Test Sheet

MT200-B100A0,5-800

Serial Number 1001 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

Device characteristics

Central Drive Frequency (Fc)	200MHz	**Optical Range (Lambda)**	700-900nm
Carrier Drive Frequency (F0)	Frequency for max Efficiency	**Material (velocity=v)**	TeO2 (4200m/s)
AO Bandwidth (DF)	100MHz	**Refraction Index**	2,2
Active Aperture (vert. x hor.)	0,5 x 2 mm²	**Incidence Bragg Angle**	+/- Lambda.Fc/2.v
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem	**Separation Angle (orders 0-1)**	>Lambda.Fmin/v
Max Power Density (**)	5W/mm²	**Max Deviation angle (1st order)**	Lambda.DF/v
AO Laser Frequency Shift	+/-200MHz +/- 50MHz	**Electrical Impedance**	50 Ohms
Max Accepted RF Power (***)	2,2W	**Cooling**	Conduction through base plate
Rise Time	160 ns/mm		
Laser Beam Diameter	200µm<Diam<300µm		

Measured performances

Laser Wavelength = **850 nm**

Beam Diameter (1/e²) = **260 µm**

	Specification	*Measurement*
Optical Transmission : T(%)	>95%	**98 %**
VSWR @ DF	-	**<1,7 /1**
RF Power : Prf (W)	< 2,2W	**1,6 W**
1st order Efficiency (%) @ F0	> 85%	**90 %**
1st order Efficiency (%) @ DF (****)	>60%	**>65 %**

Observation

To optimize AO efficiency, the RF power (Prf) must be adjusted with the final laser wavelength (Lambda) :

$$P_{RF}(\lambda_1) \approx \left(\frac{\lambda_1}{\lambda_2}\right)^2 \times P_{RF}(\lambda_2)$$

Nevertheless, the RF power must not exceed the max accepted RF power.

Complementary values for Efficiency in 1st Order @850nm, with Prf<2,2W, considering gaussian diffraction limited beam:
- For F0 : Efficiency>85%
- For 150-250MHz : Efficiency>60%

 # BE CAREFULL : To avoid any damage, never use a frequency out of the bandwidth specified in the test sheet !

 # OPERATING MANUAL : Please download the operating manual "Modulator isotropic" on our restricted access area at "www.aaoptoelectronic.com".

Comments

(*): Polarisation defined / base plate.

(**): To avoid thermal effect.

(***): To avoid any damage on the transducer.

(****): See measurement curves (Efficiency vs Drive Frequency).

Date: 19/06/2024 ***Operator:*** Y.CIMBE

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Test Sheet

MT200-B100A0,5-800

Serial Number 1001 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

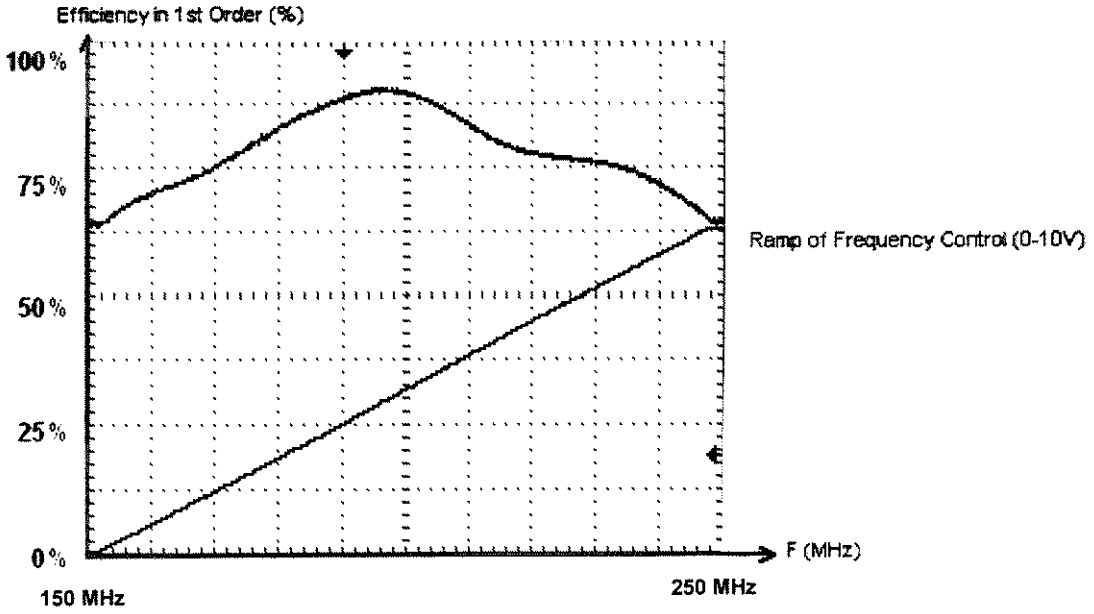
Device characteristics

Central Drive Frequency (Fc)	200MHz
Carrier Drive Frequency (F0)	Frequency for max Efficiency
AO Bandwidth (DF)	100MHz
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem
Optical Range (Lambda)	**700-900nm**
Incidence Bragg Angle	+/- Lambda.Fc/2.v

Measurement performances

RF Power : Prf (W)	1,6 W
Laser Wavelength =	850 nm
Beam Diameter (1/e²) =	260 µm

Measurement curve n°1 (Efficiency vs Drive Frequency)



Date: 19/06/2024 ***Operator:*** Y.CIMBE

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Test Sheet

MT200-B100A0,5-800

Serial Number 1002 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

Device characteristics

Central Drive Frequency (Fc)	200MHz	**Optical Range (Lambda)**	700-900nm
Carrier Drive Frequency (F0)	Frequency for max Efficiency	**Material (velocity=v)**	TeO2 (4200m/s)
AO Bandwidth (DF)	100MHz	**Refraction Index**	2,2
Active Aperture (vert. x hor.)	0,5 x 2 mm²	**Incidence Bragg Angle**	+/- Lambda.Fc/2.v
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem	**Separation Angle (orders 0-1)**	>Lambda.Fmin/v
Max Power Density (**)	5W/mm²	**Max Deviation angle (1st order)**	Lambda.DF/v
AO Laser Frequency Shift	+/-200MHz +/- 50MHz	**Electrical Impedance**	50 Ohms
Max Accepted RF Power (***)	2,2W	**Cooling**	Conduction through base plate
Rise Time	160 ns/mm		
Laser Beam Diameter	200µm<Diam<300µm		

Measured performances

Laser Wavelength = **850 nm**

Beam Diameter (1/e²) = **260 µm**

	Specification	*Measurement*
Optical Transmission : T(%)	>95%	**98 %**
VSWR @ DF	-	**<1,7 /1**
RF Power : Prf (W)	< 2,2W	**1,6 W**
1st order Efficiency (%) @ F0	> 85%	**90 %**
1st order Efficiency (%) @ DF (****)	>60%	**>62 %**

Observation

To optimize AO efficiency, the RF power (Prf) must be adjusted with the final laser wavelength (Lambda) :

$$P_{RF}(\lambda_1) \approx \left(\frac{\lambda_1}{\lambda_2}\right)^2 \times P_{RF}(\lambda_2)$$

Nevertheless, the RF power must not exceed the max accepted RF power.

Complementary values for Efficiency in 1st Order @850nm, with Prf<2,2W, considering gaussian diffraction limited beam:
- For F0 : Efficiency>85%
- For 150-250MHz : Efficiency>60%

 # BE CAREFULL : To avoid any damage, never use a frequency out of the bandwidth specified in the test sheet !

 # OPERATING MANUAL : Please download the operating manual "Modulator isotropic" on our restricted access area at "www.aaoptoelectronic.com".

Comments

(*): Polarisation defined / base plate.

(**): To avoid thermal effect.

(***): To avoid any damage on the transducer.

(****): See measurement curves (Efficiency vs Drive Frequency).

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Test Sheet

MT200-B100A0,5-800

Serial Number 1002 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

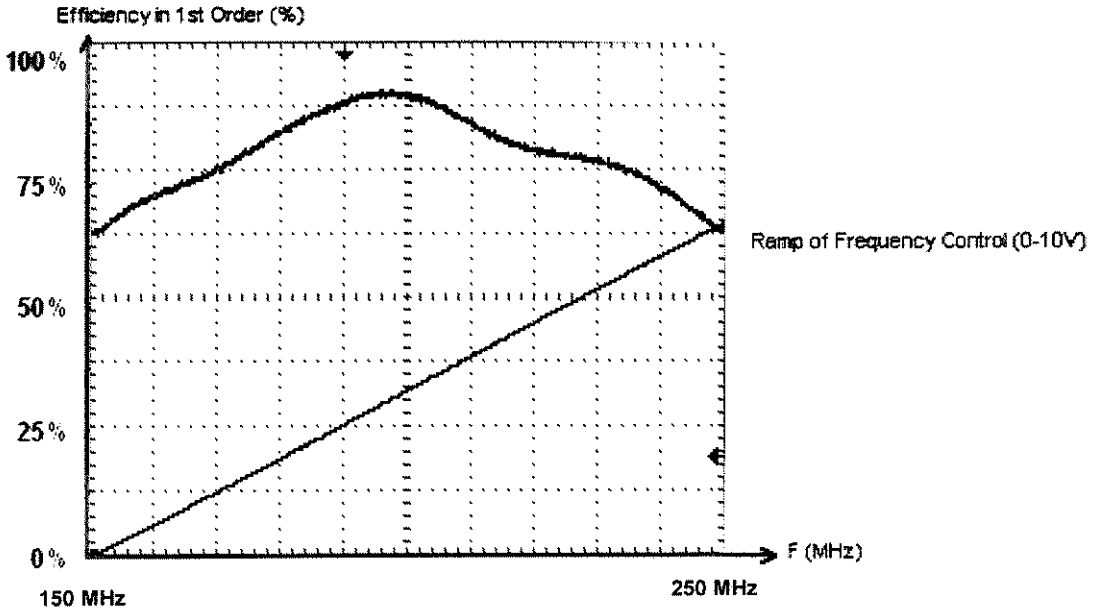
Device characteristics

Central Drive Frequency (Fc)	200MHz
Carrier Drive Frequency (F0)	Frequency for max Efficiency
AO Bandwidth (DF)	100MHz
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem
Optical Range (Lambda)	**700-900nm**
Incidence Bragg Angle	+/- Lambda.Fc/2.v

Measurement performances

RF Power : Prf (W)	1,6 W
Laser Wavelength =	850 nm
Beam Diameter (1/e²) =	260 µm

Measurement curve n°1 (Efficiency vs Drive Frequency)



Date: 19/06/2024 ***Operator:*** Y.CIMBE

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Test Sheet

MT200-B100A0,5-800

Serial Number 1003 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

Device characteristics

Central Drive Frequency (Fc)	200MHz	**Optical Range (Lambda)**	700-900nm
Carrier Drive Frequency (F0)	Frequency for max Efficiency	**Material (velocity=v)**	TeO2 (4200m/s)
AO Bandwidth (DF)	100MHz	**Refraction Index**	2,2
Active Aperture (vert. x hor.)	0,5 x 2 mm²	**Incidence Bragg Angle**	+/- Lambda.Fc/2.v
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem	**Separation Angle (orders 0-1)**	>Lambda.Fmin/v
Max Power Density (**)	5W/mm²	**Max Deviation angle (1st order)**	Lambda.DF/v
AO Laser Frequency Shift	+/-200MHz +/- 50MHz	**Electrical Impedance**	50 Ohms
Max Accepted RF Power (***)	2,2W	**Cooling**	Conduction through base plate
Rise Time	160 ns/mm		
Laser Beam Diameter	200µm<Diam<300µm		

Measured performances

Laser Wavelength = **850 nm**

Beam Diameter (1/e²) = **260 µm**

	Specification	*Measurement*
Optical Transmission : T(%)	>95%	**98 %**
VSWR @ DF	-	**<1,7 /1**
RF Power : Prf (W)	< 2,2W	**1,6 W**
1st order Efficiency (%) @ F0	> 85%	**90 %**
1st order Efficiency (%) @ DF (****)	>60%	**>60 %**

Observation

To optimize AO efficiency, the RF power (Prf) must be adjusted with the final laser wavelength (Lambda) :

Nevertheless, the RF power must not exceed the max accepted RF power.

$$P_{RF}(\lambda_1) \approx \left(\frac{\lambda_1}{\lambda_2}\right)^2 \times P_{RF}(\lambda_2)$$

Complementary values for Efficiency in 1st Order @850nm, with Prf<2,2W, considering gaussian diffraction limited beam:
- For F0 : Efficiency>85%
- For 150-250MHz : Efficiency>60%

 # BE CAREFULL : To avoid any damage, never use a frequency out of the bandwidth specified in the test sheet !

 # OPERATING MANUAL : Please download the operating manual "Modulator isotropic" on our restricted access area at "www.aaoptoelectronic.com".

Comments

(*): Polarisation defined / base plate.

(**): To avoid thermal effect.

(***): To avoid any damage on the transducer.

(****): See measurement curves (Efficiency vs Drive Frequency).

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Test Sheet

MT200-B100A0,5-800

Serial Number 1003 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

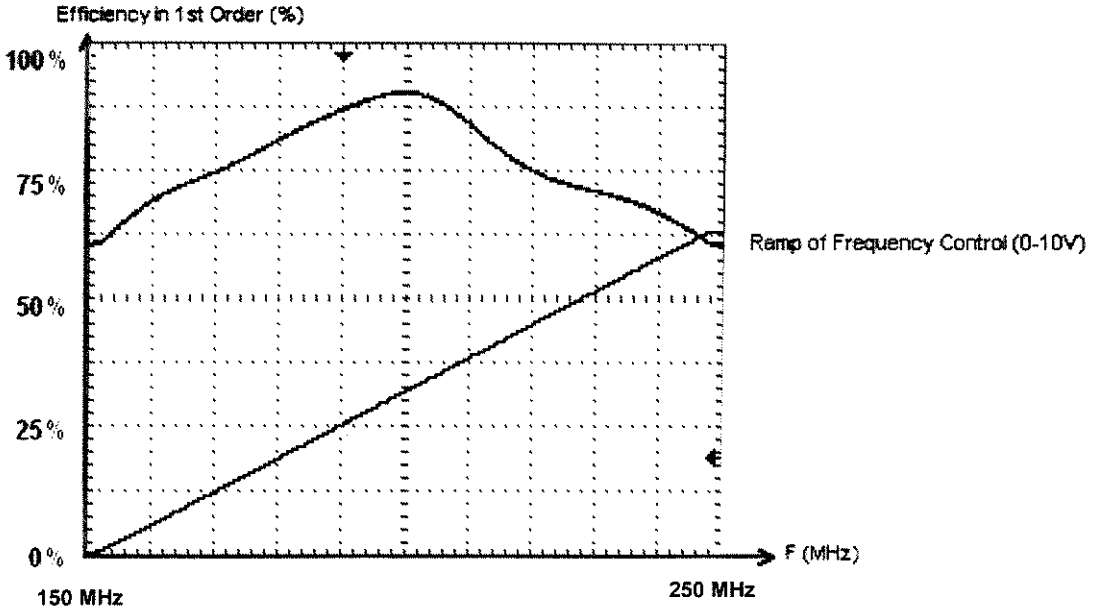
Device characteristics

Central Drive Frequency (Fc)	200MHz
Carrier Drive Frequency (F0)	Frequency for max Efficiency
AO Bandwidth (DF)	100MHz
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem
Optical Range (Lambda)	**700-900nm**
Incidence Bragg Angle	+/- Lambda.Fc/2.v

Measurement performances

RF Power : Prf (W)	1,6 W
Laser Wavelength =	850 nm
Beam Diameter (1/e²) =	260 µm

Measurement curve n°1 (Efficiency vs Drive Frequency)



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Test Sheet

MT200-B100A0,5-800

Serial Number 1004 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

Device characteristics

Central Drive Frequency (Fc)	200MHz	**Optical Range (Lambda)**	700-900nm
Carrier Drive Frequency (F0)	Frequency for max Efficiency	**Material (velocity=v)**	TeO2 (4200m/s)
AO Bandwidth (DF)	100MHz	**Refraction Index**	2,2
Active Aperture (vert. x hor.)	0,5 x 2 mm²	**Incidence Bragg Angle**	+/- Lambda.Fc/2.v
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem	**Separation Angle (orders 0-1)**	>Lambda.Fmin/v
Max Power Density (**)	5W/mm²	**Max Deviation angle (1st order)**	Lambda.DF/v
AO Laser Frequency Shift	+/-200MHz +/- 50MHz	**Electrical Impedance**	50 Ohms
Max Accepted RF Power (***)	2,2W	**Cooling**	Conduction through base plate
Rise Time	160 ns/mm		
Laser Beam Diameter	200µm<Diam<300µm		

Measured performances

Laser Wavelength = **850 nm**

Beam Diameter (1/e²) = **260 µm**

	Specification	*Measurement*
Optical Transmission : T(%)	>95%	**98 %**
VSWR @ DF	-	**<1,85 /1**
RF Power : Prf (W)	< 2,2W	**1,6 W**
1st order Efficiency (%) @ F0	> 85%	**90 %**
1st order Efficiency (%) @ DF (****)	>60%	**>62 %**

Observation

To optimize AO efficiency, the RF power (Prf) must be adjusted with the final laser wavelength (Lambda) :

Nevertheless, the RF power must not exceed the max accepted RF power.

$$P_{RF}(\lambda_1) \approx \left(\frac{\lambda_1}{\lambda_2}\right)^2 \times P_{RF}(\lambda_2)$$

Complementary values for Efficiency in 1st Order @850nm, with Prf<2,2W, considering gaussian diffraction limited beam:
- For F0 : Efficiency>85%
- For 150-250MHz : Efficiency>60%

 # BE CAREFULL : To avoid any damage, never use a frequency out of the bandwidth specified in the test sheet !

 # OPERATING MANUAL : Please download the operating manual "Modulator isotropic" on our restricted access area at "www.aaoptoelectronic.com".

Comments

(*): Polarisation defined / base plate.

(**): To avoid thermal effect.

(***): To avoid any damage on the transducer.

(****): See measurement curves (Efficiency vs Drive Frequency).

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Test Sheet

MT200-B100A0,5-800

Serial Number 1004 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

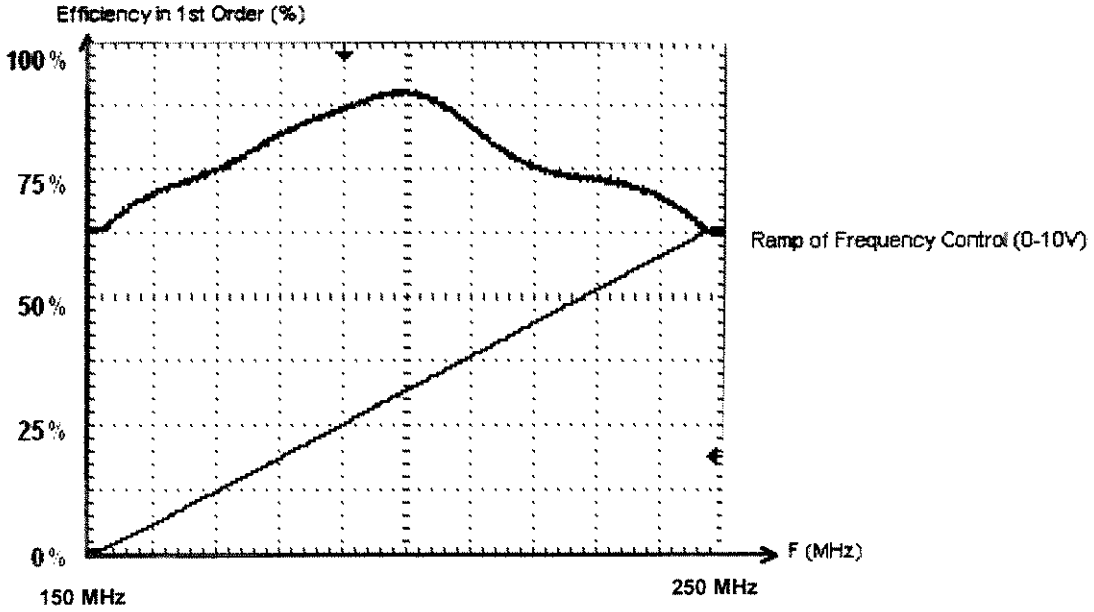
Device characteristics

Central Drive Frequency (Fc)	200MHz
Carrier Drive Frequency (F0)	Frequency for max Efficiency
AO Bandwidth (DF)	100MHz
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem
Optical Range (Lambda)	**700-900nm**
Incidence Bragg Angle	+/- Lambda.Fc/2.v

Measurement performances

RF Power : Prf (W)	1,6 W
Laser Wavelength =	850 nm
Beam Diameter (1/e²) =	260 µm

Measurement curve n°1 (Efficiency vs Drive Frequency)



Date: 19/06/2024 ***Operator:*** Y.CIMBE

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Test Sheet

MT200-B100A0,5-800

Serial Number 1005 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

Device characteristics

Central Drive Frequency (Fc)	200MHz	**Optical Range (Lambda)**	700-900nm
Carrier Drive Frequency (F0)	Frequency for max Efficiency	**Material (velocity=v)**	TeO2 (4200m/s)
AO Bandwidth (DF)	100MHz	**Refraction Index**	2,2
Active Aperture (vert. x hor.)	0,5 x 2 mm²	**Incidence Bragg Angle**	+/- Lambda.Fc/2.v
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem	**Separation Angle (orders 0-1)**	>Lambda.Fmin/v
Max Power Density (**)	5W/mm²	**Max Deviation angle (1st order)**	Lambda.DF/v
AO Laser Frequency Shift	+/-200MHz +/- 50MHz	**Electrical Impedance**	50 Ohms
Max Accepted RF Power (***)	2,2W	**Cooling**	Conduction through base plate
Rise Time	160 ns/mm		
Laser Beam Diameter	200µm<Diam<300µm		

Measured performances

Laser Wavelength = **850 nm**

Beam Diameter (1/e²) = **260 µm**

	Specification	*Measurement*
Optical Transmission : T(%)	>95%	**98 %**
VSWR @ DF	-	**<1,75 /1**
RF Power : Prf (W)	< 2,2W	**1,6 W**
1st order Efficiency (%) @ F0	> 85%	**90 %**
1st order Efficiency (%) @ DF (****)	>60%	**>62 %**

Observation

To optimize AO efficiency, the RF power (Prf) must be adjusted with the final laser wavelength (Lambda) :

$$P_{RF}(\lambda_1) \approx \left(\frac{\lambda_1}{\lambda_2}\right)^2 \times P_{RF}(\lambda_2)$$

Nevertheless, the RF power must not exceed the max accepted RF power.

Complementary values for Efficiency in 1st Order @850nm, with Prf<2,2W, considering gaussian diffraction limited beam:
- For F0 : Efficiency>85%
- For 150-250MHz : Efficiency>60%

 # BE CAREFULL : To avoid any damage, never use a frequency out of the bandwidth specified in the test sheet !

 # OPERATING MANUAL : Please download the operating manual "Modulator isotropic" on our restricted access area at "www.aaoptoelectronic.com".

Comments

(*): Polarisation defined / base plate.

(**): To avoid thermal effect.

(***): To avoid any damage on the transducer.

(****): See measurement curves (Efficiency vs Drive Frequency).

Date: 19/06/2024 ***Operator:*** Y.CIMBE

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Test Sheet

MT200-B100A0,5-800

Serial Number 1005 - Q240943	A-A Reference File: Q240943

The AO component is combined with the RF driver : -

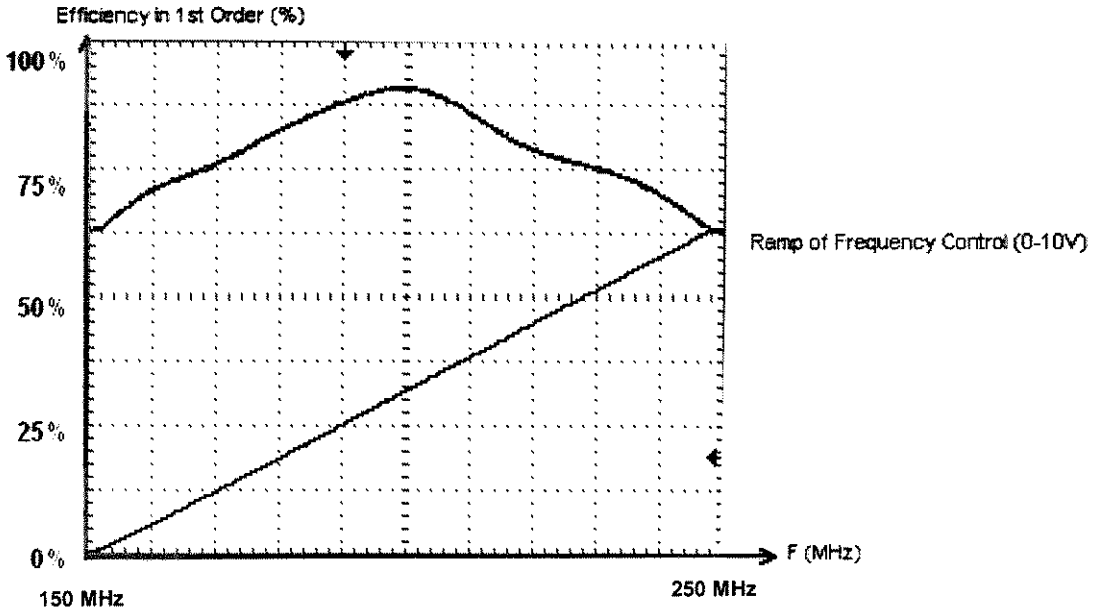
Device characteristics

Central Drive Frequency (Fc)	200MHz
Carrier Drive Frequency (F0)	Frequency for max Efficiency
AO Bandwidth (DF)	100MHz
Laser Polarisation (IN/OUT) (*)	Linear perpendicular / idem
Optical Range (Lambda)	**700-900nm**
Incidence Bragg Angle	+/- Lambda.Fc/2.v

Measurement performances

RF Power : Prf (W)	1,6 W
Laser Wavelength =	850 nm
Beam Diameter (1/e²) =	260 µm

Measurement curve n°1 (Efficiency vs Drive Frequency)



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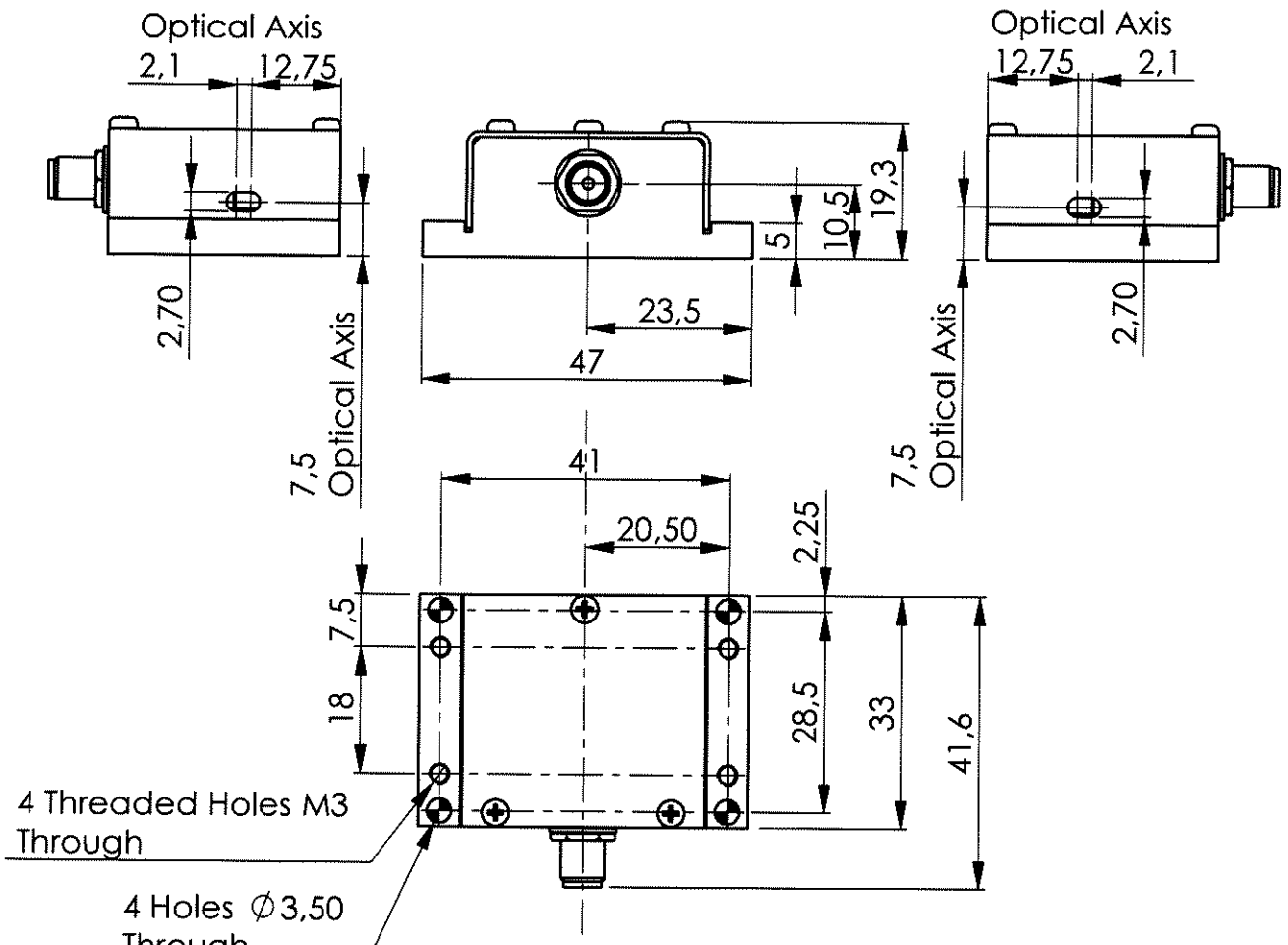

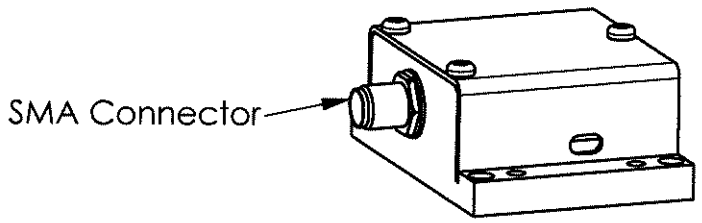

Indice Index	Date	Auteur Author	Modifications
B	15/12/06	E.D	Mise en page
A	09/03/06	A.A	Plan initial / Initial drawing

Conception Design	E.D
Vérification Checking	L.F
Tolérance Tolerance	ISO 2768mK
Echelle Scale	1:1
Format	A4

PLAN D'INTERFACE / OUTLINE DRAWING

Référence / Reference

IN-PRO-003

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tel : 08 11 09 76 76
fax : 01 76 91 50 31

Folio / Sheet	Indice / Index
1/1	B