

NBM-1-6000

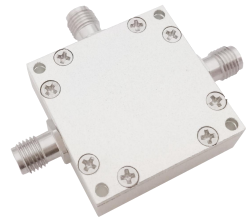
1~6000MHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast



Electrical

LO/RF Frequency:	1~6000MHz
LO Input Power:	+10dBm typ.
IF Frequency:	DC~1000MHz
Conversion Loss:	8dB typ.
LO & RF Isolation:	35dB typ.
LO & IF Isolation:	25dB typ.
IF & RF Isolation:	20dB typ.

Absolute Maximum Ratings

RF Input Power:	+17dBm
IF Current:	40mA

Mechanical

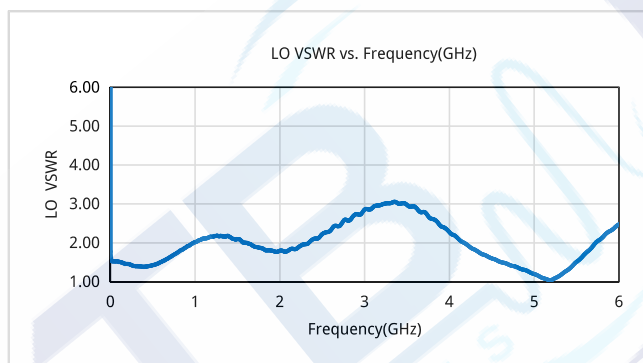
Size*1:	30*30*10mm 1.181*1.181*0.394in
Connectors:	SMA Female

[1] Exclude connectors.

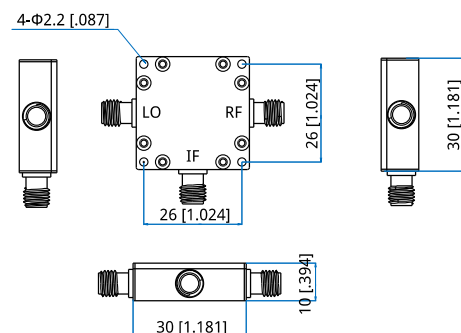
Environmental

Operating Temperature:	-40~+85°C
Non-operating Temperature:	-55~+100°C

Typical Performance Curves



Outline Drawings



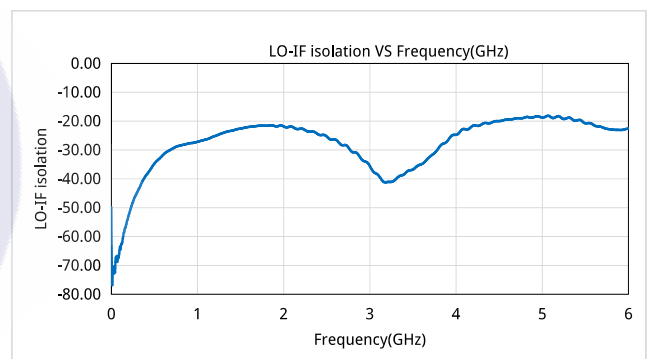
Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

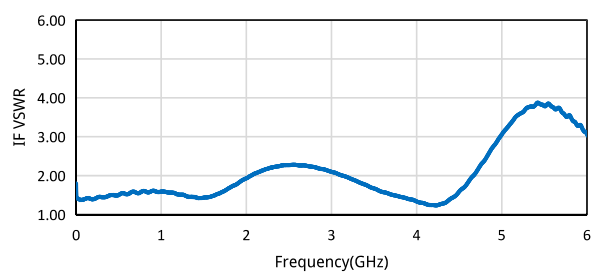
NBM-1-6000

Customization is available upon request.

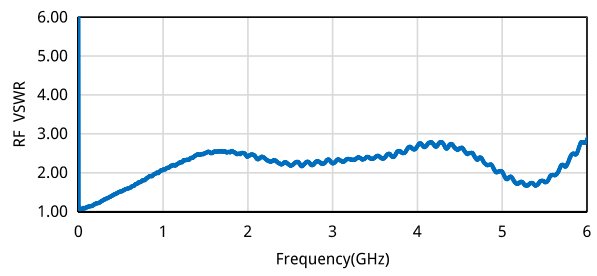


Balanced Mixers

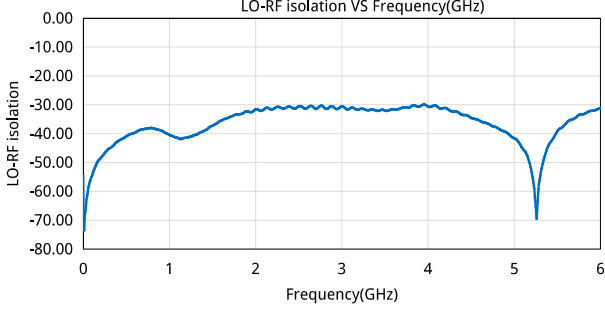
IF VSWR vs. Frequency(GHz)



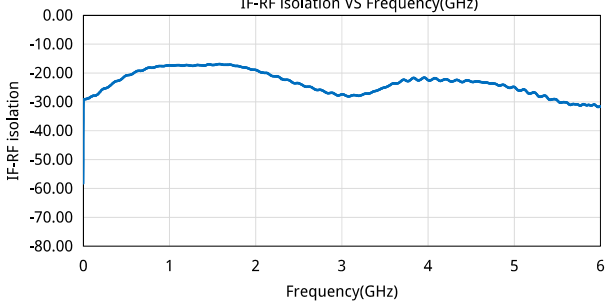
RF VSWR vs. Frequency(GHz)



LO-RF isolation VS Frequency(GHz)



IF-RF isolation VS Frequency(GHz)



NBM-10-2000

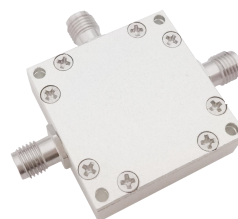
10~2000MHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast



Electrical

LO/Rf Frequency:	10~2000MHz
LO Input Power:	7dBm typ.
IF Frequency:	10~1000MHz
Conversion Loss:	10dB typ.
LO & RF Isolation:	30dB typ.
LO & IF Isolation:	40dB typ.
IF & RF Isolation:	20dB typ.

Absolute Maximum Ratings

RF Input Power:	+17dBm
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Mechanical

Size*1:	30*30*10mm 1.181*1.181*0.394in
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Connectors: SMA Female

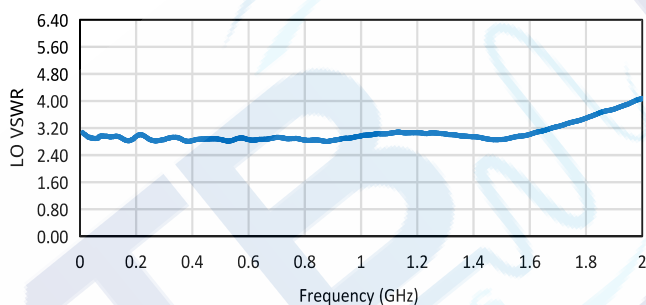
[1] Exclude connectors.

Environmental

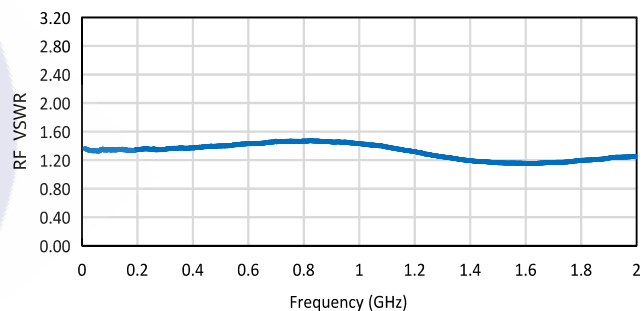
Operating Temperature:	-20~+70°C
Non-operating Temperature:	-40~+85°C

Typical Performance Curves

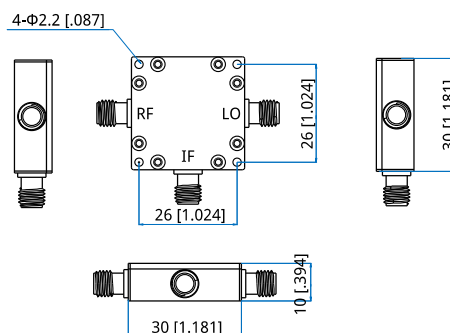
LO VSWR vs. Frequency
Test Power:7dBm



RF VSWR vs. Frequency



Outline Drawings



Unit: mm [in]

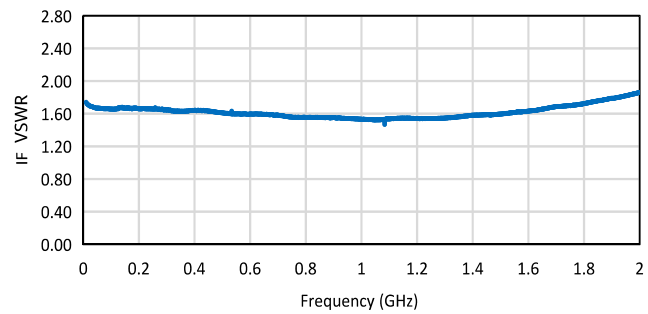
Tolerance: ±0.2mm [±0.008in]

How To Order

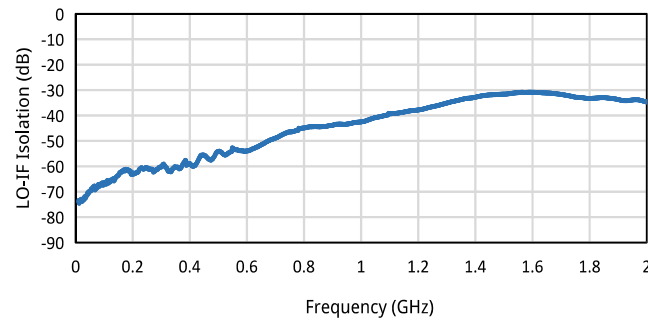
NBM-10-2000

Customization is available upon request.

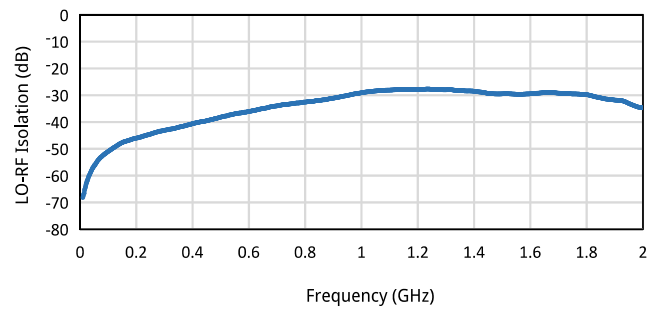
IF VSWR vs. Frequency



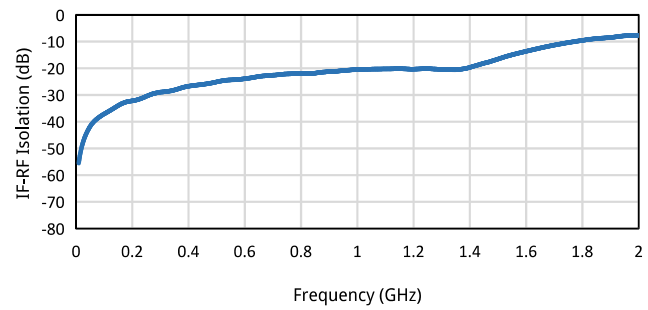
LO-IF Isolation vs. Frequency



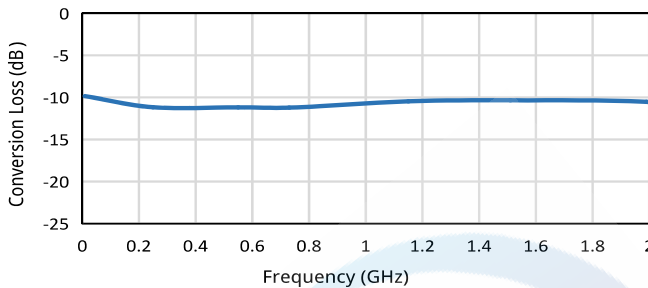
LO-RF Isolation vs. Frequency



IF-RF Isolation vs. Frequency



Conversion loss vs. Frequency



LO Power: 7dBm IF Frequency: 30MHz

NBM-2000-24000

2~24GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast



Electrical

RF Frequency:	2~24GHz
LO Frequency:	2~24GHz
LO Input Power:	+7~15dBm
IF Frequency:	DC~4GHz
Conversion Loss:	10dB typ.
Input Power(P1dB):	3dBm typ.
Isolation (LO, RF):	40dB typ.
Isolation (LO, IF):	25dB typ.
Isolation (RF, IF):	25dB typ.
VSWR:	3 typ.

Absolute Maximum Ratings

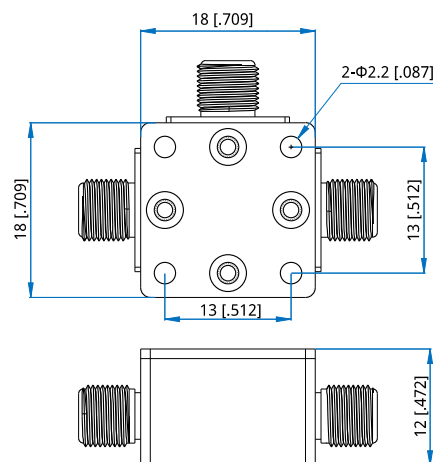
RF Input Power:	+30dBm
IF Current:	30mA

Mechanical

Size ^{*1} :	18*18*12mm 0.709*0.709*0.472in
Connectors:	SMA Female
Mounting:	2-Φ2.2mm through-hole

[1] Exclude connectors.

Outline Drawings



Unit: mm [in]

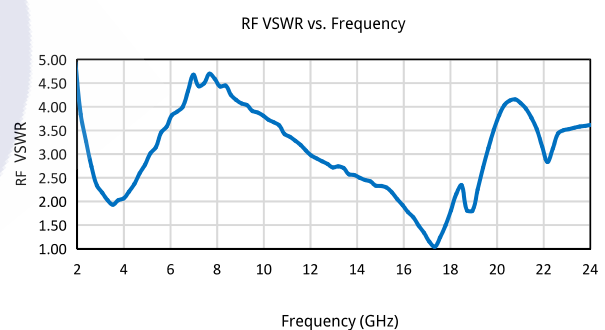
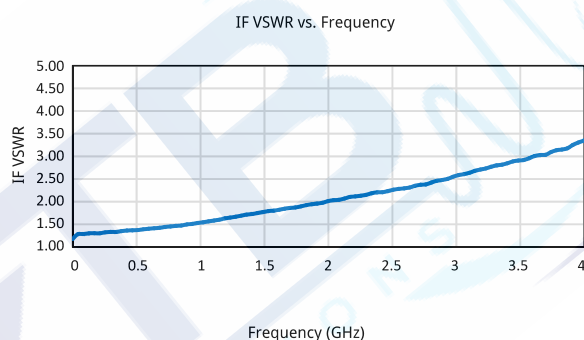
Tolerance: ±0.2mm [±0.008in]

How To Order

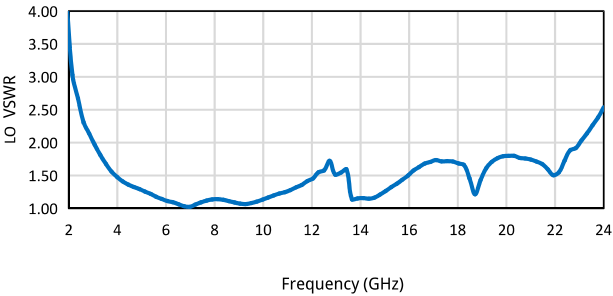
NBM-2000-24000

Customization is available upon request.

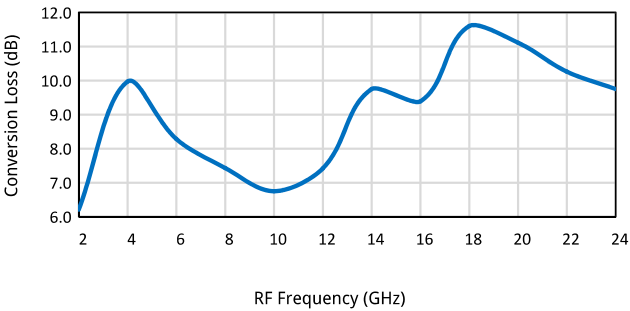
Typical Performance Curves



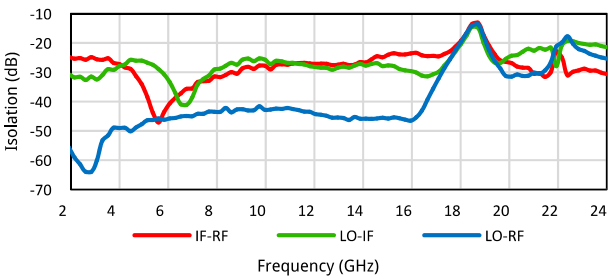
LO VSWR vs. Frequency



Downconversion Loss vs. Frequency



Isolation vs. Frequency



NBM-2500-8000

2.5~8GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	2.5~8GHz
LO Frequency:	2.5~8GHz
LO Input Power:	+13dBm typ
IF Frequency:	DC~4GHz
Conversion Loss:	10dB typ.
RF/IF Input Power:	10dBm max.
Isolation (LO, RF):	18~25dB typ.
Isolation (LO, IF):	15~20dB typ.
Isolation (RF, IF):	8~15dB typ.

Mechanical

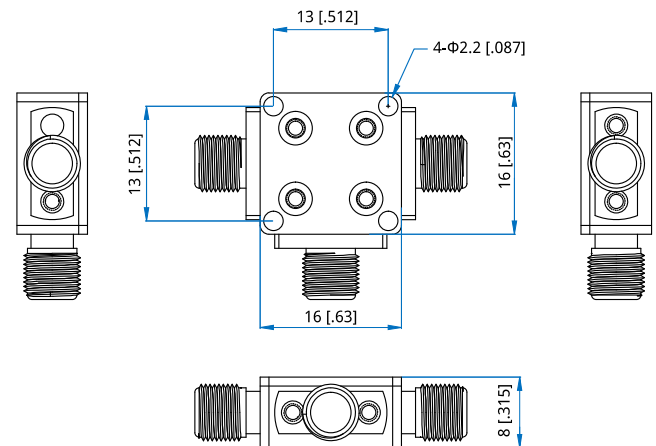
Size*1:	16*16*8mm 0.63*0.63*0.315in
Connectors:	SMA Female
Mounting:	4-Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature: -40~+85°C

Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-2500-8000

Customization is available upon request.

NBM-2500-18000

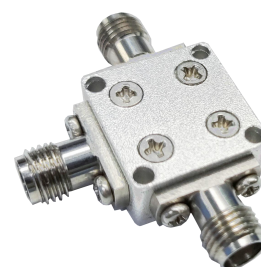
2.5~18GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast



Electrical

RF Frequency:	2.5~18GHz
LO Frequency:	2.5~18GHz
LO Input Power:	+13dBm typ.
IF Frequency:	DC~6GHz
Conversion Loss:	10dB typ.
Isolation (LO, RF):	30dB typ.
Isolation (LO, IF):	25dB typ.
Isolation (RF, IF):	16dB typ.

Absolute Maximum Ratings*1

RF/IF Input Power:	16dBm
LO Input Power:	20dBm

[1] Permanent damage may occur if any of these limits are exceeded.

Mechanical

Size*2:	16*13*8mm 0.63*0.512*0.315in
Connectors:	SMA Female
Mounting:	4*Φ2.2mm through-hole

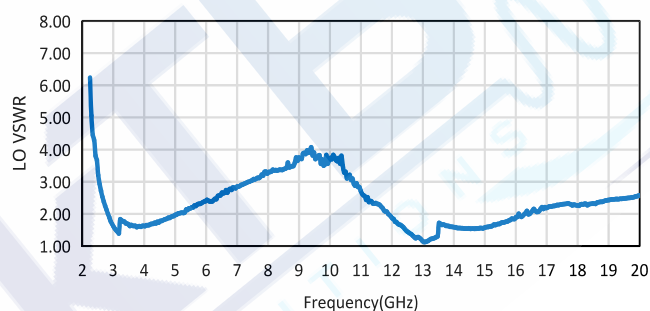
[2] Exclude connectors.

Environmental

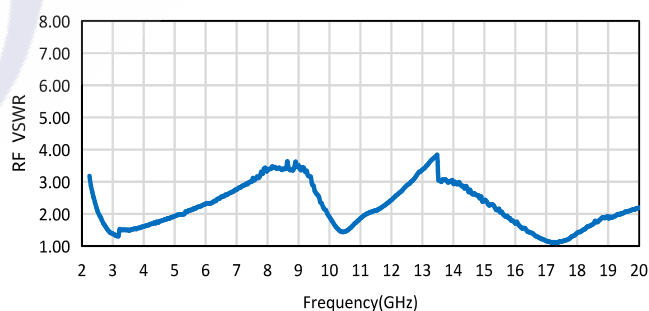
Operating Temperature:	-40~+85°C
Non-operating Temperature:	-55~+125°C

Typical Performance Curves

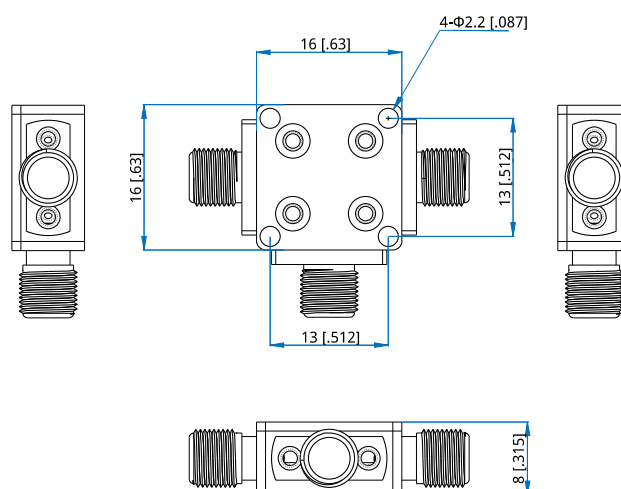
LO VSWR vs. Frequency



RF VSWR vs. Frequency



Outline Drawings



Unit: mm [in]

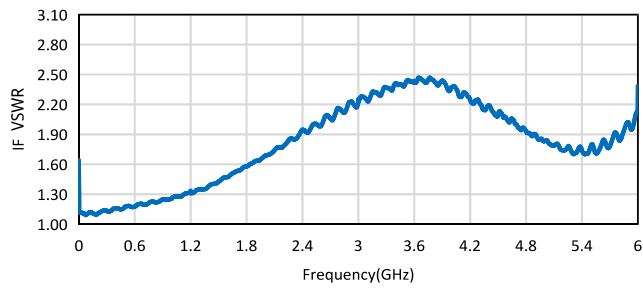
Tolerance: ±0.2mm [±0.008in]

How To Order

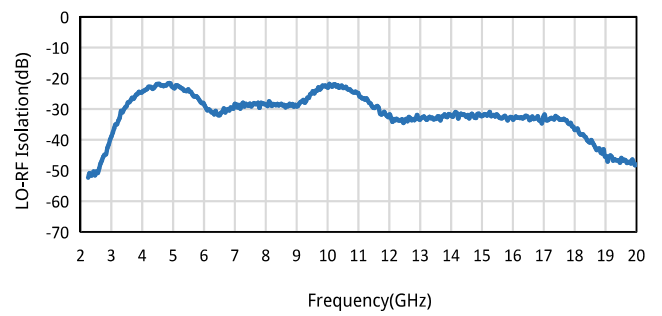
NBM-2500-18000

Customization is available upon request.

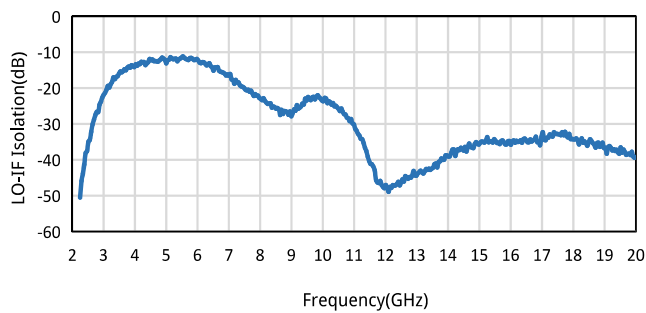
IF VSWR vs. Frequency



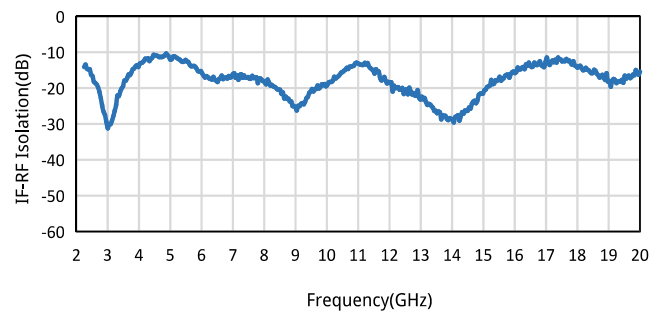
LO-RF Isolation vs. Frequency



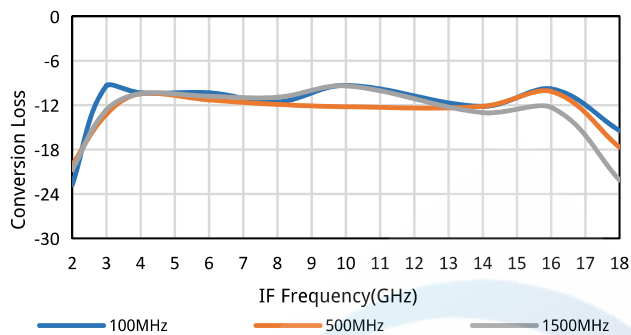
LO-IF Isolation vs. Frequency



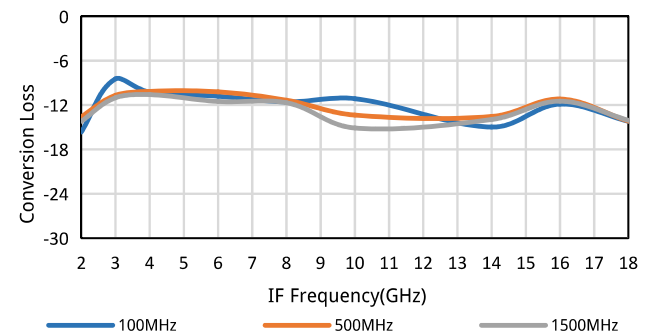
IF-RF Isolation vs. Frequency



Conversion loss vs. Frequency (High-Side-LO)



Conversion loss vs. Frequency (Low-Side-LO)



NBM-5000-8000

5~8GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	5~8GHz
LO Frequency:	4.5~8GHz
LO Input Power:	+17dBm typ.
IF Frequency:	0.5~3GHz
Conversion Loss:	9dB typ.
RF/IF Input Power:	15dBm max.
Isolation (LO, RF):	55dB typ.
Isolation (LO, IF):	35~42dB typ.
Isolation (RF, IF):	13~20dB typ.

Mechanical

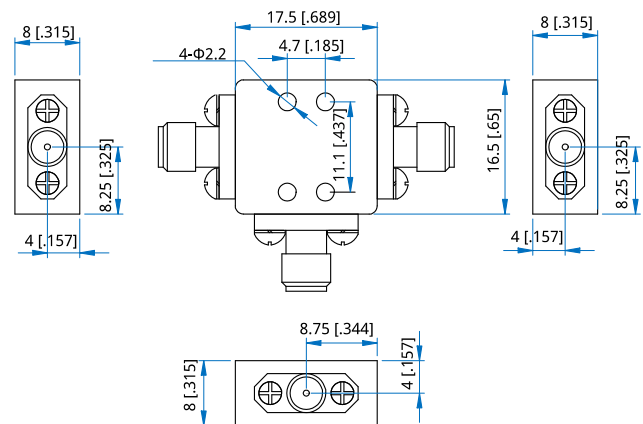
Size*1:	17.5*16.5*8mm 0.689*0.65*0.315in
Connectors:	SMA Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature: -40~+85°C

Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-5000-8000

Customization is available upon request.

NBM-6000-8000

6~8GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	6~8GHz
LO Frequency:	7~10GHz
LO Input Power:	13dBm typ.
IF Frequency:	DC~2GHz
Conversion Loss:	9dB typ.
RF/IF Input Power:	8dBm max.
Isolation (LO, RF):	17~25dB typ.
Isolation (LO, IF):	20~28dB typ.
Isolation (RF, IF):	15~25dB typ.

Mechanical

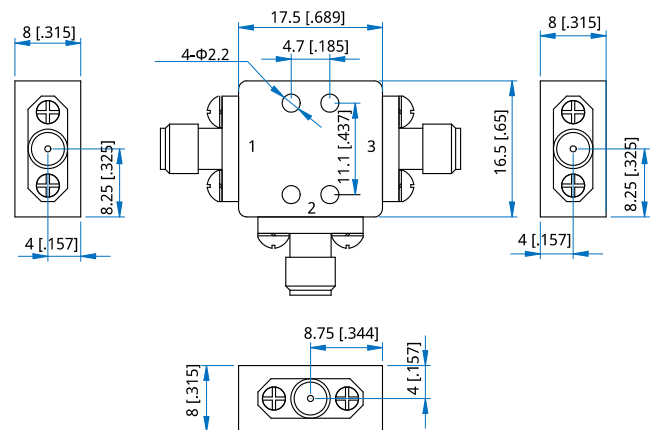
Size*1:	17.5*16.5*8mm 0.689*0.65*0.315in
Connectors:	SMA Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature:	-40~+85°C
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Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-6000-8000

Customization is available upon request.

NBM-6000-26000

6~26GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	6~26GHz
LO Frequency:	6~26GHz
LO Input Power:	+13dBm typ.
IF Frequency:	DC~8GHz
Conversion Loss:	9dB typ.
RF/IF Input Power:	10dBm max.
Isolation (LO, RF):	37~39dB typ.
Isolation (LO, IF):	21~37dB typ.
Isolation (RF, IF):	5~20dB typ.

Mechanical

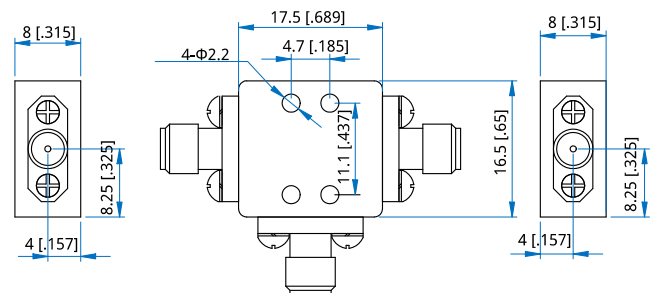
Size ^{*1} :	17.5*16.5*8mm 0.689*0.65*0.315in
Connectors:	SMA Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature: -40~+85°C

Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-6000-26000

Customization is available upon request.

NBM-10000-44000
10~44GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF/LO Frequency:	10~44GHz
LO Input Power:	15dBm typ.
IF Frequency:	DC~14GHz
Conversion Loss:	10dB typ.
LO/IF input Voltage:	11dBm max.
Isolation (LO, RF):	47dB typ.
Isolation (LO, IF):	49dB typ.
Isolation (RF, IF):	39dB typ.

Mechanical

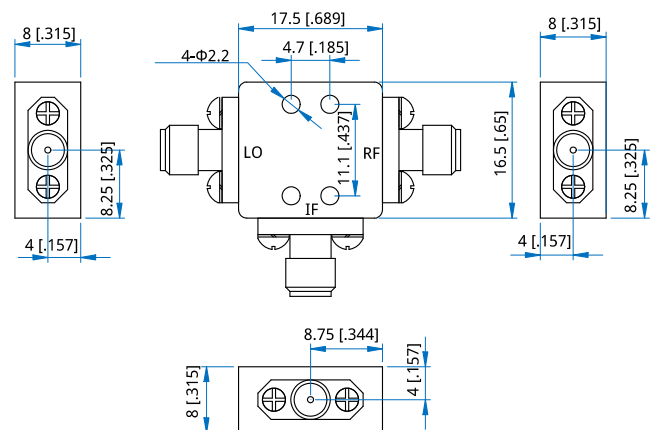
Size*1:	17.5*16.5*8mm 0.689*0.65*0.315in
Connectors:	2.92mm Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature: -40~+85℃

Outline Drawings



Unit: mm [in]

Tolerance: $\pm 0.2\text{mm}$ [$\pm 0.008\text{in}$]

How To Order

NBM-10000-44000

Customization is available upon request.

NBM-10870-11370

10.87~11.37GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	10.87~11.37GHz
LO Frequency:	8.87GHz
LO Power:	+13dBm
IF Frequency:	2~2.5GHz
Conversion Loss:	8dB typ.
Noise Figure:	8dB typ.
VSWR:	1.8 typ.
Isolation (LO, RF):	30dB typ.
Isolation (LO, IF):	30dB typ.
Isolation (RF, IF):	20dB typ.
Third Order	20dBm typ.
Intermodulation (Input):	
P1dB:	7dBm typ.

Mechanical

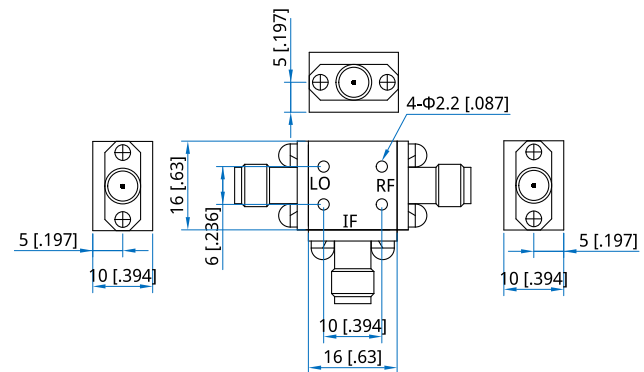
Size ^{*1} :	16*16*10mm 0.630*0.630*0.394in
Weight:	100g typ.
Connectors:	SMA Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature:	-40~+70°C
Non-operating Temperature:	-55~+80°C

Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-10870-11370

Customization is available upon request.

NBM-18000-40000

18~40GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	18~40GHz
LO Frequency:	26~33GHz
LO Input Power:	13dBm typ.
IF Frequency:	6~8GHz
Conversion Loss:	10dB typ.
RF/IF Input Power:	15dBm max.
Isolation (LO, RF):	41dB typ.
Isolation (LO, IF):	32dB typ.
Isolation (RF, IF):	17dB typ.

Mechanical

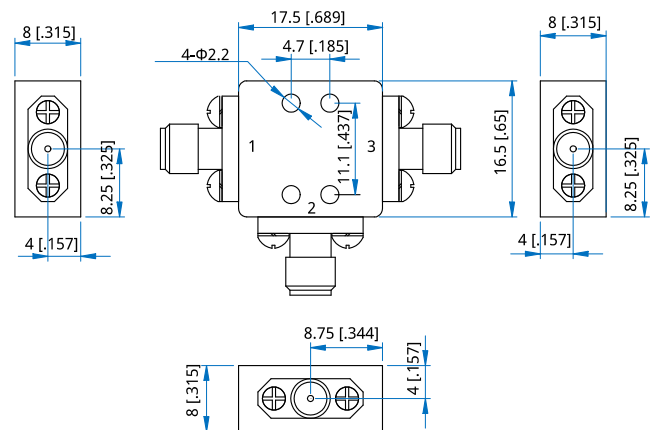
Size ^{*1} :	17.5*16.5*8mm 0.689*0.65*0.315in
IF Connectors:	SMA Female
RF/LO Connectors:	2.92mm Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature: -40~+85°C

Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-18000-40000

Customization is available upon request.

NBM-20000-50000

20~50GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF/LO Frequency:	20~50GHz
RF Input Power:	10dBm max.
LO Input Power:	15dBm max.
IF Frequency:	DC~16GHz
Conversion Loss:	13dB max.
LO-RF Isolation:	20dB min.
LO Power:	13dBm max.
RF Input VSWR:	3.5max.
IF Input VSWR:	2max.
Voltage:	+5V

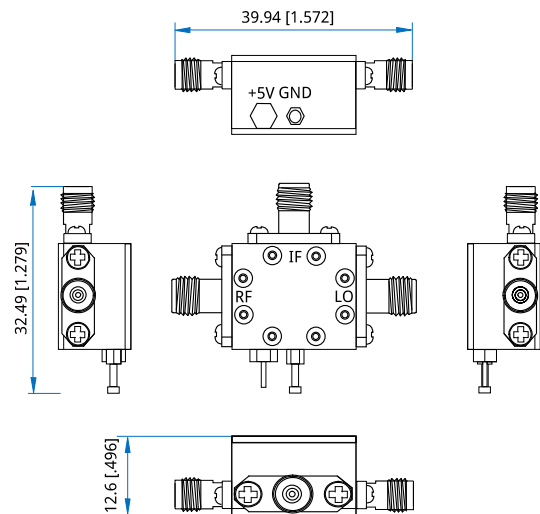
Mechanical

Size:	39.94*32.49*12.6mm 1.572*1.279*0.496in
RF Connectors:	2.4mm Female
IF Connectors:	2.92mm Female
LO Connectors:	2.4mm Female

Environmental

Operating Temperature:	10~+40°C
Non-operating Temperature:	0~+50°C

Outline Drawings



Unit: mm [in]

Tolerance: $\pm 0.2\text{mm}$ [$\pm 0.008\text{in}$]

How To Order

NBM-20000-50000

Customization is available upon request.

NBM-24000-40000

24~40GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	24~40GHz
LO Frequency:	24~40GHz
LO Input Power:	+9dBm typ
IF Frequency:	DC~20GHz
Conversion Loss:	10dB typ.
RF/IF Input Power:	15dBm max.
Isolation (LO, RF):	40dB typ.
Isolation (LO, IF):	30dB typ.
Isolation (RF, IF):	20dB typ.

Mechanical

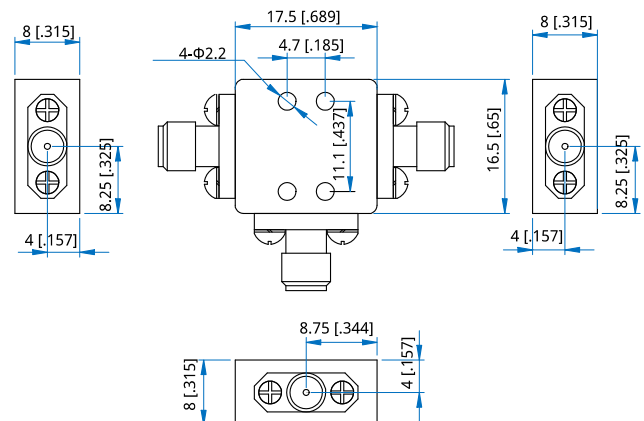
Size*1:	17.5*16.5*8mm 0.689*0.65*0.315in
IF Connectors:	SMA Female
RF/LO Connectors:	2.92mm Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature: -40~+85°C

Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-24000-40000

Customization is available upon request.

NBM-25000-27500

25~27.5GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	25GHz ~ 27.5GHz
LO Frequency:	23GHz ~ 24.5GHz
LO Input Power:	+13dBm typ.
IF Frequency:	1 ~ 4GHz
Conversion Loss:	12dB typ.
RF/IF Input Power:	+10dBm min. (@ 1dB compression)
Isolation (LO, RF):	30dB typ.
Isolation (LO, IF):	25dB typ.
Isolation (RF, IF):	20dB typ.

Mechanical

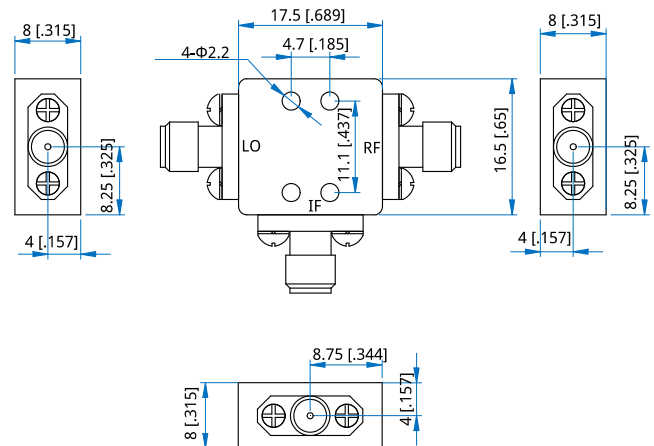
Size*1:	17.5*16.5*8mm 0.689*0.65*0.315in
LO/RF Connectors:	2.92mm Female
IF Connectors:	SMA Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature: 0~+50°C

Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-25000-27500

Customization is available upon request.

NBM-33000-37000

33~37GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF/LO Frequency:	33~37GHz
LO Input Power:	13dBm typ
IF Frequency:	DC~2GHz
Conversion Loss:	9dB typ.
1dB compression input point:	+11dBm
Isolation (LO, RF):	41dB typ.
Isolation (LO, IF):	32dB typ.
Isolation (RF, IF):	17dB typ.

Mechanical

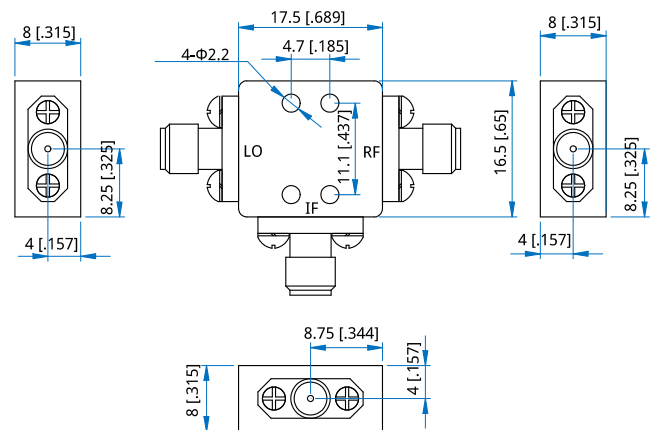
Size ^{*1} :	17.5*16.5*8mm 0.689*0.65*0.315in
IF Connectors:	SMA Female
RF/LO Connectors:	2.92mm Female
Mounting:	4*Φ2.2mm through-hole

[1] Exclude connectors.

Environmental

Operating Temperature:	-40~+85°C
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Outline Drawings



Unit: mm [in]

Tolerance: ±0.2mm [±0.008in]

How To Order

NBM-33000-37000

Customization is available upon request.

NBM-50000-77000

50~77GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF/LO Frequency:	50~77GHz
LO Input Power:	13dBm typ. 20dBm max.
IF Frequency:	DC~20GHz
Conversion Loss:	10dB typ. 12dB max.

Mechanical

IF Connectors:	SMA Female
RF/LO Connectors:	WR-15(UG-385/U)

Outline Drawings

To be done

Unit: mm [in]

Tolerance: $\pm 0.5\text{mm}$ [$\pm 0.02\text{in}$]**How To Order****NBM-50000-77000**

Customization is available upon request.

NBM-75000-110000

75~110GHz

Features:

- * Low Conversion Loss
- * High Isolation

Applications:

- * Wireless
- * Transceiver
- * Laboratory Test
- * Broadcast

Electrical

RF Frequency:	75~110GHz
RF Input Power:	10dBm max.
LO Input Power:	15dBm max.
IF Frequency:	DC~12GHz
Conversion Loss:	10dB typ.
LO-RF Isolation:	20dB typ.
LO Power:	8dBm typ.
RF Input VSWR:	1.3typ.
IF Input VSWR:	1.3typ.
Voltage:	+5V

Mechanical

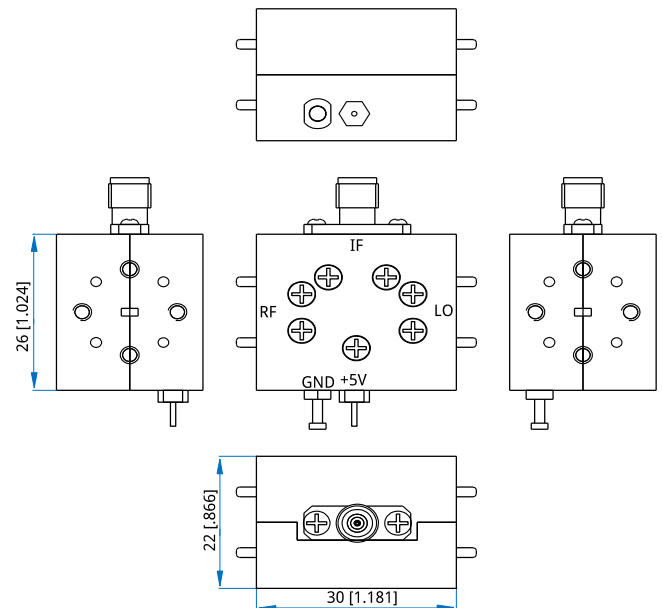
Size ^{*1} :	30*26*22mm 1.181*1.024*0.866in
RF Connectors:	WR-10, UG-387/UM
IF Connectors:	2.92mm Female
LO Connectors:	WR-10, UG-387/UM

[1] Exclude connectors.

Environmental

Operating Temperature:	10~+40°C
Non-operating Temperature:	0~+50°C

Outline Drawings



Unit: mm [in]

Tolerance: ±0.1mm [±0.004in]

How To Order

NBM-75000-110000

Customization is available upon request.