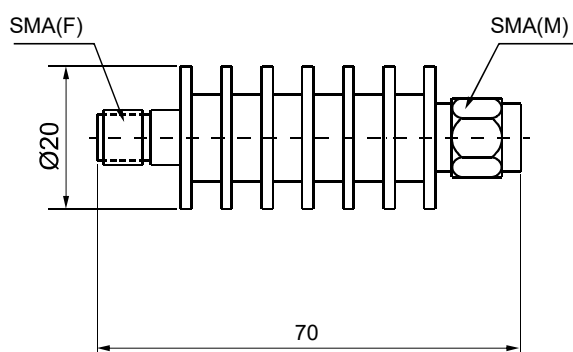


Fig 2

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N10

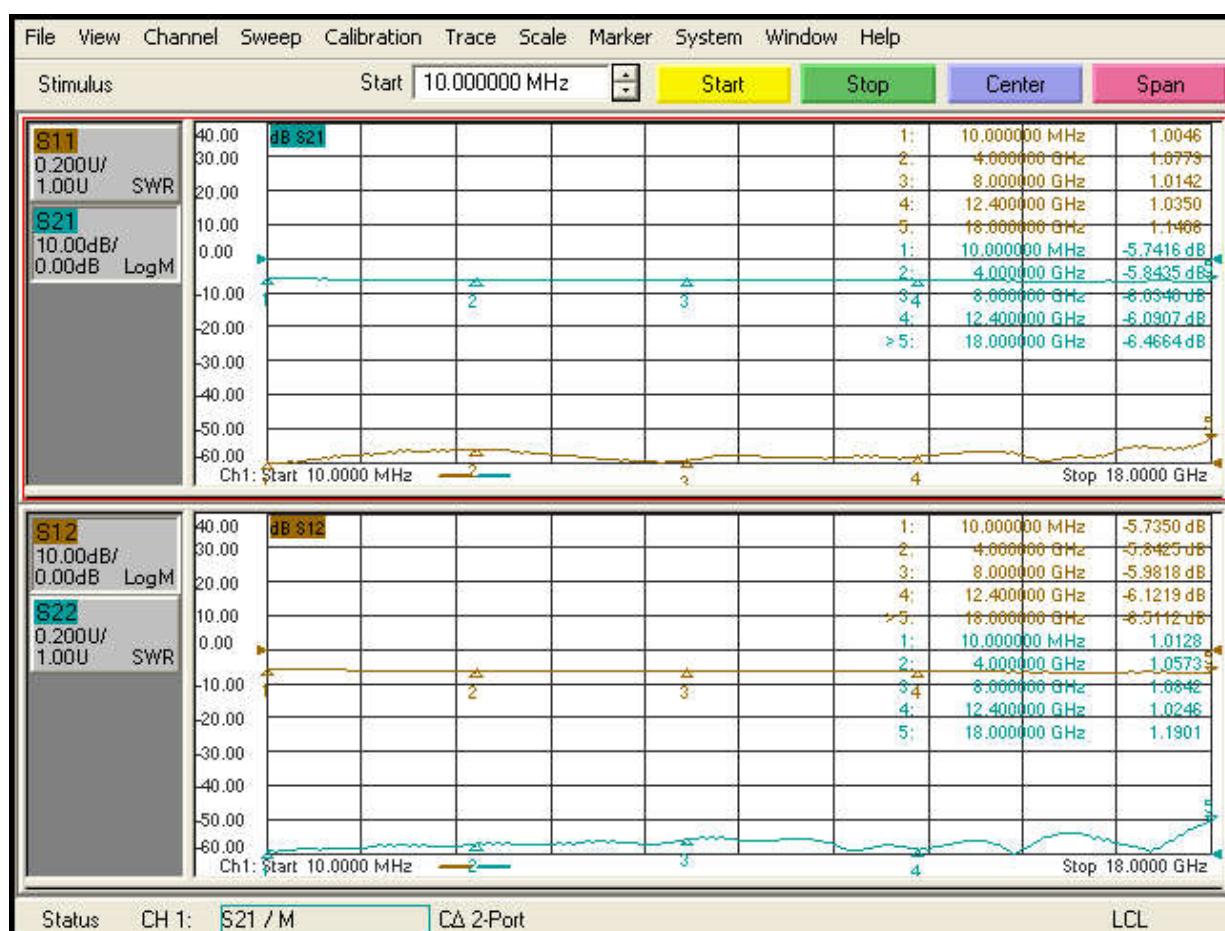
Imported SMA Attenuators, 5W

Frequency: DC ~ 26.5 GHz

P/N: IHPA-??-5.. Series

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VNA Plot for IHPA-S1-5-06-18-A Attenuator (6dB/5W/18GHz)



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N10

Imported SMA Attenuators, 10W

INDE®

Frequency: DC ~ 26.5 GHz

P/N: IHPA-??-10.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Inde P/N	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-D2-10-XX-4-S	DC-4	<1.15@3 GHz <1.20 @4 GHz	Fig 2	10 ⁻²	±0.5	±0.5	±0.6	±0.6	±0.6	±0.8	SMA(M)-(F)
IHPA-S1-10-XX-8-A	DC-8	1.20	Fig 1	10 ⁻¹	±0.4	±0.4	±0.5	±0.5	±0.5	±0.5	SMA(M)-(F)
IHPA-S1-10-XX-12.4-A	DC-12.4	1.25	Fig 1	10 ⁻¹	±0.6	±0.6	±0.6	±0.6	±0.6	±0.6	SMA(M)-(F)
IHPA-S1-10-XX-18-A	DC-18	1.30	Fig 1	10 ⁻¹	±0.8	±0.8	±1.0	±1.0	±1.0	±1.0	SMA(M)-(F)
IHPA-S1-10-XX-26.5-A	DC-26.5	1.35	Fig 1	10 ⁻¹	-0.5/ +1.0	-0.5/ +1.0	-0.5/ +1.5	-0.5/ +1.2	±1.2	±1.2	SMA(M)-(F)

- 1) Average Power at 25°C ambient temperature, derated linearly to 1W @125°C. Peak Power is 1kW(5us pulse width with 0.5% duty cycle)
- 2) Average Power at 25°C ambient temperature, derated linearly to 1W @125°C. Peak Power is 1kW(5us pulse width with 1% duty cycle)

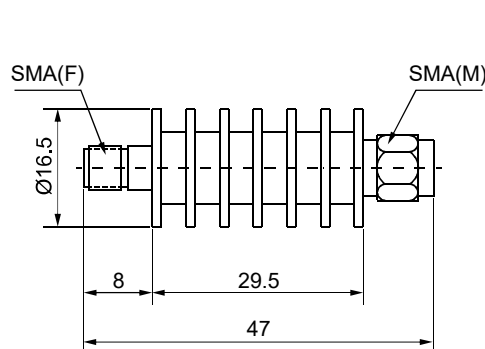


Fig 1

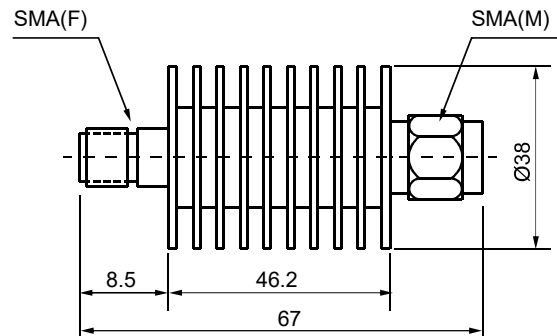


Fig 2

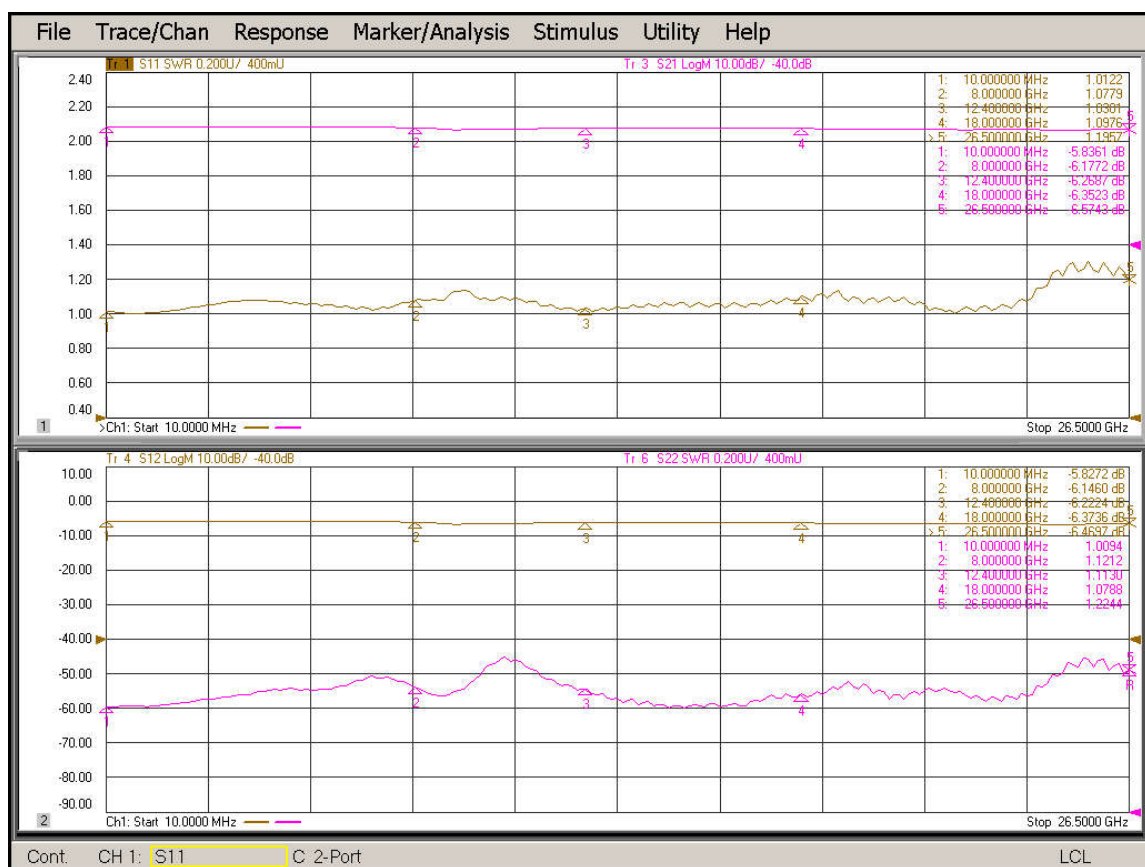
Imported SMA Attenuators, 10W

Frequency: DC ~ 26.5 GHz

P/N: IHPA-??-10.. Series

INDE[®]

VNA Plot for IHPA-S1-10-06-26.5 Attenuator (6dB/10W/26.5GHz)



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Imported SMA High Power Attenuators, 25W

INDE®

Frequency: DC ~ 26.5 GHz

P/N: IHPA-??-25.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-D2-25-XX-4-S-A	DC-4	<1.05@1 GHz <1.10 @2 GHz <1.15@3 GHz <1.25 @4 GHz	Fig 1	25 ¹⁾	±0.5	±0.5	±0.6	±0.6	±0.6	±1.0	SMA(M)-(F)
IHPA-D1-25-XX-8-C	DC-8	1.20	Fig 2	25 ¹⁾	/	/	±0.4	±0.5	±0.5	±0.5	SMA(M)-(F)
IHPA-D1-25-XX-12.4-C	DC-12.4	1.25	Fig 2	25 ¹⁾	/	/	±0.5	±0.8	±0.8	±0.8	SMA(M)-(F)
IHPA-D1-25-XX-18-C	DC-18	1.30	Fig 2	25 ¹⁾	/	/	±1.0	±1.0	±1.0	±1.0	SMA(M)-(F)
IHPA-D1-25-XX-26.5-C	DC-26.5	1.35	Fig 2	25 ¹⁾	/	/	±1.2	±1.2	±1.2	±1.2	SMA(M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 2.5W @125°C. Peak Power is 1kW(5us pulse width with 2.5% duty cycle)

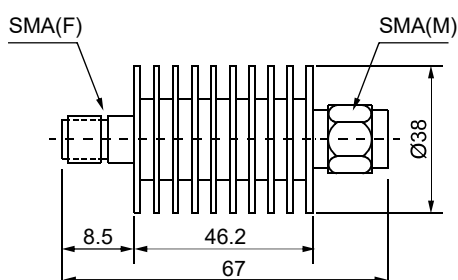


Fig 1

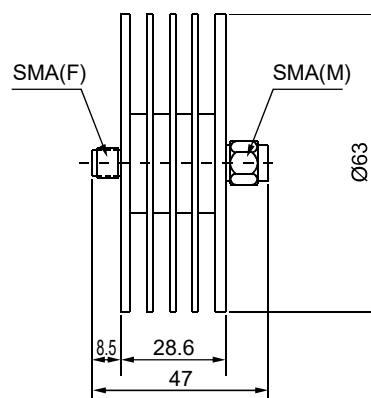


Fig 2

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N12

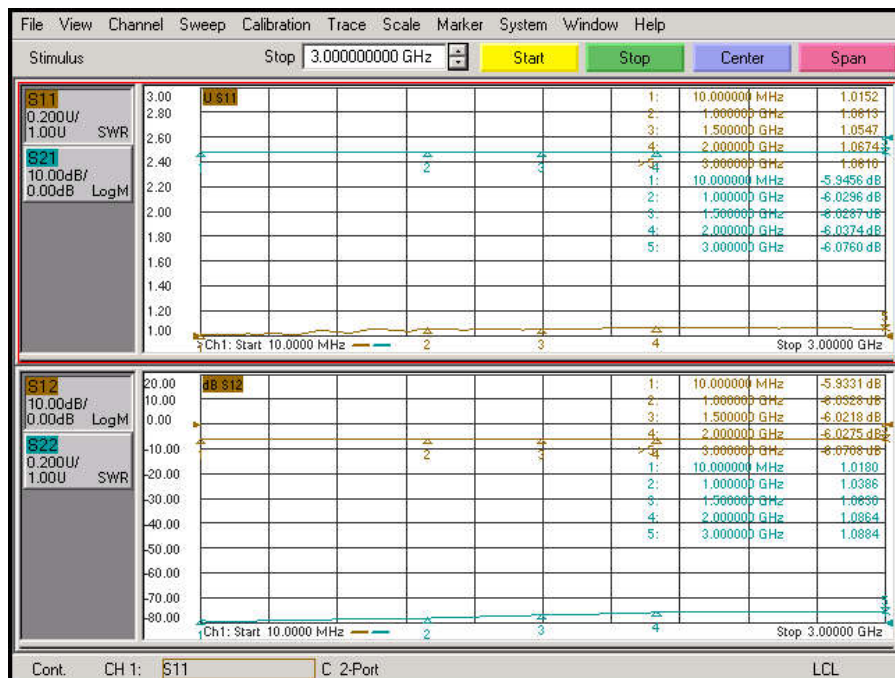
Imported SMA High Power Attenuators, 25W

Frequency: DC ~ 26.5 GHz

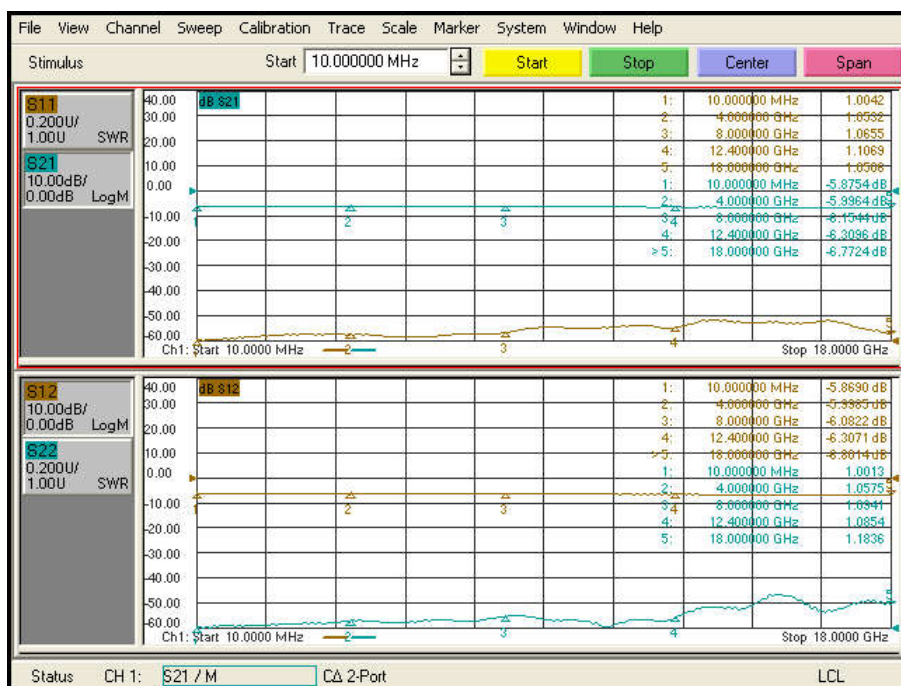
P/N: IHPA-??-25.. Series

INDE[®]

VNA Plot for IHPA-D2-25-10-4-S-A Attenuator (10dB/25W/4GHz)



VNA Plot for IHPA-D1-25-10-18-C Attenuator (10dB/25W/18GHz)



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N12

Imported SMA High Power Attenuators, 50W

INDE®

Frequency: DC ~ 26.5 GHz

P/N: IHPA-??-50.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)					Connector
					3/6	10	20	30	40	
IHPA-D3-50-XX-4-S-A	DC-4	1.35	Fig 2	50 ¹⁾	±0.75	±0.75	±0.75	±0.75	±0.75	SMA(M)-(F)
IHPA-D1-50-XX-12.4-A	DC-12.4	1.20	Fig 1	50 ¹⁾	N.A	±0.5	±0.6	±0.80	±0.8	SMA(M)-(F)
IHPA-D1-50-XX-18-A	DC-18	1.25	Fig 1	50 ¹⁾	N.A	±1.0	±1.0	±1.0	±1.0	SMA(M)-(F)
IHPA-D1-50-XX-26.5-A	DC-26.5	1.30	Fig 1	50 ¹⁾	N.A	+2.5/-1.0	+1.5/-1.0	+1.5/-1.0	+1.5/-1.0	SMA(M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 5W @125°C. Peak Power is 5kW(5us pulse width with 1% duty cycle)

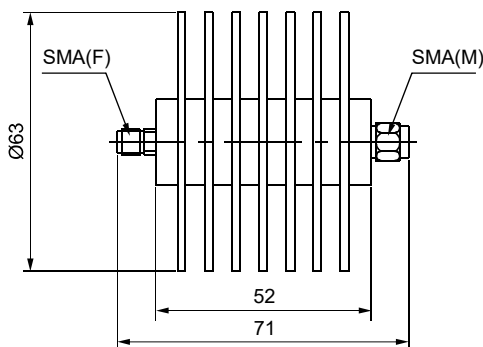


Fig 1

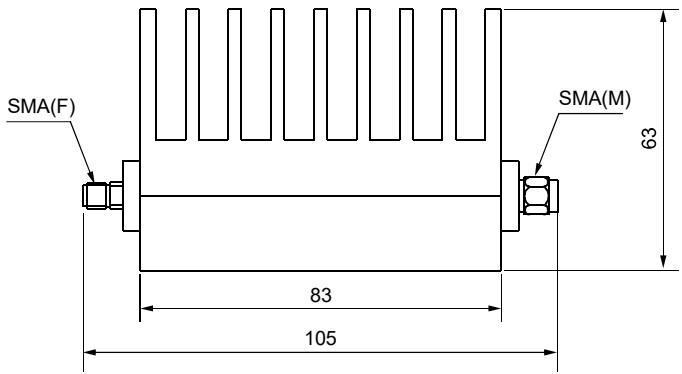


Fig 2

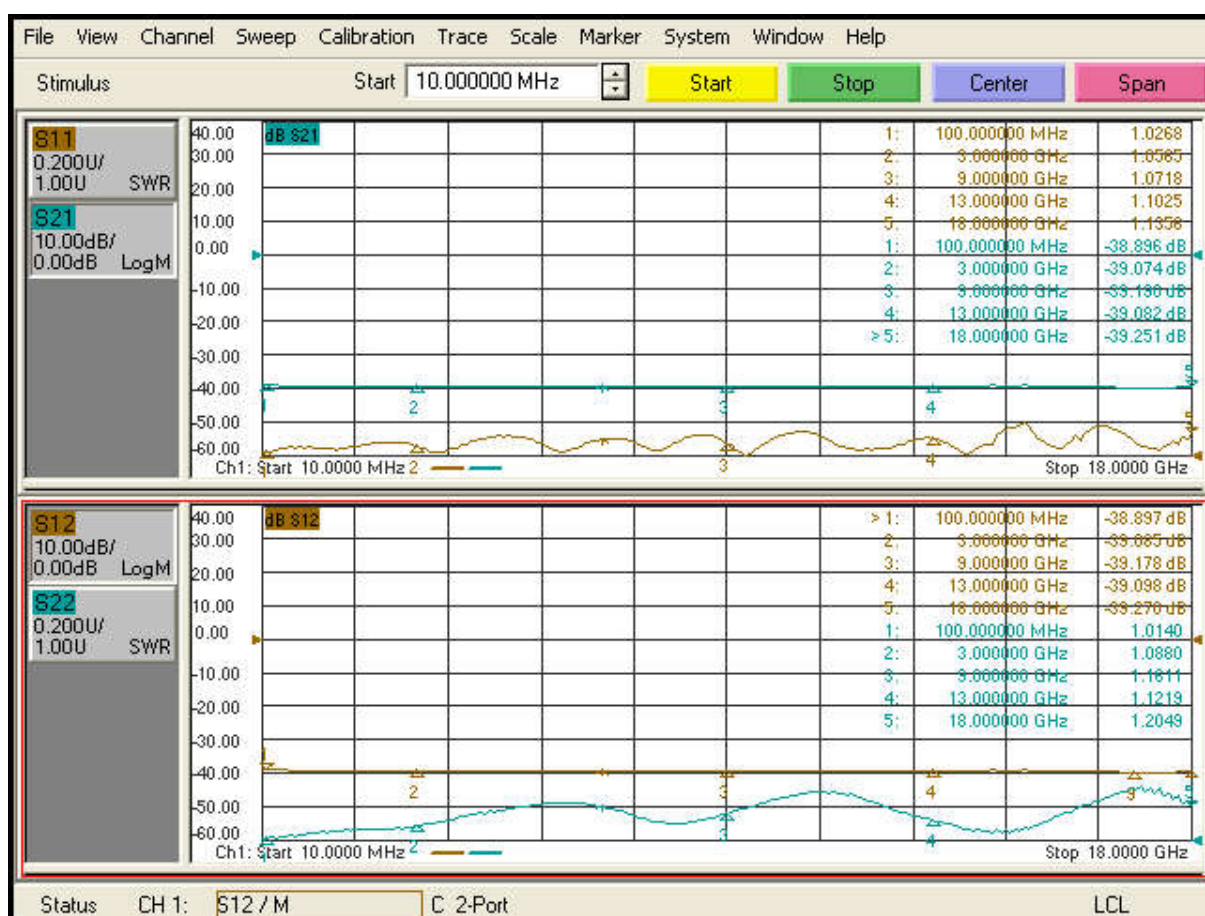
Imported SMA High Power Attenuators, 50W

Frequency: DC ~ 26.5 GHz

P/N: IHPA-??-50.. Series

INDE[®]

VNA Plot for IHPA-D1-50-10-18-A Attenuator (10dB/50W/18GHz)



Imported N Attenuators, 2W

INDE®

Frequency: DC ~ 18 GHz

P/N: IHPA-??-2.. Series

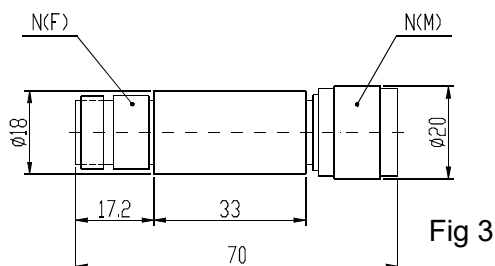
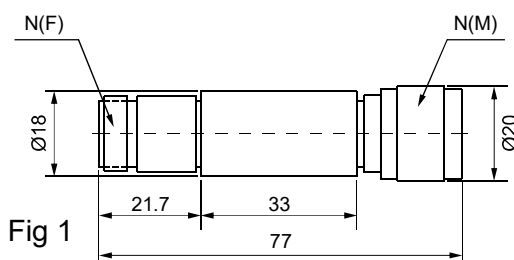
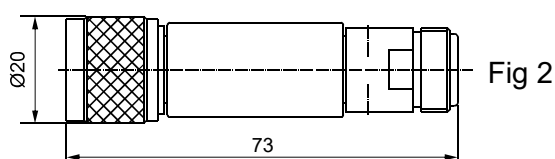


Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)				Connector
					3/6	10/20	30	40	
IHPA-T3-2-XX-4-N	DC-4	1.20	Fig 3	2 ¹⁾	±0.4	±0.5	±0.6	±0.6	N(M)-(F)
IHPA-T2-2-XX-4-A	DC-4	1.10	Fig 2	2 ¹⁾	±0.3	±0.3	±0.3	±0.5	N(M)-(F)
IHPA-T1-2-XX-8-N-A	DC-8	1.20	Fig 1	2 ¹⁾	±0.5	±0.4	±0.5	±0.6	N(M)-(F)
IHPA-T2-2-XX-8-A	DC-8	1.15	Fig 2	2 ¹⁾	-0.3/+0.6	-0.3/+0.6	-0.3/+0.6	+0.6	N(M)-(F)
IHPA-T1-2-XX-12.4-N-A	DC-12.4	1.25	Fig 1	2 ¹⁾	±0.7	±0.7	±0.7	±0.75	N(M)-(F)
IHPA-T2-2-XX-12.4-A	DC-12.4	1.20	Fig 2	2 ¹⁾	-0.3/+0.6	-0.3/+0.6	-0.3/+0.6	+0.75	N(M)-(F)
IHPA-T1-2-XX-18-N-A	DC-18	1.30	Fig 1	2 ¹⁾	-0.4/+1.2	±1.0	±1.2	±1.2	N(M)-(F)
IHPA-T2-2-XX-18-A	DC-18	1.30	Fig 2	2 ¹⁾	-0.3/+0.8	-0.3/+0.8	-0.3/+0.8	+1.2	N(M)-(F)

1) Av. Power @25°C amb. temperature, derated linearly to 0.5W @125°C. Peak Power is 0.5kW(5us pulse with 0.2% duty)



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N14

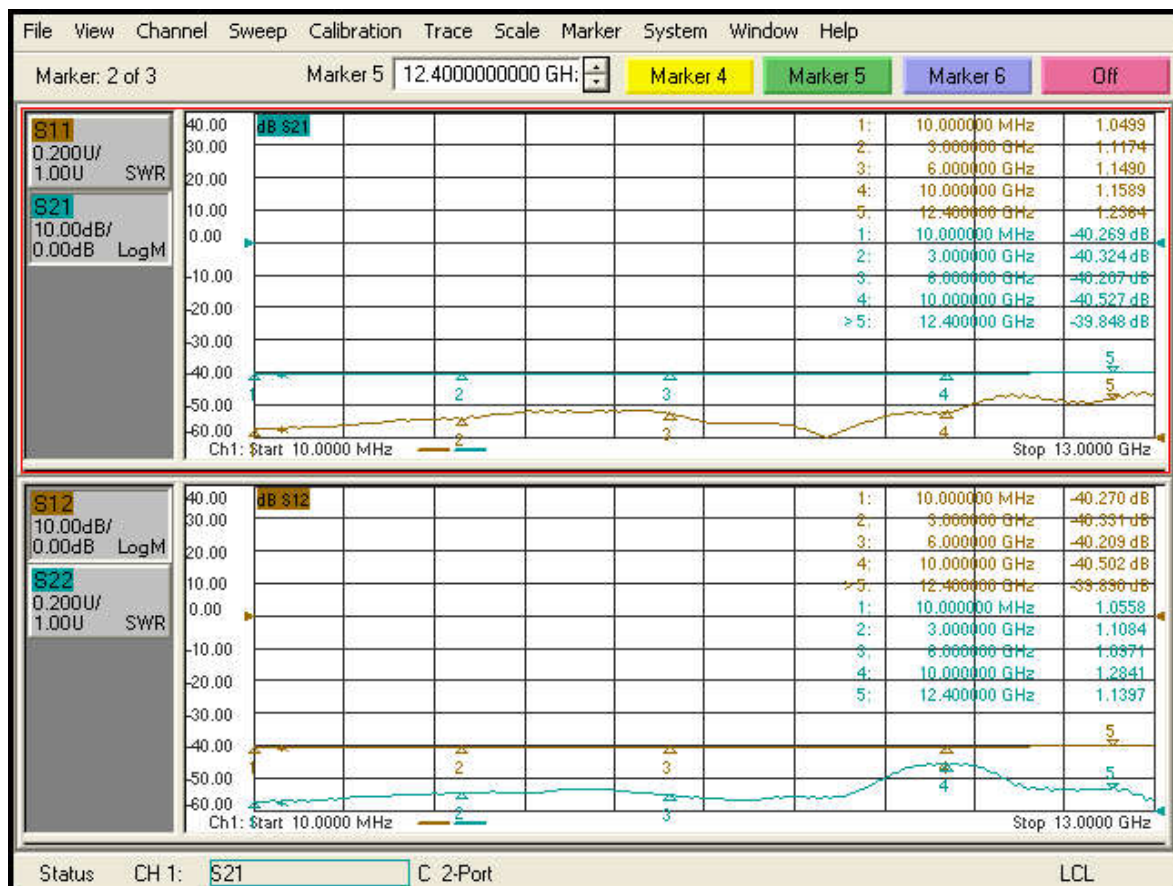
Imported N Attenuators, 2W

Frequency: DC ~ 18 GHz

P/N: IHPA-??-2.. Series

INDE[®]

VNA Plot for IHPA-T1-2-XX-12.4-N Attenuator (40dB/2W/12.4GHz)



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N14

Imported N Attenuators, 5W

INDE®

Frequency: DC ~ 18 GHz

P/N: IHPA-??-5.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-T3-5-XX-4	DC-4	<1.10@1 GHz <1.15@2 GHz <1.20 @4 GHz	Fig 3	5 ¹⁾	±0.4	±0.4	±0.5	±0.5	±0.6	±0.6	N (M)-(F)
IHPA-T1-5-XX-8-N-A	DC-8	1.30	Fig 1	5 ²⁾	±0.5	±0.5	±0.4	±0.4	±0.5	±0.6	N (M)-(F)
IHPA-T2-5-XX-8-A	DC-8	1.15	Fig 2	5 ²⁾	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	±0.6	N (M)-(F)
IHPA-T1-5-XX-12.4-N-A	DC-12.4	1.35	Fig 1	5 ²⁾	±0.7	±0.7	±0.7	±0.7	±0.7	±0.75	N (M)-(F)
IHPA-T2-5-XX-12.4-A	DC-12.4	1.20	Fig 2	5 ²⁾	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	±0.75	N (M)-(F)
IHPA-T1-5-XX-18-N-A	DC-18	1.40	Fig 1	5 ²⁾	-0.4/ +1.2	-0.4/ +1.2	±1.0	±1.2	±1.2	±1.2	N (M)-(F)
IHPA-T2-5-XX-18-A	DC-18	1.30	Fig 2	5 ²⁾	-0.3/ +0.8	-0.3/ +0.8	-0.3/ +0.8	-0.3/ +0.8	-0.3/ +1.0	±1.2	N (M)-(F)

1) Av. Power @25°C ambient temperature, derated linearly to 0.5W @125°C. Peak Power is 1kW (5us pulse width with 0.5% duty)

2) Av. Power @25°C ambient temperature, derated linearly to 0.5W @125°C. Peak Power is 1kW (5us pulse width with 0.25% duty)

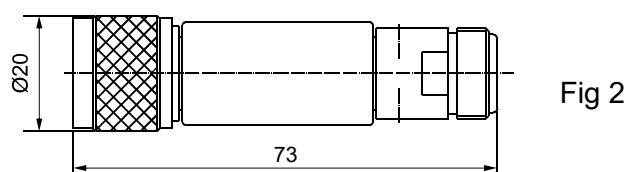


Fig 2

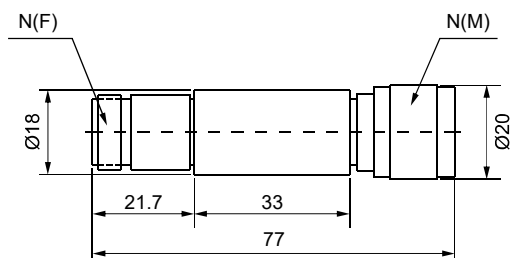


Fig 1

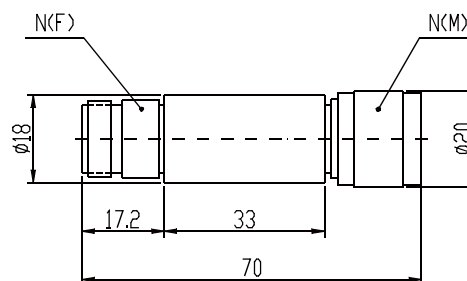


Fig 3

N15

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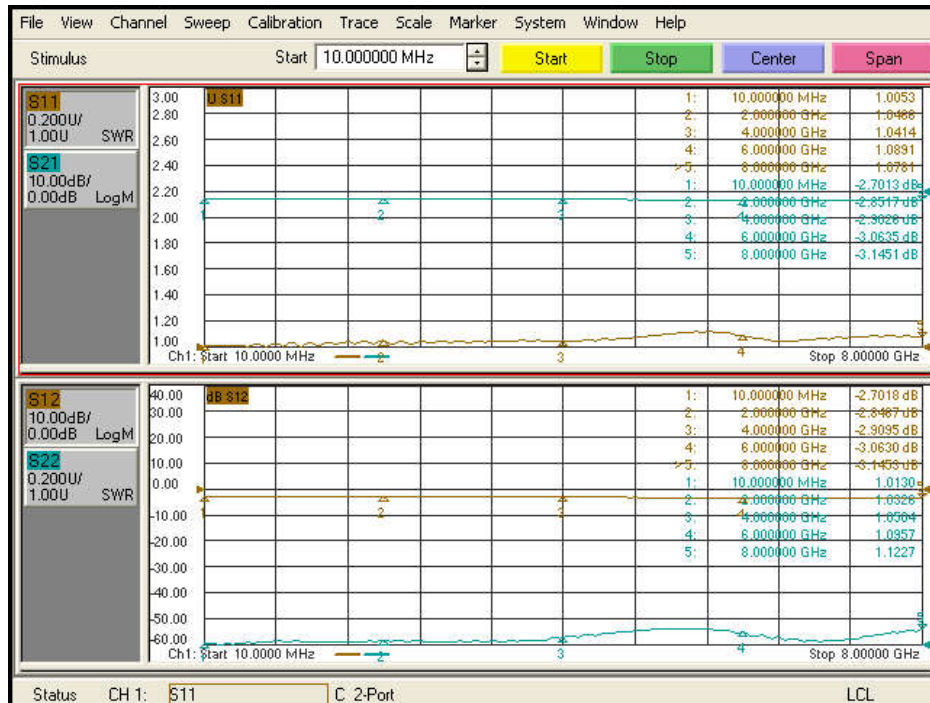
Imported N Attenuators, 5W

Frequency: DC ~ 18 GHz

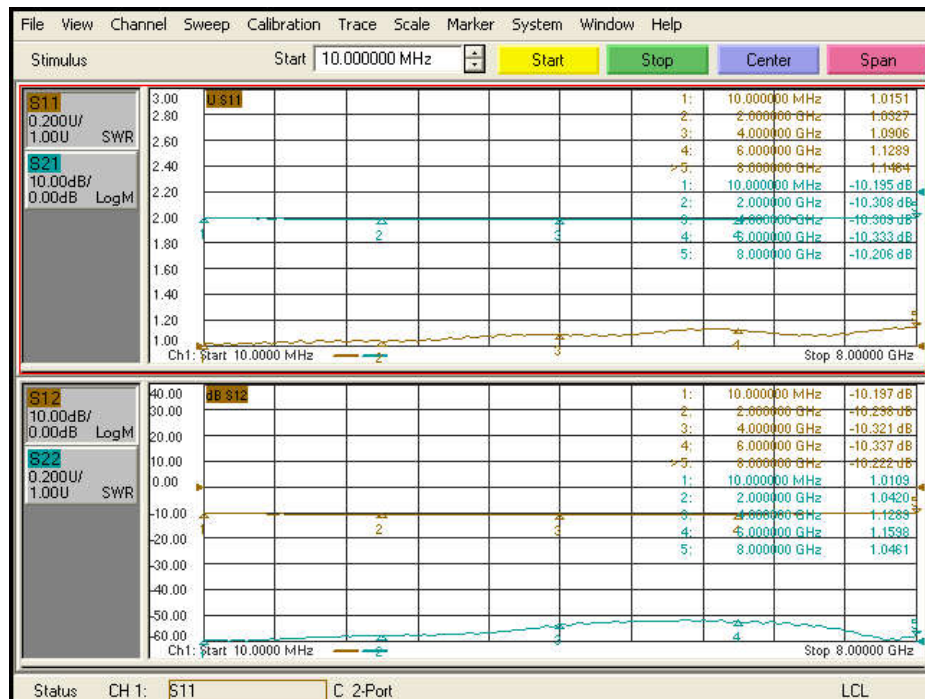
P/N: IHPA-??-5.. Series

INDE[®]

VNA Plot for IHPA-T1-5-03-8-N Attenuator (3dB/5W/8GHz)



VNA Plot for IHPA-T1-5-10-8-N Attenuator (10dB/5W/8GHz)



N15

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Imported N Attenuators, 10W

INDE®

Frequency: DC ~ 18 GHz

P/N: IHPA-??-10.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-D2-10-XX-4-N	DC-4	<1.15@3 GHz <1.20 @4 GHz	Fig 2	10 ¹⁾	±0.5	±0.5	±0.6	±0.6	±0.6	±0.8	N (M)-(F)
IHPA-D3-10-XX-4	DC-4	1.15	Fig 2	10 ²⁾	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	N (M)-(F)
IHPA-D1-10-XX-8-N	DC-8	1.30	Fig 1	10 ²⁾	/	/	±0.5	±0.5	±0.5	±0.6	N (M)-(F)
IHPA-D3-10-XX-8	DC-8	1.20	Fig 2	10 ²⁾	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	N (M)-(F)
IHPA-D1-10-XX-12.4-N	DC-12.4	1.35	Fig 1	10 ²⁾	/	/	±1.0	±1.0	±1.0	±1.0	N (M)-(F)
IHPA-D3-10-XX-12.4	DC-12.4	1.25	Fig 2	10 ²⁾	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	-0.3/ +0.6	N (M)-(F)
IHPA-D1-10-XX-18-N	DC-18	1.40	Fig 1	10 ²⁾	/	/	±1.0	±1.0	±1.2	±1.2	N (M)-(F)
IHPA-D3-10-XX-18	DC-18	1.30	Fig 2	10 ²⁾	-0.3/ +0.8	-0.3/ +0.8	-0.3/ +0.8	-0.3/ +0.8	-0.3/ +1.0	-0.3/ +1.0	N (M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 1W @125°C. Peak Power is 1kW(5us pulse width with 1% duty cycle)

2) Average Power at 25°C ambient temperature, derated linearly to 1W @125°C. Peak Power is 1kW(5us pulse width with 0.5% duty cycle)

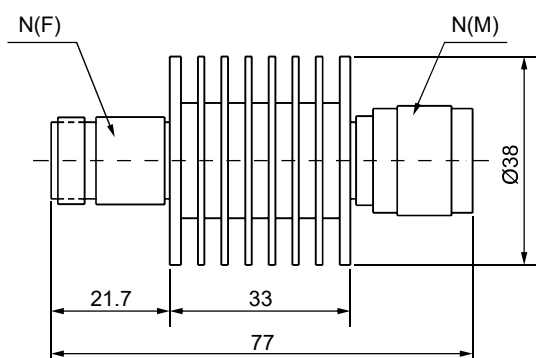


Fig 1

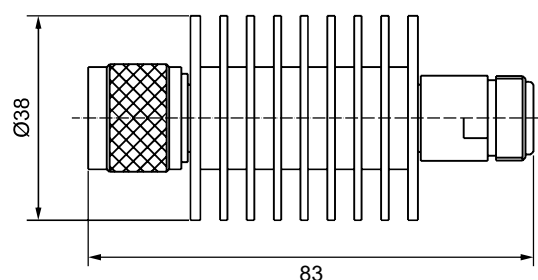


Fig 2

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N16

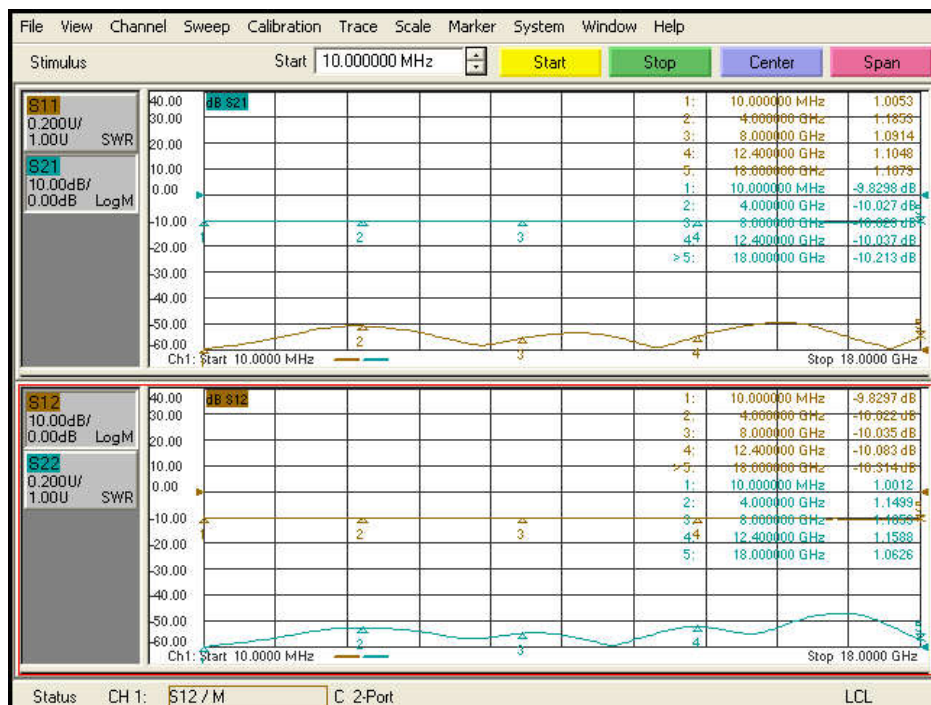
Imported N Attenuators, 10W

Frequency: DC ~ 18 GHz

P/N: IHPA-??-10.. Series

INDE[®]

VNA Plot for IHPA-D1-10-10-18-N Attenuator (10dB/10W/18GHz)



VNA Plot for IHPA-D1-10-10-8-N Attenuator (10dB/10W/8GHz)



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N16

Imported N High Power Attenuators, 25W

INDE®

Frequency: DC ~ 18 GHz

P/N: IHPA-??-25.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-D2-25-XX-4-N-A	DC-4	<1.05@1 GHz <1.10 @2 GHz <1.15@3 GHz <1.25 @4 GHz	Fig 2	25 ¹⁾	±0.5	±0.5	±0.6	±0.6	±0.6	±1.0	N(M)-(F)
IHPA-D1-25-XX-4-N-A	DC-4	1.20	Fig 1	25 ²⁾	/	/	±0.4	±0.4	±0.4	±0.75	N(M)-(F)
IHPA-D1-25-XX-8-N-A	DC-8	1.30	Fig 1	25 ²⁾	/	/	±0.5	±0.5	±0.5	±0.75	N(M)-(F)
IHPA-D1-25-XX-12.4-N-A	DC-12.4	1.35	Fig 1	25 ²⁾	/	/	±1.0	±1.0	±1.0	±1.0	N(M)-(F)
IHPA-D1-25-XX-18-N-A	DC-18	1.40	Fig 1	25 ²⁾	/	/	±1.0	±1.0	±1.25	±1.25	N(M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 2.5W @125°C. Peak Power is 1kW(5us pulse width with 2.5% duty cycle)

2) Average Power at 25°C ambient temperature, derated linearly to 2.5W @125°C. Peak Power is 1kW(5us pulse width with 1.25% duty cycle)

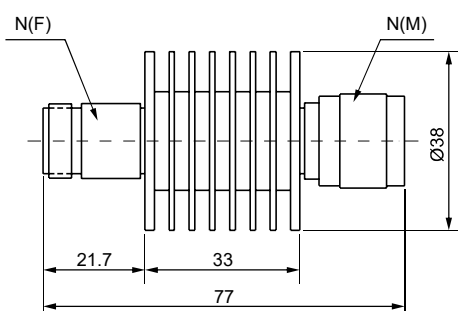


Fig 1

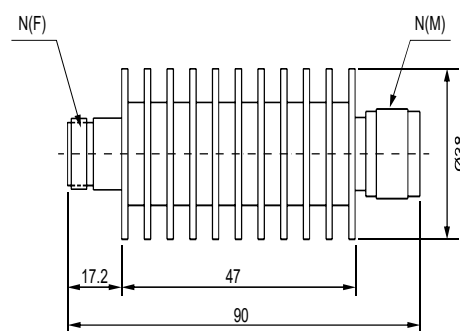


Fig 2

N17

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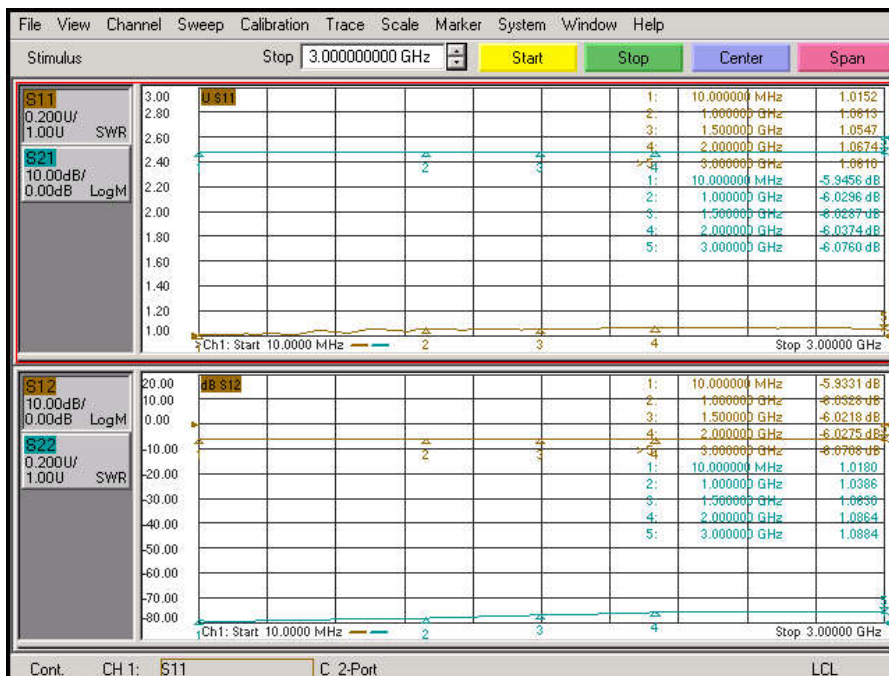
Imported N High Power Attenuators, 25W

Frequency: DC ~ 18 GHz

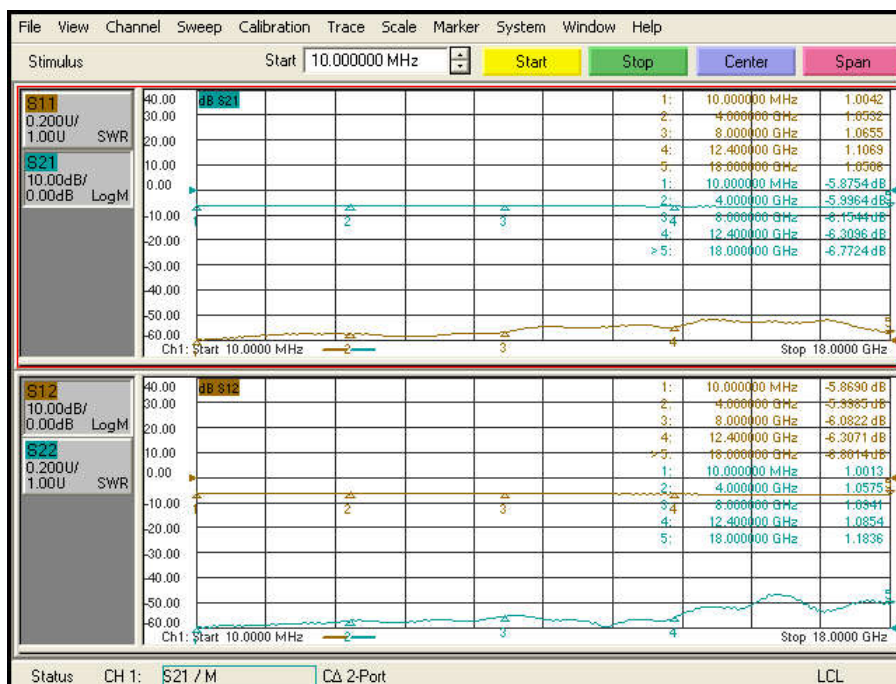
P/N: IHPA-??-25.. Series

INDE[®]

VNA Plot for IHPA-D1-25-20-4-N-A Attenuator (20dB/25W/4GHz)



VNA Plot for IHPA-D1-25-20-18-N-A Attenuator (20dB/25W/18GHz)



Imported N High Power Attenuators, 50W

INDE®

Frequency: DC ~ 18 GHz

P/N: IHPA-??-50.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-D1-50-XX-4-N-C	DC-4	<1.10 @2.5 GHz <1.15 @4 GHz	Fig 1	50 ¹⁾	±0.3	±0.3	±0.3	±0.3	±0.4	±0.5	N (M)-(F)
IHPA-D1-50-XX-8-N-C	DC-8	1.30	Fig 1	50 ¹⁾	±0.6	±0.6	±0.6	±0.6	±0.75	±1.0	N (M)-(F)
IHPA-D2-50-XX-18-N-C	DC-18	1.35	Fig 2	50 ¹⁾	-1/ +1.5	-1/ +1.5	-1/ +1.5	-1/ +1.5	±1.0	-1/ +1.5	N (M)-(F)

1) Average Power at 25°C ambient temperature, derated linearly to 5W @125°C. Peak Power is 5kW(5us pulse width with 1% duty cycle)

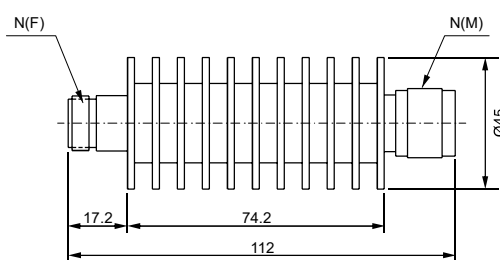


Fig 1

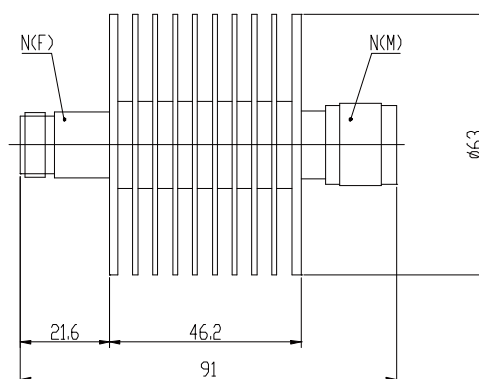


Fig 2

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N18

Imported N High Power Attenuators, 50W

Frequency: DC ~ 18 GHz

P/N: IHPA-??-50.. Series

INDE®

VNA Plot for IHPA-D1-50-10-8-N Attenuator (10dB/50W/8GHz)



VNA Plot for IHPA-D3-50-06-4-A Attenuator (6dB/50W/4GHz)



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N18

Imported N High Power Attenuators, 100W

INDE®

Frequency: DC ~ 18 GHz

P/N: IHPA-??-100.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-W1-100-XX-2.5-N-B	DC-2.5	1.15	Fig 1	100 ¹⁾	±0.4	±0.4	±0.3	±0.3	±0.3	±0.3	N (M)-(F)
IHPA-D2-100-XX-4-A	DC-4	<1.15@1 GHz <1.20 @2 GHz <1.30@3 GHz <1.35 @4 GHz	Fig 3	100 ²⁾	/	/	±0.75	±0.75	±0.75	±0.75	N (M)-(F)
IHPA-W1-100-XX-4-N-B	DC-4	1.20	Fig 1	100 ¹⁾	±0.6	±0.6	±0.5	±0.5	±0.5	±0.5	N (M)-(F)
IHPA-W1-100-XX-8-N-B	DC-8	1.35	Fig 1	100 ¹⁾	/	/	±1.0	±0.75	±0.75	±0.75	N (M)-(F)
IHPA-D1-100-XX-18-C	DC-18	1.40	Fig 2	100 ²⁾	±0.8	±1.0	-2.0/ +3.0	/	-2.0/ +2.5	±2.0	N(M)-(F)
IHPA-D1-100-XX-18	DC-18	1.45	Fig 4	100 ²⁾	-1.0/ +2.0	-1.0/ +3.0	-2.0/ +2.5	-1.5/ +2.5	-1.2/ +2.0	-1.2/ +2.0	N(M)-(F)

- 1) Av. Power @25°C amb. temperature, derated linearly to 10W @125°C. Peak Power is 5kW (5us pulse with 2% duty)
 2) Av. Power @25°C amb. temperature, derated linearly to 10W @125°C. Peak Power is 10kW (5us pulse with 1% duty)

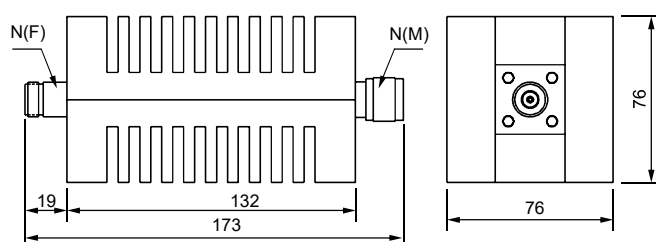


Fig 1

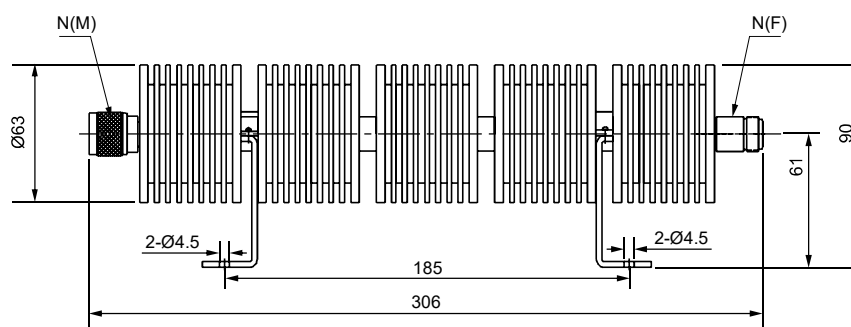


Fig 2

N19

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Imported N High Power Attenuators, 100W

Frequency: DC ~ 18 GHz

P/N: IHPA-??-100.. Series

INDE[®]

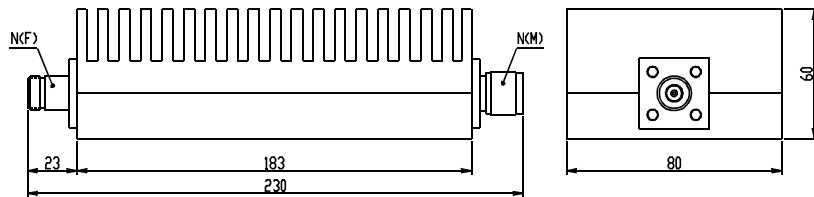


Fig 3

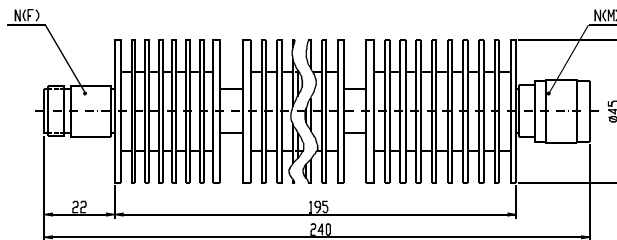
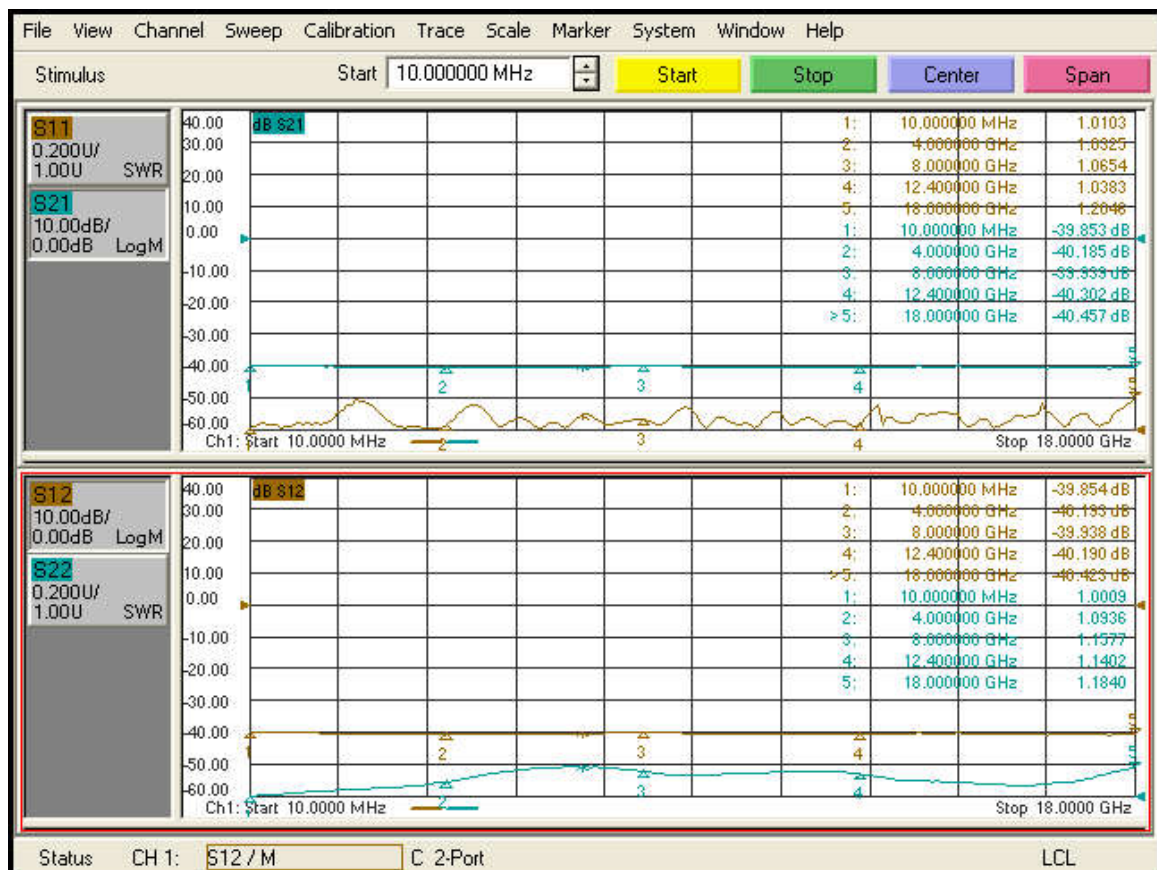


Fig 4

VNA Plot for IHPA-D1-100-40-18-C Attenuator (40dB/100W/18GHz)

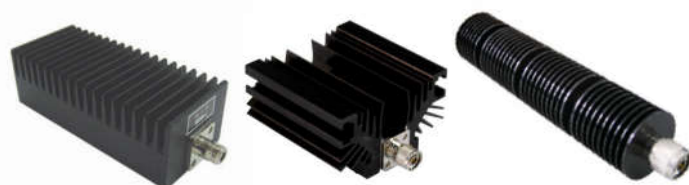


Imported N High Power Attenuators, 150W

INDE®

Frequency: DC ~ 18 GHz

P/N: IHPA-??-150.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-W1-150-XX-2.5-A	DC-2.5	1.15	Fig 1	150 ¹⁾	±0.4	±0.4	±0.3	±0.3	±0.3	±0.3	N (M)-(F)
IHPA-D2-150-XX-4-A	DC-4	<1.15@1 GHz <1.20@2 GHz <1.35@3 GHz <1.40@4 GHz	Fig 3	150 ¹⁾	/	/	±1.5	±1.5	±1.0	±1.0	N (M)-(F)
IHPA-W1-150-XX-4-N-A	DC-4	1.20	Fig 1	150 ¹⁾	±0.6	±0.6	±0.5	±0.5	±0.5	±0.5	N (M)-(F)
IHPA-W1-150-XX-6-N-A	DC-6	1.30	Fig 1	150 ¹⁾	±0.8	±0.8	±0.75	±0.75	±0.75	±0.75	N (M)-(F)
IHPA-W1-150-XX-8-N-A	DC-8	1.35	Fig 1	150 ¹⁾	/	/	±1.0	±0.75	±0.75	±0.75	N (M)-(F)
IHPA-D1-150-XX-18-A	DC-18	1.45	Fig 2	150 ²⁾	-1.0/ +2.0	-0.7/ +3.5	-2.0/ +2.5	-3.0/ +2.0	-1.0/ +1.5	±1.5	N (M)-(F)

1) Average Power @25°C amb. temperature, derated linearly to 15W @125°C. Peak Power is 5kW(5us pulse with 3% duty)

2) Average Power @25°C amb. temperature, derated linearly to 15W @125°C. Peak Power is 1kW(5us pulse with 15% duty)

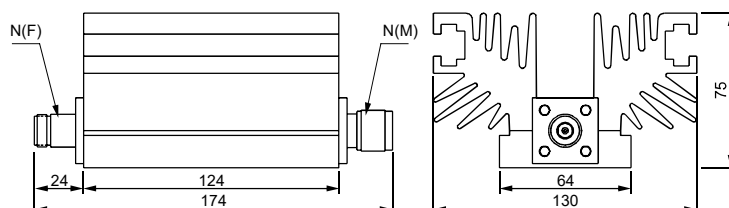


Fig 1

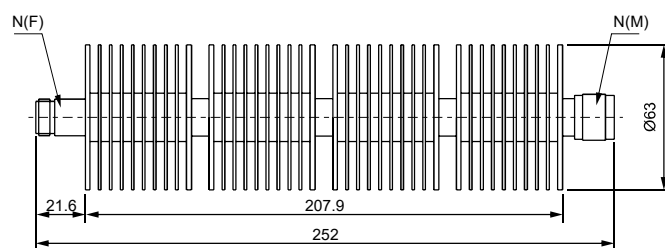


Fig 2

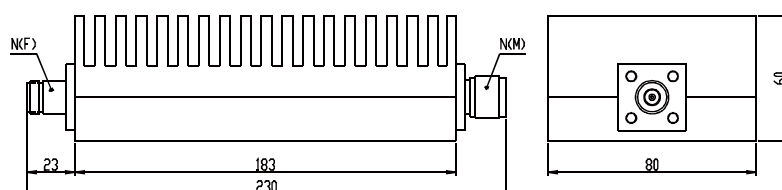


Fig 3

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N20

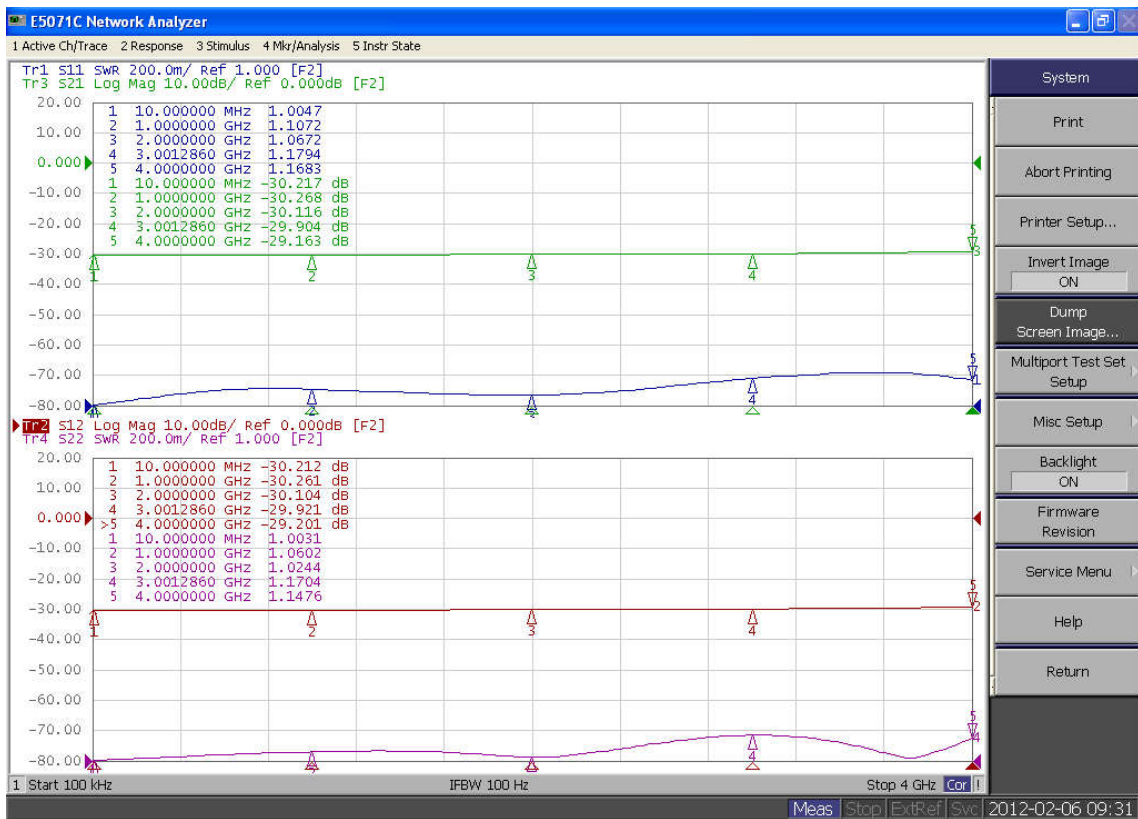
Imported N High Power Attenuators, 150W

Frequency: DC ~ 18 GHz

P/N: IHPA-??-150.. Series

INDE[®]

VNA Plot for IHPA-D2-150-30-4 Attenuator (30dB/150W/4GHz)



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N20

Imported N High Power Attenuators, 250W

INDE®

Frequency: DC ~ 12.4 GHz

P/N: IHPA-??-250.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)						Connector
					3	6	10	20	30	40	
IHPA-D2-250-XX-4	DC-4	<1.20@1.5 GHz <1.25@2 GHz <1.35@3 GHz <1.40@4 GHz	Fig 3	250 ²⁾	/	/	±1.5	±1.5	±1.0	±1.0	N (M)-(F)
IHPA-W2-250-XX-4-N-B	DC-4	<1.10@1.5 GHz <1.25@4 GHz	Fig 1	250 ¹⁾	/	/	±1.0	±0.5	±0.5	±0.5	N (M)-(F)
IHPA-W2-250-XX-6-N-B	DC-6	<1.25@5 GHz <1.30@6 GHz	Fig 1	250 ¹⁾	/	/	/	±0.6	±0.6	±0.6	N (M)-(F)
IHPA-W2-250-XX-8-N-B	DC-8	1.35	Fig 1	250 ¹⁾	/	/	/	±0.75	±0.75	±0.75	N (M)-(F)
IHPA-D1-150-XX-12.4	DC-12.4	1.40	Fig 2	250 ²⁾	/	/	-1.5/ +2.0	-2.5/ +1.0	±2.0	±2.0	N (M)-(F)

1) Average Power @25°C amb. temperature, derated linearly to 15W @125°C. Peak Power is 5kW(5us pulse with 5% duty)

2) Average Power @25°C amb. temperature, derated linearly to 15W @125°C. Peak Power is 10kW(5us pulse with 2.5% duty)

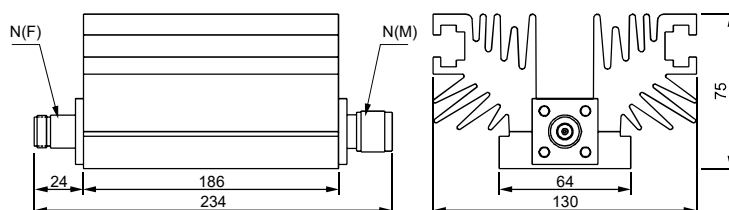


Fig 1

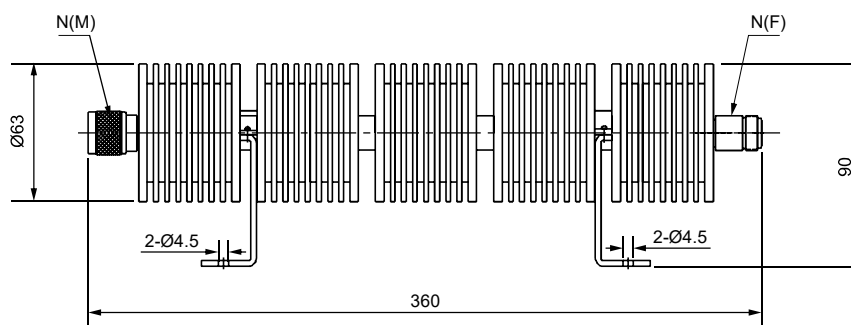


Fig 2

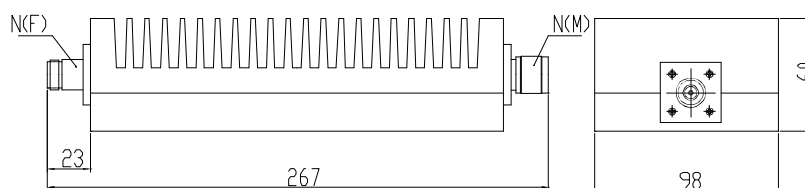


Fig 3

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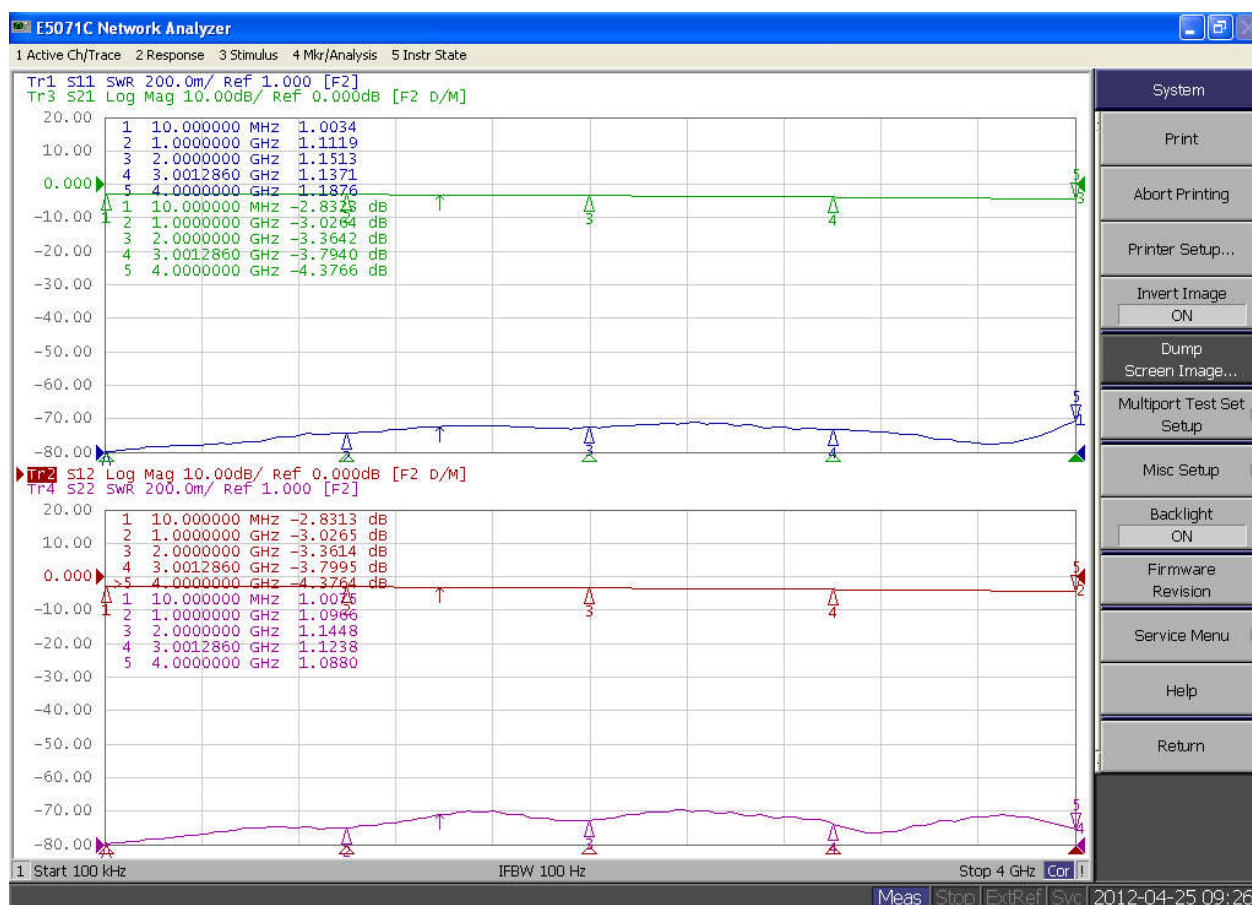
Imported N High Power Attenuators, 250W

Frequency: DC ~ 12.4 GHz

P/N: IHPA-??-250.. Series

INDE[®]

VNA Plot for IHPA-W2-250-20-4-N-B Attenuator (20dB/250W/4GHz)



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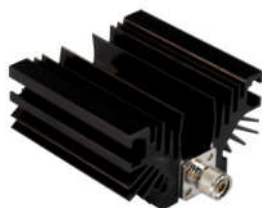
N20

Imported N High Power Attenuators, 300W

INDE®

Frequency: DC ~ 10 GHz

P/N: IHPA-??-300.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)					Connector
					10	20	30	40	50	
IHPA-D2-300-XX-4-B	DC-4	<1.2@1 GHz <1.25 @2 GHz <1.35@3 GHz <1.50 @4 GHz	Fig 1	300 ¹⁾	±2.0	±2.0	±1.5	±1.5	±1.5	N (M)-(F)
IHPA-W1-300-XX-4-N	DC-4	1.25	Fig 2	300 ²⁾	/	/	±0.5	±0.5	±0.5	N (M)-(F)
IHPA-W1-300-XX-8N	DC-8	1.40	Fig 2	300 ²⁾	/	/	±1.0	±1.0	±1.0	N (M)-(F)
IHPA-W1-300-XX-10	DC-10	1.45	Fig 2	300 ²⁾	/	/	±1.0	±1.0	±1.0	N (M)-(F)

1) Average Power @25°C amb. temperature, derated linearly to 30W @125°C. Peak Power is 10kW(5us pulse with 3% duty)

2) Average Power @25°C amb. temperature, derated linearly to 30W @125°C. Peak Power is 5kW(5us pulse with 6% duty)

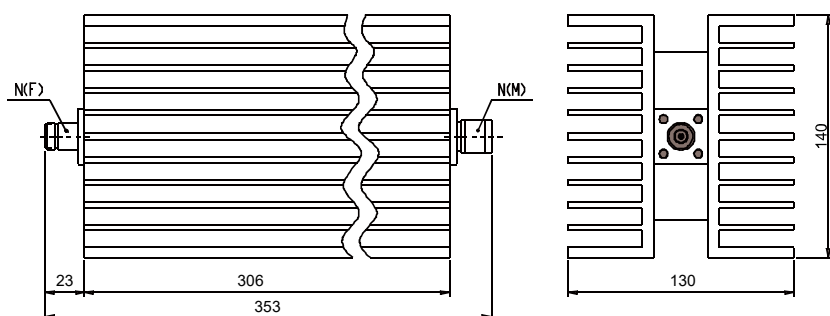


Fig 1

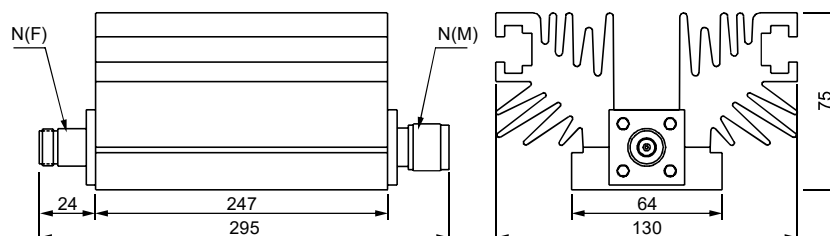


Fig 2

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N20

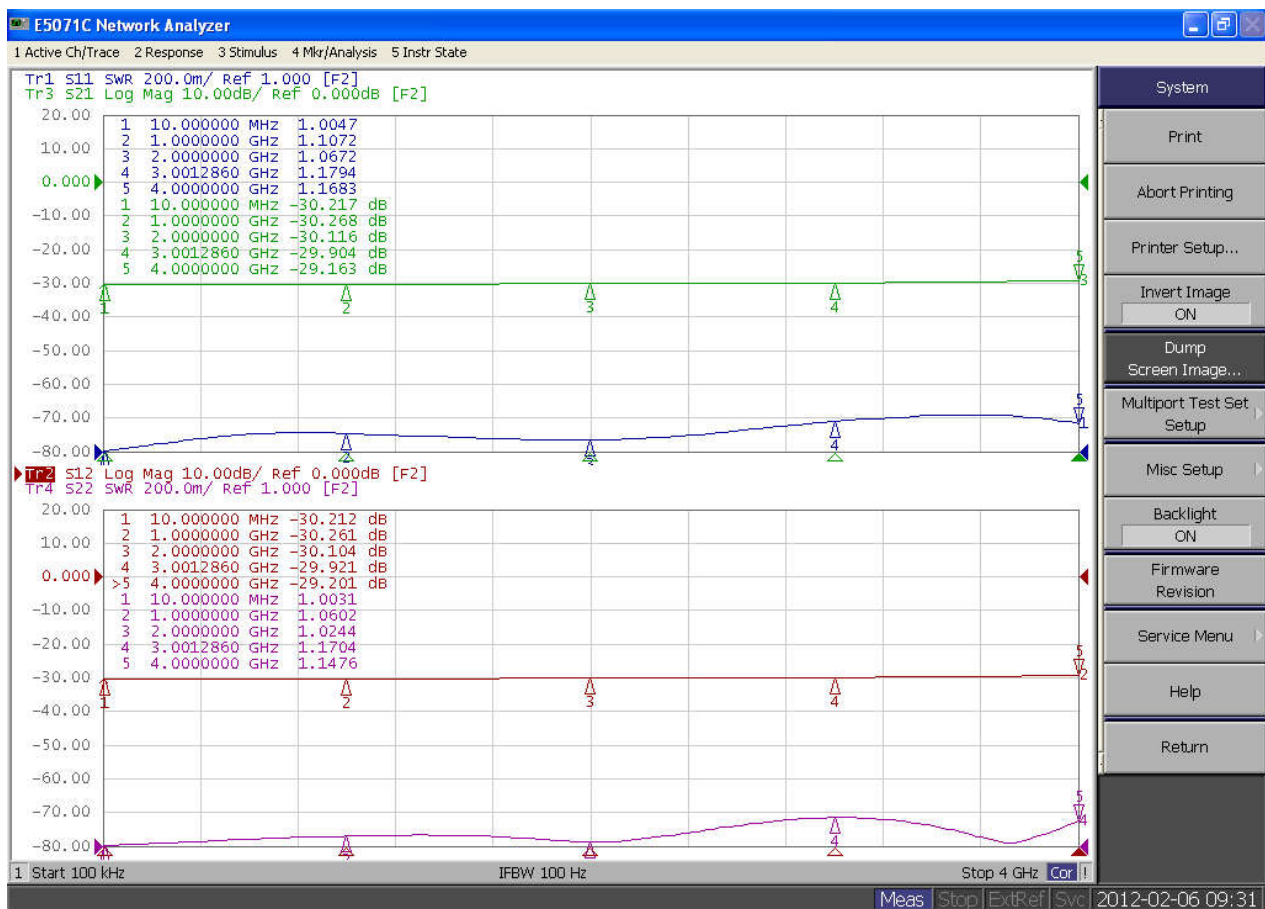
Imported N High Power Attenuators, 300W

Frequency: DC ~ 10 GHz

P/N: IHPA-??-300.. Series

INDE[®]

VNA Plot for IHPA-W1-300-20-4-N Attenuator (20dB/300W/4GHz)



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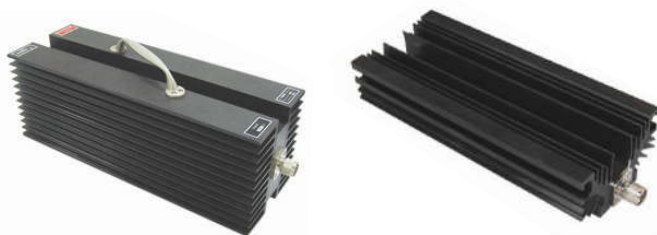
N20

Imported N High Power Attenuators, 500W

INDE®

Frequency: DC ~ 10 GHz

P/N: IHPA-??-500.. Series



Impedance : 50 Ω

Operating Temp : -55°C ~125°C

Ordering Code	Freq. (GHz)	VSWR (max)	Figure	Avg. Power (W)	Attenuation and Accuracy (dB)					Connector
					10	20	30	40	50	
IHPA-D2-500-XX-4-B	DC-4	<1.2@1 GHz <1.25 @2 GHz <1.35@3 GHz <1.50 @4 GHz	Fig 1	500 ¹⁾	±2.0	±2.0	±1.5	±1.5	±1.5	N(M)-N(F)
IHPA-W1-500-XX-4-N	DC-4	1.25	Fig 2	500 ²⁾	-	-	±0.5	±0.5	±0.5	N(M)-N(F)
IHPA-W1-500-XX-6-N	DC-6	1.30	Fig 2	500 ²⁾	-	-	-	±0.6	±0.6	N(M)-N(F)
IHPA-W1-500-XX-8-N	DC-8	1.40	Fig 2	500 ²⁾	-	-	-	±0.8	±0.8	N(M)-N(F)
IHPA-W1-500-XX-10-N	DC-10	1.45	Fig 2	500 ²⁾	-	-	-	±1.0	±1.0	N(M)-N(F)

1) Average Power @25°C amb. temperature, derated linearly to 50W @125°C. Peak Power is 10kW(5us pulse with 5% duty)

2) Average Power @25°C amb. temperature, derated linearly to 50W @125°C. Peak Power is 5kW(5us pulse with 5% duty)

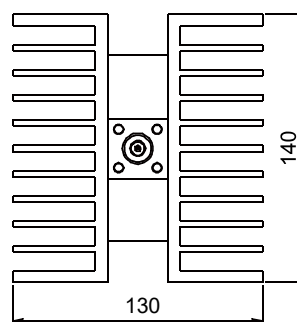
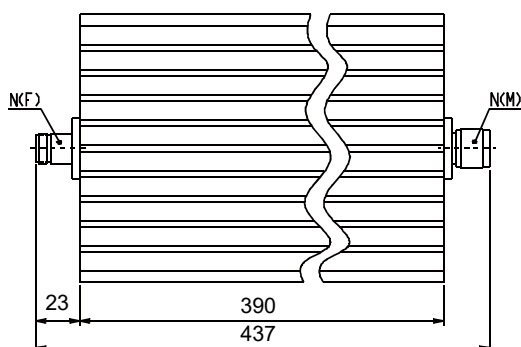


Fig 1

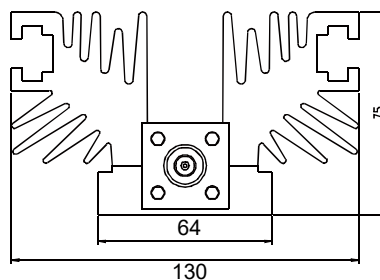
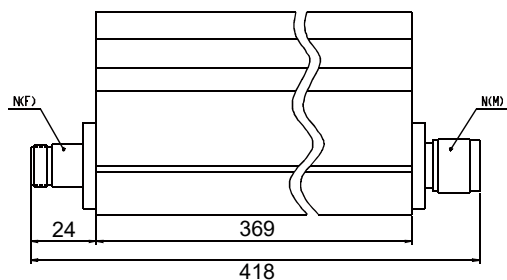


Fig 2

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N20

Imported N High Power Attenuators, 500W

Frequency: DC ~ 10 GHz

P/N: IHPA-??-500.. Series

INDE[®]

VNA Plot for IHPA-W1-500-40-10-N Attenuator (40dB/500W/10GHz)



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N20