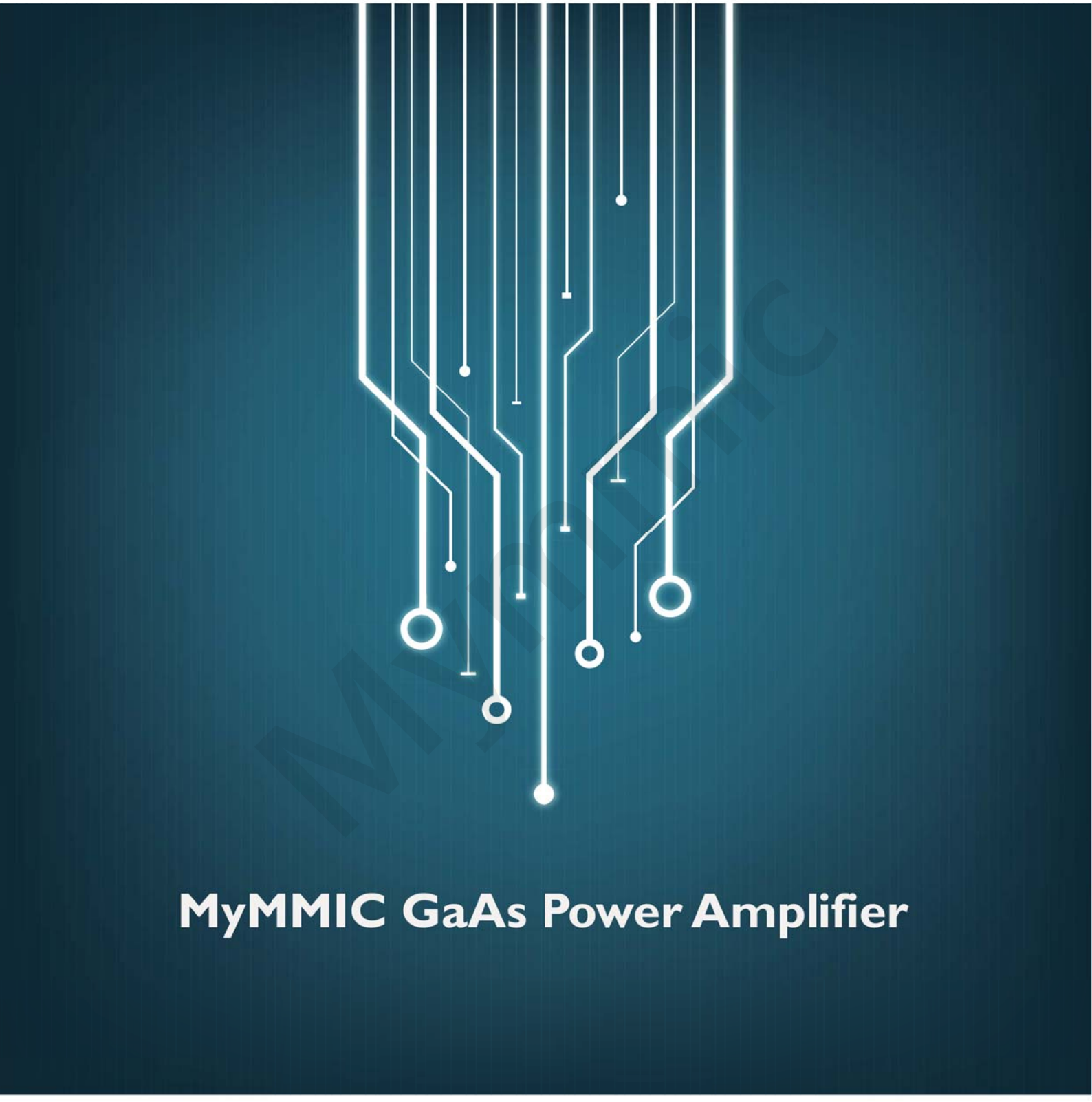
MyMMIC



MyMMIC GaAs Power Amplifier

GaAs ultra-wideband distributed amplifier (Die packaging)

Model	Freq(GHz)	Gain (dB)	Gain flatness (dB)	N/F (dB)	P-1dB (dBm)	Psat (dBm)	Input/output return loss (dB)	Powered Supply (V/mA)	Alternative
MYP232000	DC-20	16	±0.5	3.0	21.5	23	15/15	8/100	HMC465
MYP273000	DC-30	16	±0.2	4.0	26	27	18/16	8/220	HMC464 AMMC5025
MYP224000	DC-40	12	±0.75	5.0	20	22	15/10	7/160	AMMC5024 HMC930
MYP302001	1-20	12	±0.5	-	30	31	15/20	10/320	HMC797
MYP281802	2-18	13	±3.0	-	27.5	28.5	17/12	10/350	CMM0015

GaAs drive amplifier(Die Packaging)

Model	Freq (GHz)	Gain (dB)	Gain flatness (dB)	P-1dB (dBm)	Psat (dBm)	Input/output return loss (dB)	Power Supply (V/mA)	Alternative
MYP222002	2-20	19.5	±0.5	21	22	20/15	5/130	TGA-2526
MYP2005E	5-20	22	±2.0	20	21	16/17	5/110	HMC451
MYP2006A	6-18	15	±0.75	19	20	15/15	5/110	AMMC5618
MYP4520B	20-45	20	±1.25	20.5	21.5	21/11	4.5/180	AMMC5040

high dynamic, low noise, drive amplifier(Die Packaging)

Model	Freq (GHz)	Gain (dB)	Gain flatness (dB)	N/F (dB)	P-1dB (dBm)	Psat (dBm)	Input/output return loss (dB)	Power Supply (V/mA)	Alternative
MYP2001B	1-20	12	+/-1.5	4.5	23	24	15/15	8/250	CMM0014
MYP1806A	6-18	10.5	+/- 0.5	3.0	19.5	20.5	20/14	5/80	WFD060180-L50P19

GaAs power amplifier

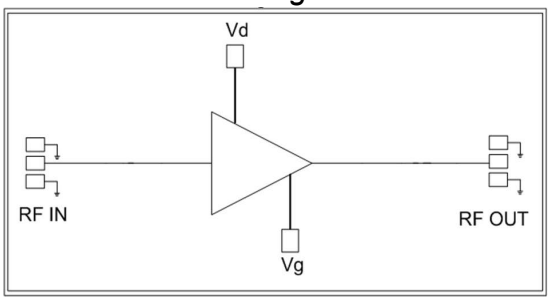
Model	Freq (GHz)	Gain (dB)	Gain flatness (dB)	P-1dB (dBm)	Psat (dBm)	Input/output return loss (dB)	Power Supply (V/mA)	Alternative
MYP351715	15-17	37	±0.5	34	35	15/13	7V/660	
MYP3517151A	15-17	26	±0.5	34.5	35	14/16	7V/600	NC11115C- 1518
MYP371715	15-17	35	±0.5	37	37	28/32	7/1400	

GaAs MMIC Power Amplifier Die, DC-20GHz

Features:

Frequency range: DC-20GHz
small signal gain: 16dB
Gain flatness±0.5dB@DC-20GHz
Noise figure: ≤ 4dB
P-1dB: 22dBm
Psat: 23dBm
Power supply: +8V/100mA
50Ohm input/output
100% on-Die test
Die size: 2.94 x 1.35 x 0.1mm

Functional block diagram:



General Description:

MYP232000 is an ultra-wideband distributed amplifier Die based on pHEMT technology. The frequency range covers DC~20GHz, small signal gain is 16dB, and saturated output power is 23dBm. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max. Ratings

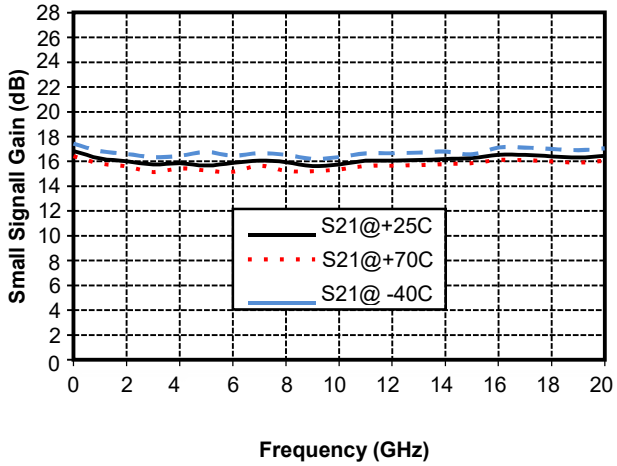
Max. drain voltage	+14V
Max. gate bias	-3V
Max. input power	+20dBm
Operating temperature	-40 ~ +70°C
storage temperature	-65 ~ +150°C

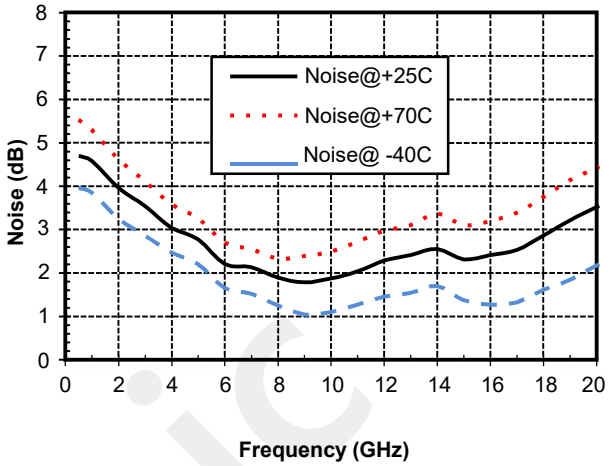
[1] Exceeding any of the above Max. limits may cause permanent damage.

Electrical Specifications (Ta=+25°C, Vd=+8V, *Ids=100mA)

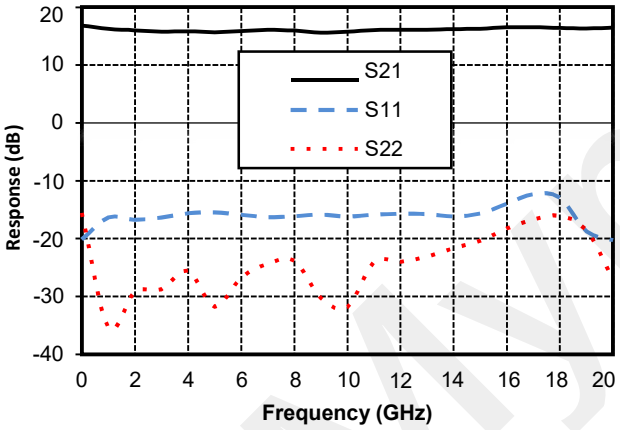
Parameter	Min	Typ.	Max.	Min	Typ.	Max.	Min	Typ.	Max.	Unit
Frequency Range		DC-6			6-12			12-20		GHz
Small signal gain	15.9	16	16.2	16	16	16.2	15.9	16	16.3	dB
Gain flatness		±0.2			±0.1			±0.2		dB
Noise Figure	2.1	3.5	4.5	1.7	2.0	2.1	2.1	2.5	3.5	dB
P-1dB	21.3	21.5	21.8	21.5	22	22.4	20.5	22	22.5	dBm
Psat	22.7	23	23.3	23.1	23.5	23.7	22.7	23	23.8	dBm
Input return loss		15			18			15		dB
Output return loss		20			16			13		dB
* By tuning Vg terminal voltage -2V ~ 0V, reaching 100mA, Vg terminal voltage is expected -0.7V.										

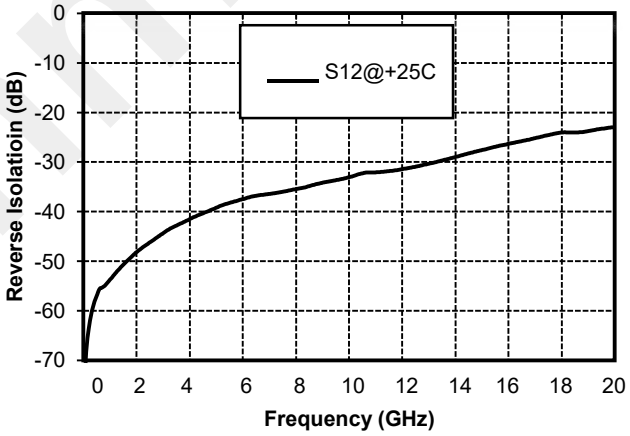
Gain vs. Temperature Noise Figure vs. Temperature



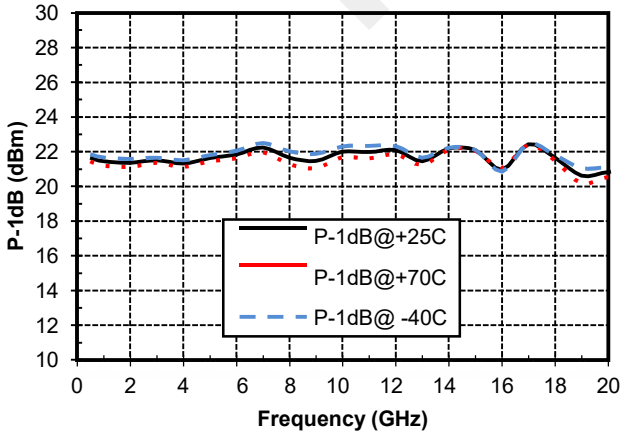


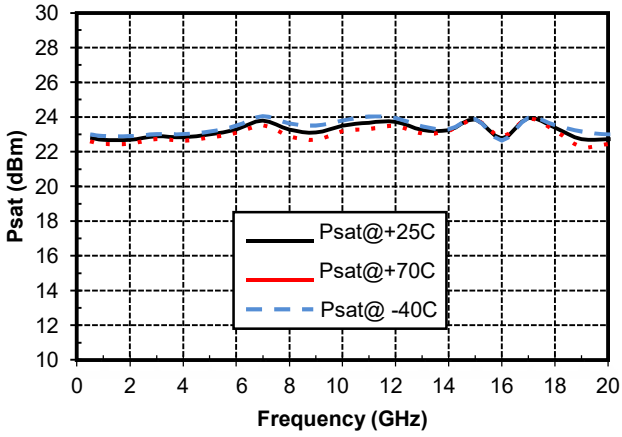
Gain & Input/Output Return Loss vs. Frequency Reverse Isolation vs. Frequency



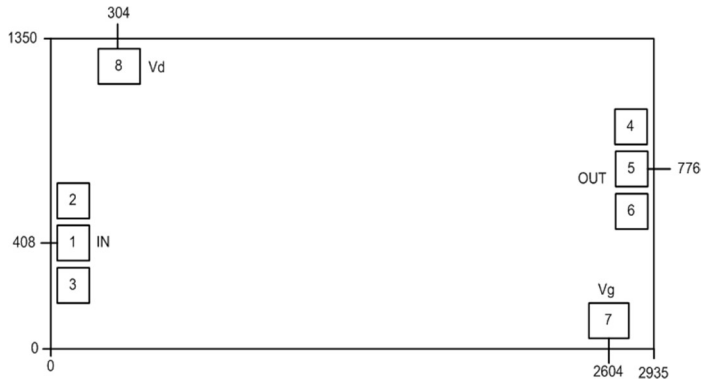


P-1dB vs. Temperature Psat vs. Temperature





Outline Drawing [2]



[2] The figures are all micrometers

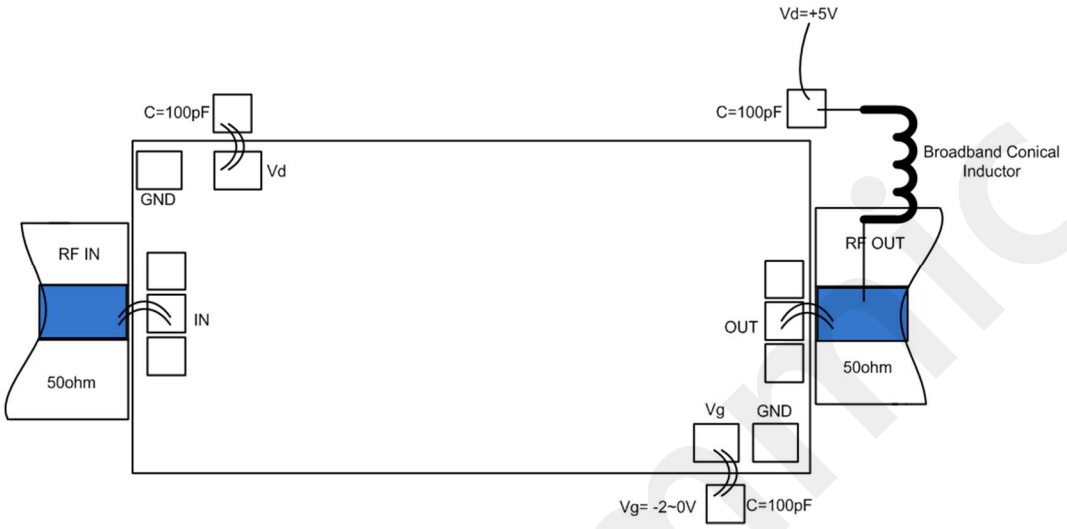
Pad Descriptions

Pad Number	Function	Description
1	RF IN	50 ohm external circuit for signal input, need to add DC blocking capacitor
5	RF OUT	The signal output is externally connected to a 50 ohm circuit, and a DC blocking capacitor is required. An external DC bias network is provided. Drain current. See the following application circuits or consult the manufacturer. *
7	Vg	Amplifier gate bias requires an external 100pF bypass capacitor
8	Vd	Amplifier drain bias requires an external 100pF bypass capacitor
2, 3, 4, 6, Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground

Application circuit outline drawing

A wide-band, tolerant 700mA bias network (broadband tapered inductor + wideband capacitor) is required to be soldered on the RF OUT side. Recommended wideband tapered inductor model: CC19T40K240G5-C, recommended wideband capacitor model: 550L104KT.

Recommended assembly drawing



- Tapered spiral inductor taper as close as possible to the Die output port pin

Notes:

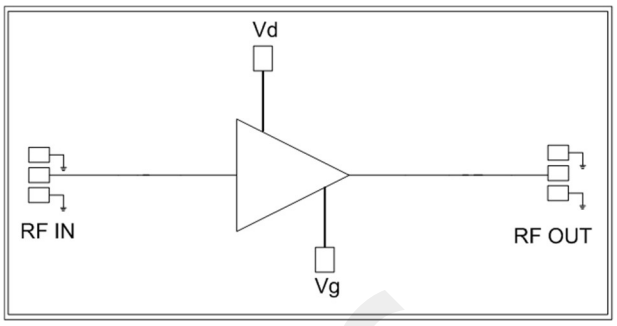
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Mounting operation recommendations: The bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, DC-30GHz

Features:

Frequency Range: DC-30GHz
Small Signal Gain: 16dB
Gain flatness: ≤±0.2dB@DC-26GHz
Noise figure: ≤ 4Db
P-1dB: 26dBm Psat: 27dBm
Power supply: +8V/220mA
50Ohm input/output
100% on-Die test
Die size: 2.94 x 1.35 x 0.1mm

Functional block diagram:



General Description:

MYP273000 is an ultra-wideband distributed amplifier Die based on pHEMT technology. Its frequency range covers DC~30GHz, small signal gain is 16dB, and saturation output power is 27dBm. IMYP273000 has the world's best gain flatness: ≤0.4dB@DC-26GHz. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max. Ratings

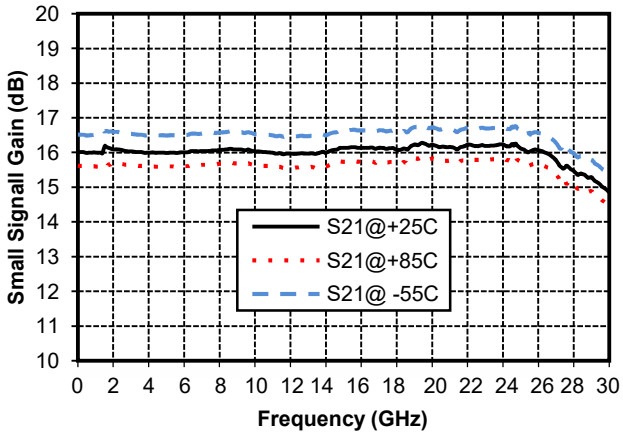
Max. drain voltage	+14V
Max. gate bias	-3V
Max. input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

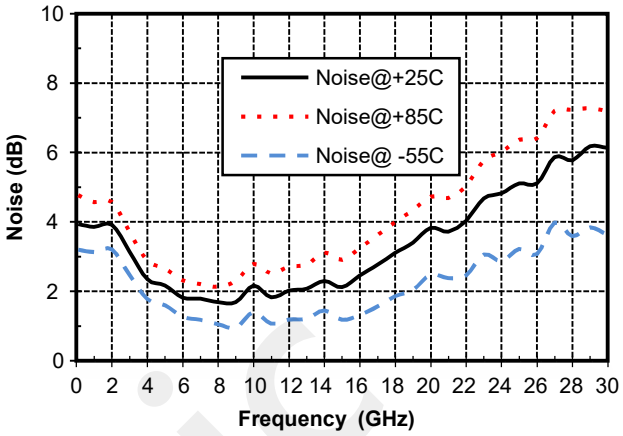
[1] Exceeding any of the above Max. limits may cause permanent damage.

Electrical Specifications (Ta=+25°C, Vd=+8V, *Ids=220mA)

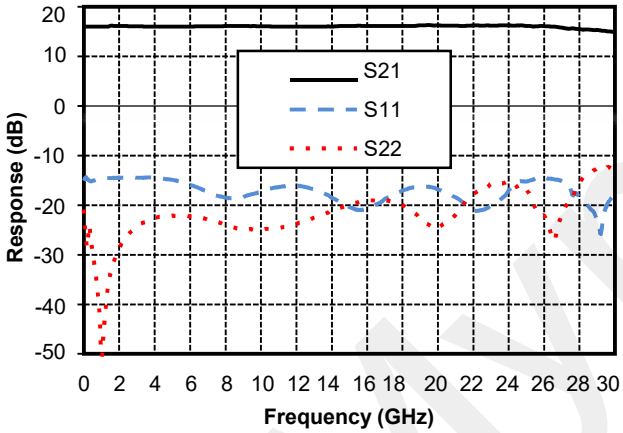
Parameter	Min	Typ.	Max.	Min	Typ.	Max.	Min	Typ.	Max.	Unit
Frequency Range		DC-18			18-26			26-30		GHz
Small signal gain	15.9	16	16.1	16	16	16.2	16	15	14.8	dB
Gain flatness		±0.2			±0.2			±0.9		dB
Noise Figure	2.0	2.5	3.9	3.1	4.0	5.1	5.1	6.0	6.1	dB
P-1dB	25.9	26	27.3	25.2	25	26.2	25.2	twenty four	24.2	dBm
Psat	26.9	27	28.3	26	26.5	27	26	25.5	25.2	dBm
Input return loss		15			18			15		dB
Output return loss		20			16			13		dB
*Through tuning Vg terminal voltage -2V ~ 0V, reach 220mA, Vg terminal voltage is expected -0.6V.										

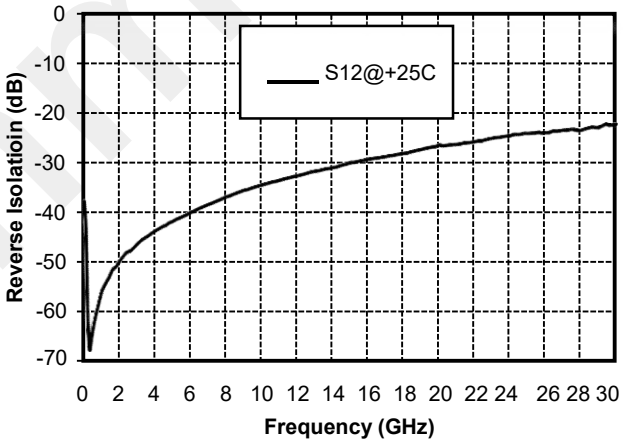
Gain vs. Temperature Noise Figure vs. Temperature



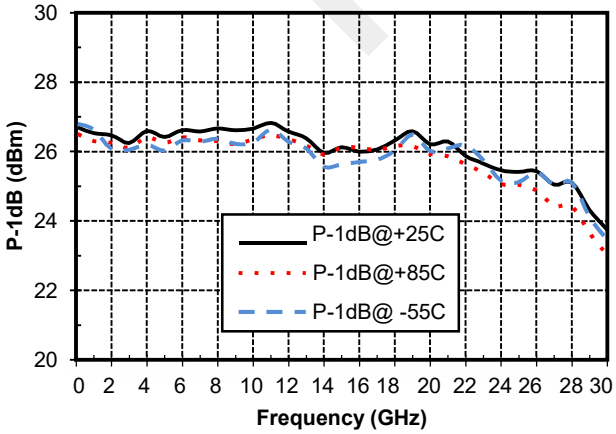


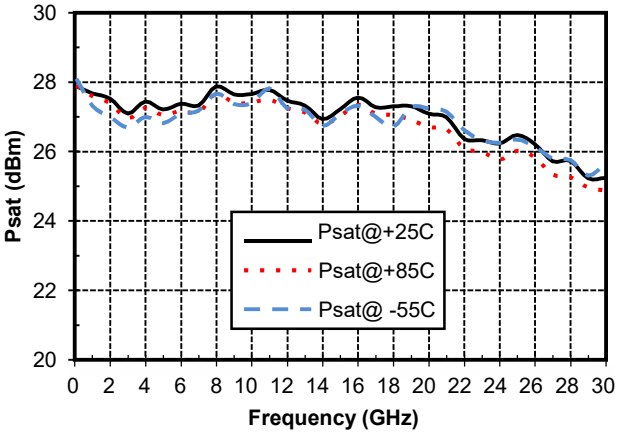
Gain & Input/Output Return Loss vs. Frequency Reverse Isolation vs. Frequency





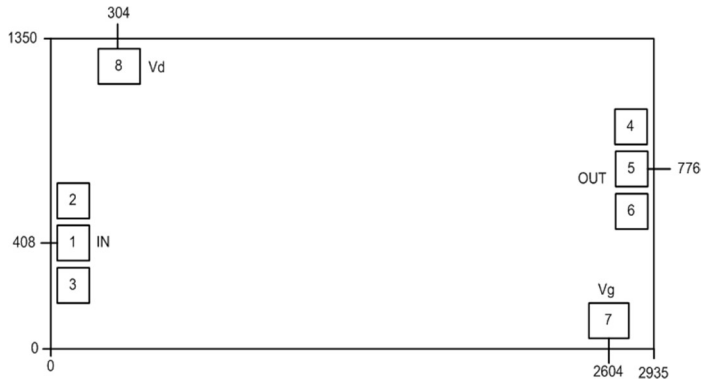
P-1dB vs. Temperature Psat vs. Temperature





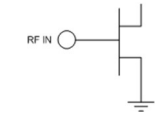
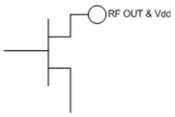
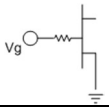
GaAs MMIC Power Amplifier Die, DC-30GHz

Outline Drawing [2]



[2] The figures are all micrometers

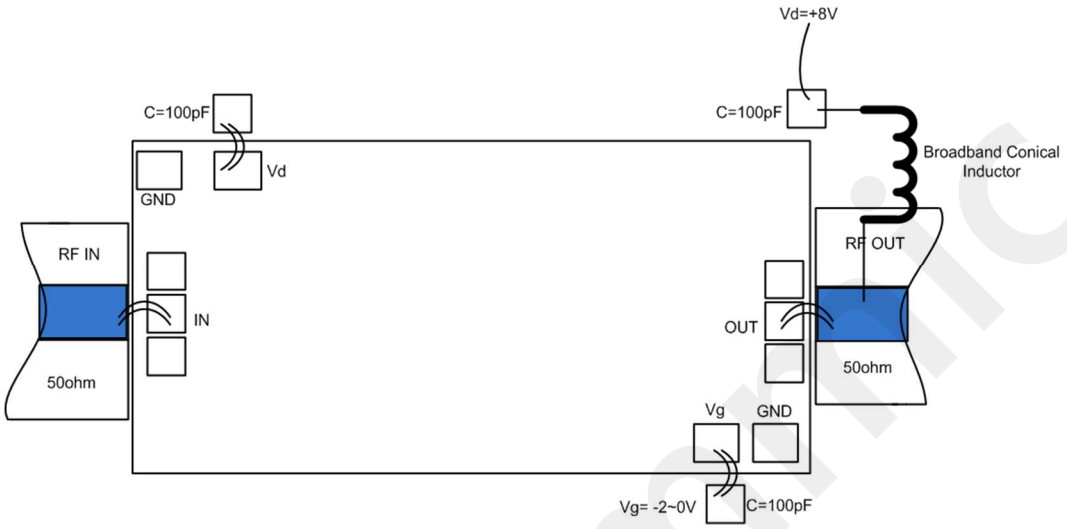
Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	50 ohm external circuit for signal input, need to add DC blocking capacitor	
5	RF OUT	50 ohm external circuit for signal output, need to add Straight capacitance, external DC bias network, provides drain current. See the following application circuits or consult the manufacturer*	
7	Vg	Amplifier gate bias requires an external 100pF bypass capacitor	
8	Vd	Amplifier drain bias requires an external 100pF bypass capacitor	
2,3,4,6, bottom of the Die	GND	The bottom of the Die must be in good contact with RF and DC ground	

Application circuit outline drawing

A wide-band, tolerant 700mA bias network (broadband tapered inductor + wideband capacitor) is required to be soldered on the RF OUT side. Recommended wideband tapered inductor model: CC19T40K240G5-C, recommended wideband capacitor model: 550L104KT.

Recommended assembly drawing



- Tapered spiral inductor taper as close as possible to the Die output port pin

Notes:

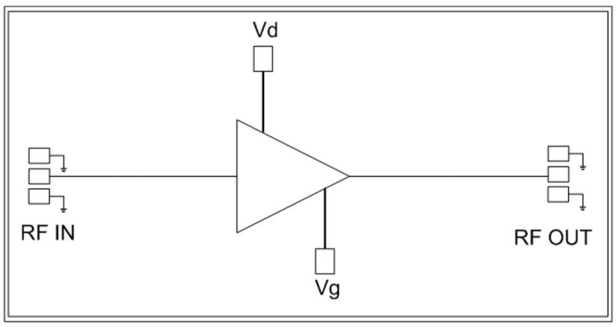
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Mounting operation recommendations: The bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

AGC power amplifier Die, DC-40GHz

Features:

Frequency range: DC-40GHz
small signal gain: 12dB
Noise figure: 5dB
Psat: 22dBm
Power supply: +7V/160mA
50Ohm input/output
100% on-Die test
Die size: 2.5 X 1.2 X 0.1mm

Functional block diagram:



General Description:

MYP224000 is an ultra-wideband distributed amplifier Die based on pHEMT technology. Its frequency range covers DC~40GHz and small signal gain12dB, saturated output power 22dBm. The MYP220040 can achieve automatic gain control by tuning the VC control terminal voltage. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max. Ratings

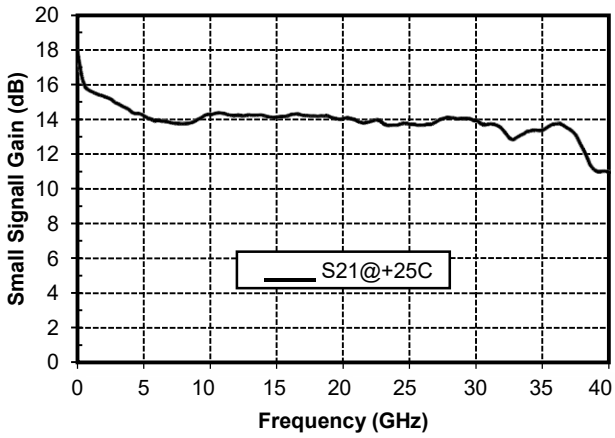
Max. drain voltage	+9V
Max. gate bias	-2V
Max. input power	+18dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

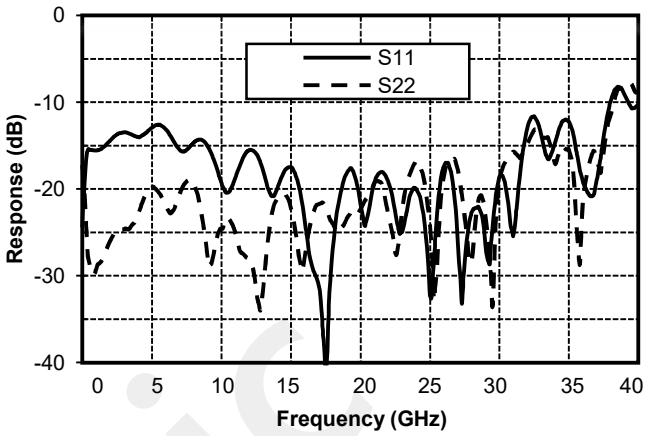
Electrical Specifications(TA= +25°C, Vd=+7V)

Parameter	Min	Typ.	Max.	Unit
Frequency Range		DC-40		GHz
Small signal gain		12		dB
Noise Figure		5		dB
P-1dB*(negative pressure condition)		20		dBm
Psat* (negative pressure condition)		22		dBm
Input return loss		15		dB
Output return loss		15		dB
Quiescent Current		160		mA
*Through tuning Vg terminal voltage -2V~0V, reach 160mA, Vg terminal voltage is expected -0.25V; Vg end can be left vacant, the current when vacant is 185mA.				

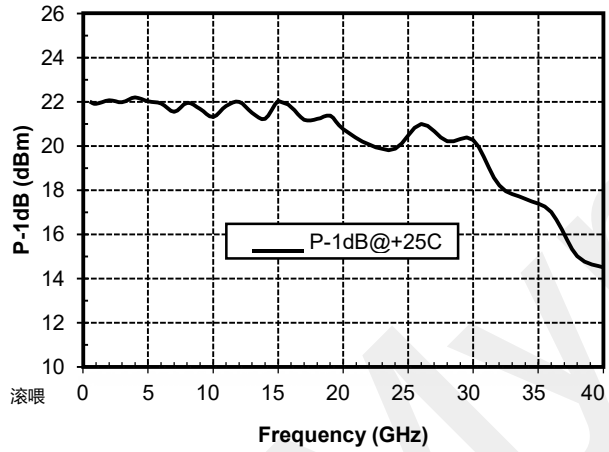
Main Indicator Test Curve @ +7V, 160mA

Gain vs. Frequency Input/Output Return Loss





P-1dB vs. Frequency Psat vs. Frequency



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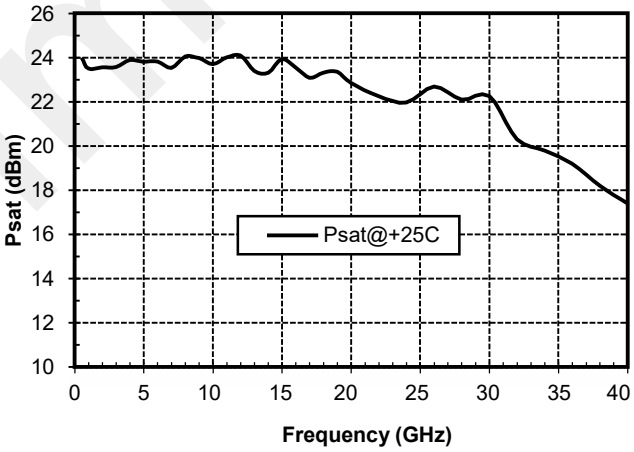
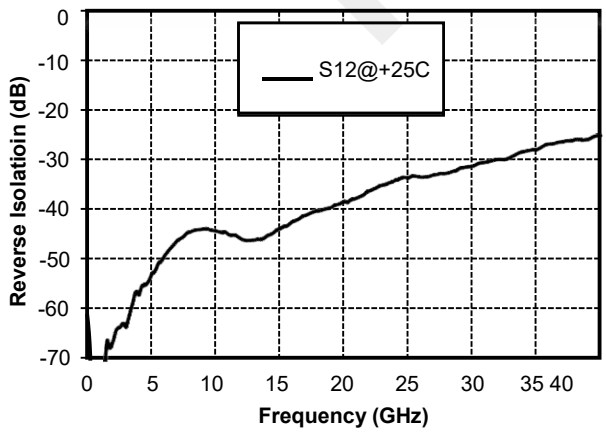
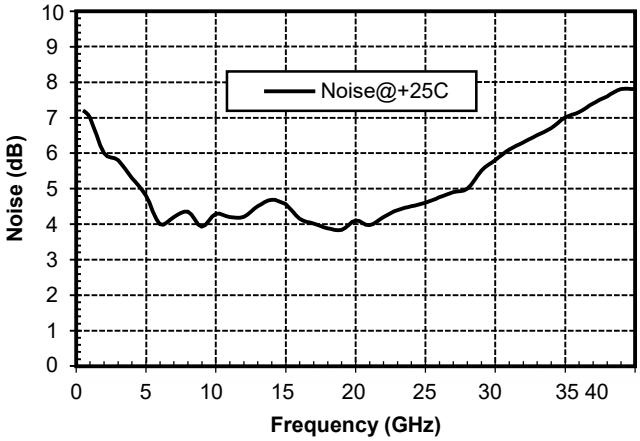
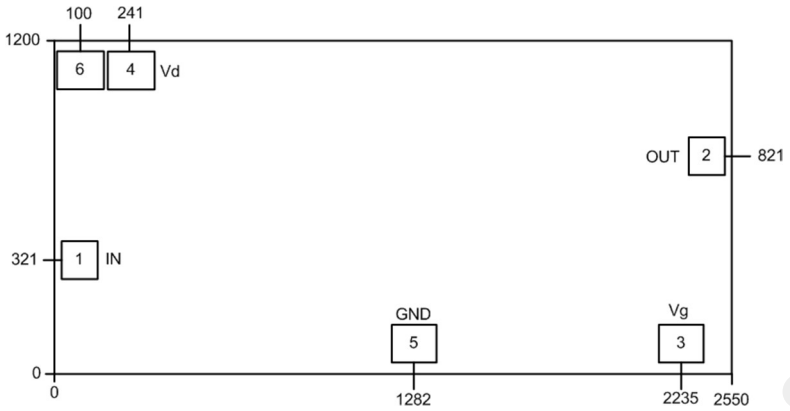


Reverse Isolation vs. Frequency Noise Figure vs. Frequency



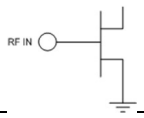
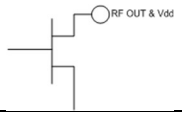
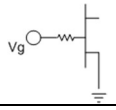


Outline Drawing [2]

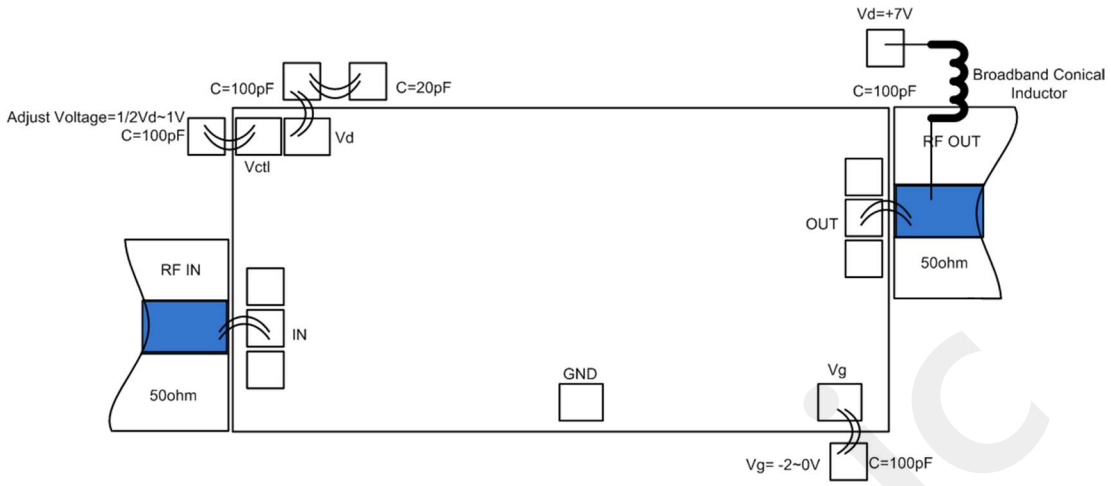


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RFIN	RF signal input, need to add DC blocking capacitor	
2	RFOUT	RF signal output, need to add DC blocking capacitors	
3	Vg	Amplifier gate bias requires an external 100pF bypass capacitor	
4	Vd	Amplifier drain bias requires an external 100pF bypass capacitor	
5	GND	Ground pressure point for probe test	
6	Vctl	Amplifier gain control terminal requires external 100pF bypass capacitor	
Die bottom	GND	The bottom of the Die needs good grounding with RF and DC	

Recommended assembly drawing



Note: 1. VD end to ground.

2. The power-on position is located at the RF output port of the Die and is powered by a broadband tapered inductor.
3. The gain control terminal (Vctl) adjusts the voltage from 1/2 Die supply voltage to +1V to achieve Die 0dB~12dB gain output tuning.
4, +6V power Die can work. At +6V operation, the output gain increases by 2~3dB and the output power decreases by 2~3dB.

Notes:

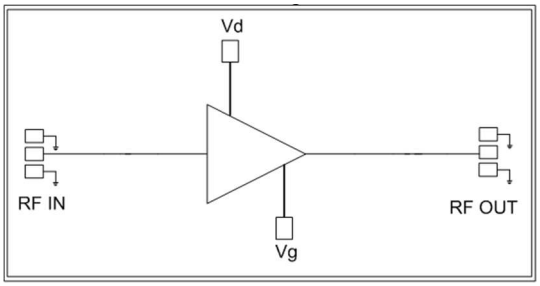
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Mounting operation recommendations: The bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use an AuSn solder sheet with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen gas ratio is 90/10) is blown into the Die, the temperature at the top of the tool is increased to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Adhesion process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be seen around it. For the curing conditions, please follow the information provided by the manufacturer of the conductive adhesive.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond guillotine pressure 40~50gf, wedge bond guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the Die ,The pressure point on the end of the package (or substrate).

GaAs MMIC Power Amplifier Die, 1-20GHz

Features:

Frequency range: 1-20GHz
Small signal gain: 12dB
Gain flatness: ≤±0.5dB@1-20GHz
P-1dB: 30dBm
Psat: 31dBm
Power supply: +10V (+11V)/320mA
50Ohm input/output
Die size: 2.23 X 1.35X 0.1mm

Functional block diagram:



General Description:

MYP302001 is an ultra-wideband distributed amplifier Die based on the pHEMT process. The frequency range covers 1 GHz to 20 GHz and small signal gain 12dB, saturated output power 30dBm. MYP302001 is currently the only GaAs monolithic Die with 1 GHz to 1 GHz output power greater than 1W, and it has excellent gain flatness. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max Ratings

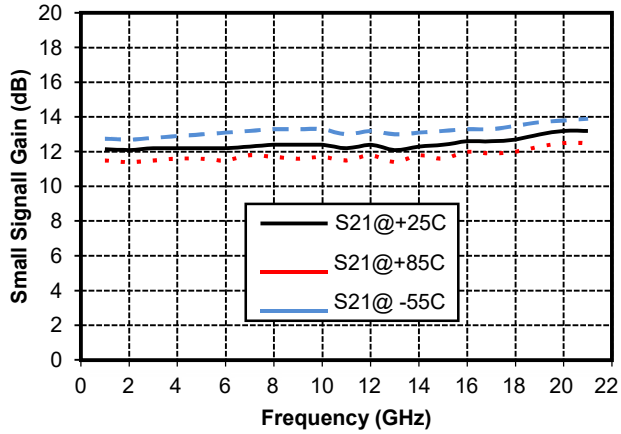
Max drain voltage	+14V
Max gate bias	-3V
Max input power	+23dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

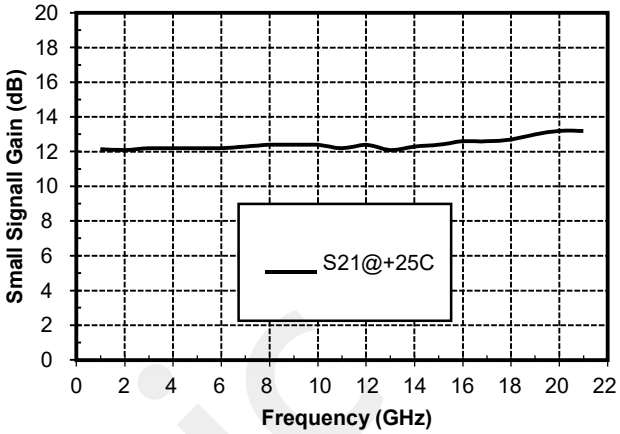
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications [Ta=+25°C, Vd=+10V(+11V),*Ids=320mA)

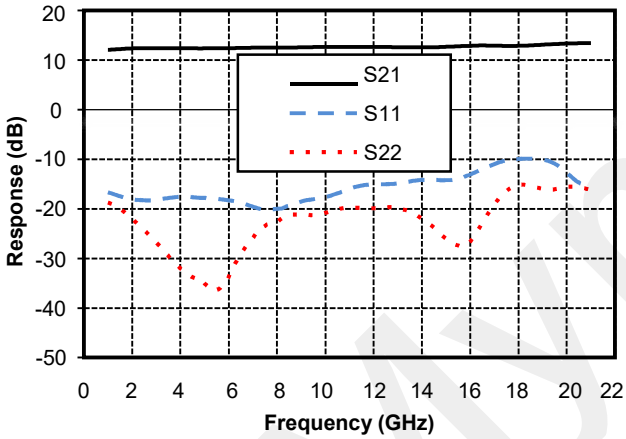
Parameter	Min	Typ.	Max	Min	Typ.	Max	Unit
Frequency Range	1-18			18-20			GHz
Small signal gain		12			13		dB
Gain flatness		±0.3			±0.3		dB
P-1dB	29.0	30	30.5	28.5	29	29.5	dBm
Psat		31			30		dBm
Third-order intermodulation		37			36		dBm
Input return loss		15			13		dB
Output return loss		20			15		dB
*Up to 320mA by tuning Vg terminal voltage -2V~0V.							

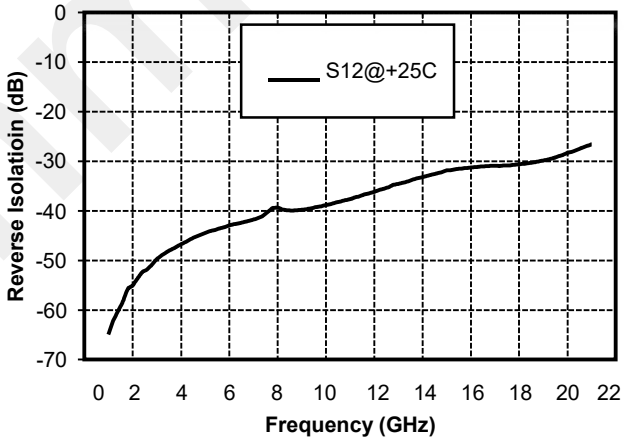
Gain vs. Temperature Gain vs. Frequency



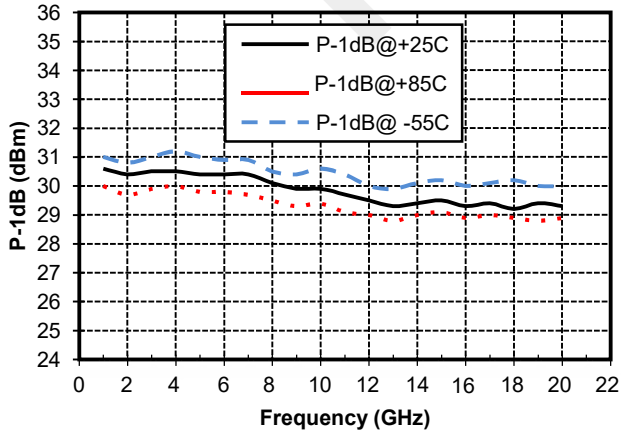


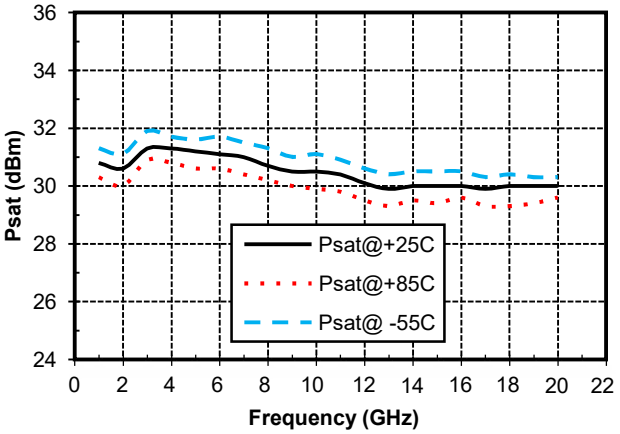
Gain & Input/Output Return Loss vs. Frequency Reverse Isolation vs. Frequency





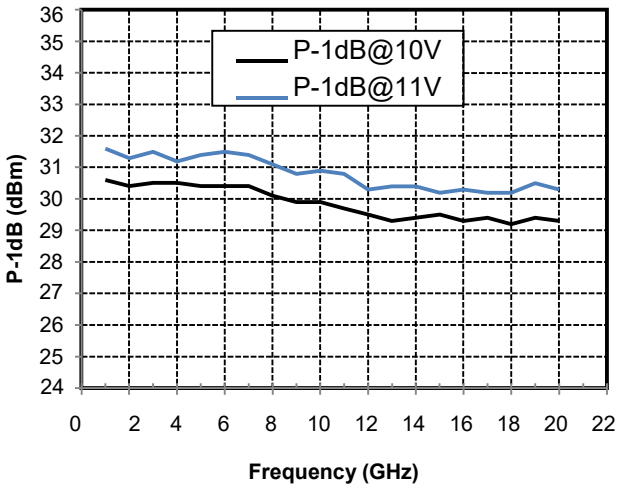
P-1dB vs. Temperature @ +10V Psat vs. Temperature @ +10V

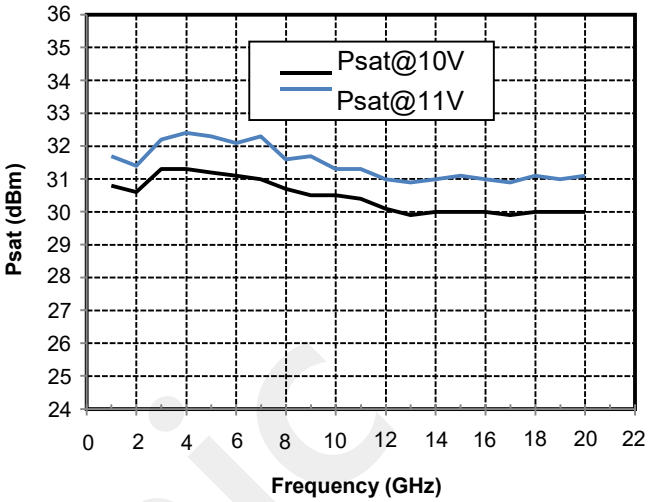




GaAs MMIC Power Amplifier Die, 1-20GHz

P-1dB vs. Voltage Psat vs. Voltage





Outline drawing

Pad Descriptions

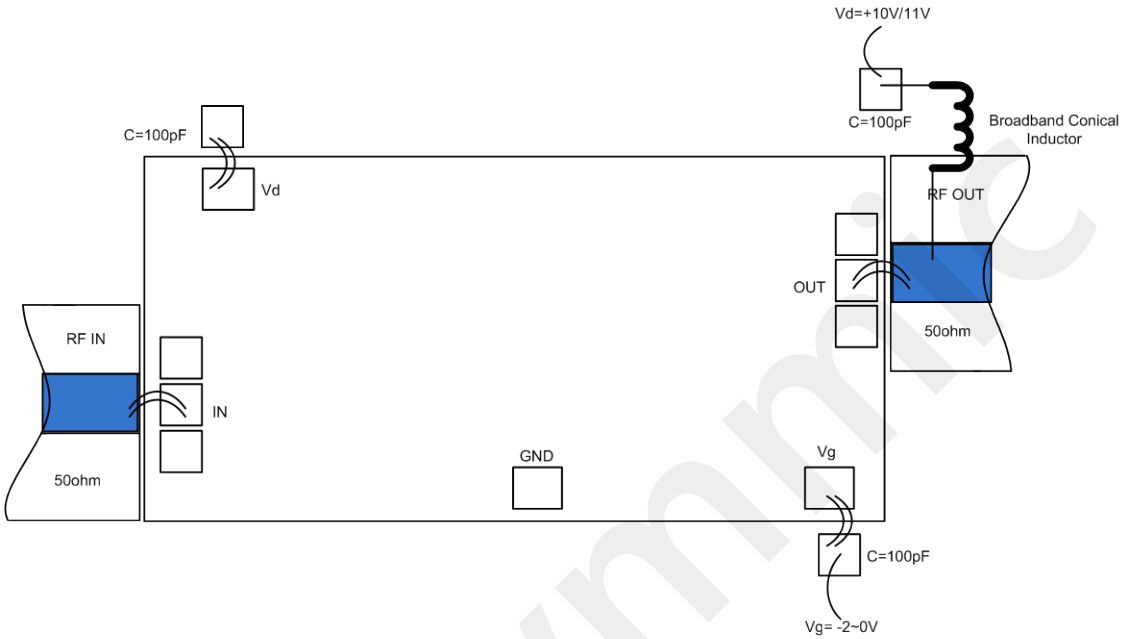
Pad Number	Function	Functional description
		50 ohm external circuit for signal input, need to add DC blocking capacitor
5	RF OUT	The output of the signal is connected to a 50 ohm circuit, which requires a DC blocking capacitor, an external DC bias network, and a drain current. Please refer to the following application circuits or consult the manufacturer
7	Vg	For gate bias pads, it is recommended that the bypass biased capacitor amplifier drain bias be applied
8	Vd	according to the following application circuit, requiring an
2,3,4,6, bottom of the Die	GND	external 100pF bypass capacitor

GaAs MMIC Power Amplifier Die, 1-20GHz

Application circuit outline drawing

A wide-band, tolerant 700mA bias network (broadband tapered inductor + wideband capacitor) is required to be soldered on the RF OUT side. Recommended wideband tapered inductor model: CC19T40K240G5-C, recommended wideband capacitor model: 550L104KT.

Recommended assembly drawing



- the Pin of lapered inductor should be closest to the RF output terminal

Notes:

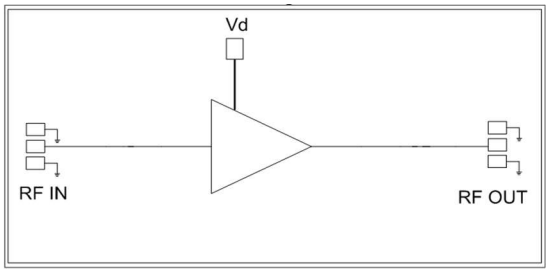
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Mounting operation recommendations: The bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use an AuSn solder sheet with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen gas ratio is 90/10) is blown into the Die, the temperature at the top of the tool is increased to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Adhesion process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be seen around it. For the curing conditions, please follow the information provided by the manufacturer of the conductive adhesive.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond guillotine pressure 40~50gf, wedge bond guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the Die ,The pressure point on the end of the package (or substrate).

GaAs MMIC Power Amplifier Die, 2-18GHz

Features:

Frequency range: 2-18GHz
Small signal gain: 13dB
P-1dB: 27.5dBm
Psat: 28.5dBm
Power supply: +10V/350mA
50Ohm input/output
100% on-Die test
Die size: 2.25 x 1.45 x 0.1mm

Functional block diagram:



General Description:

MYP281802 is an ultra-wideband distributed amplifier Die based on the pHEMT process. The frequency range covers 2-18 GHz, the small signal gain is 13dB, and the saturated output power is 28.5dBm. The MYP281802 is powered from a single +10V supply. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max Ratings

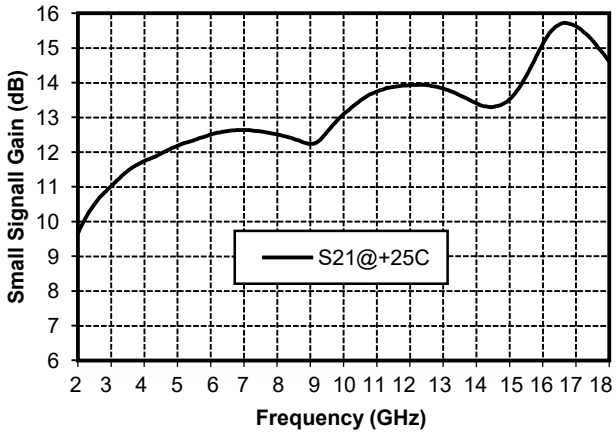
Max drain voltage	+14V
Max gate bias	-3V
Max input power	+23dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

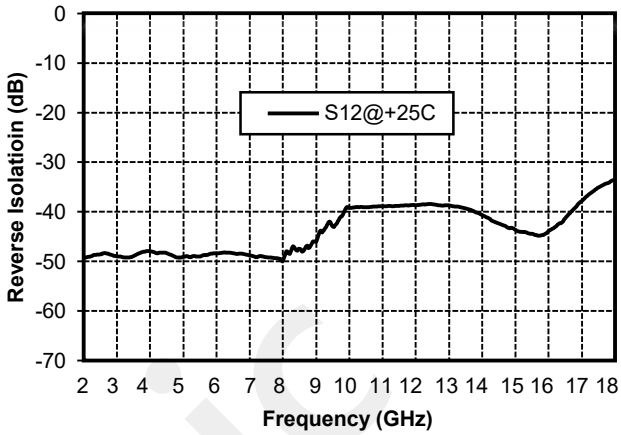
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications (Ta=+25°C, Vd=+10V, Ids=350mA)

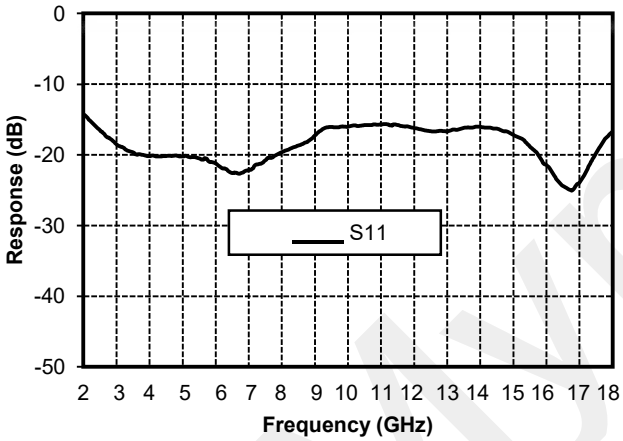
Parameter	Min	Typ.	Max	Unit
Frequency Range		2-18		GHz
Small signal gain	9.5	13	15.5	dB
Gain flatness		±3		dB
P-1dB	26.5	27.5	28.5	dBm
Psat	27.5	28.5	29.5	dBm
Input return loss	15	18	-	dB
Output return loss	10	12	-	dB
Thermal resistance	Substrate temperature +85°C, RF signal input, Rth=18.5°C/W			

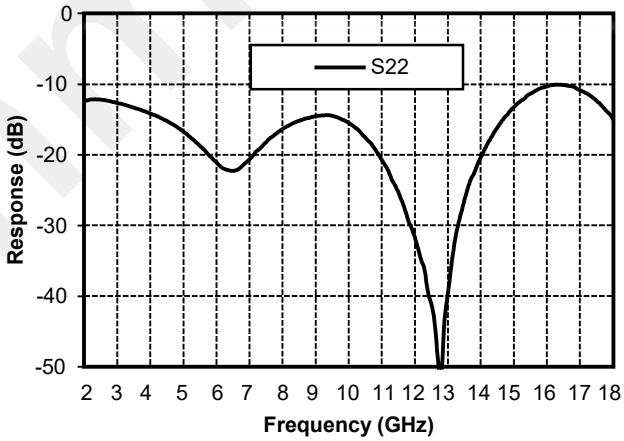
Gain vs. Frequency Reverse Isolation vs. Frequency



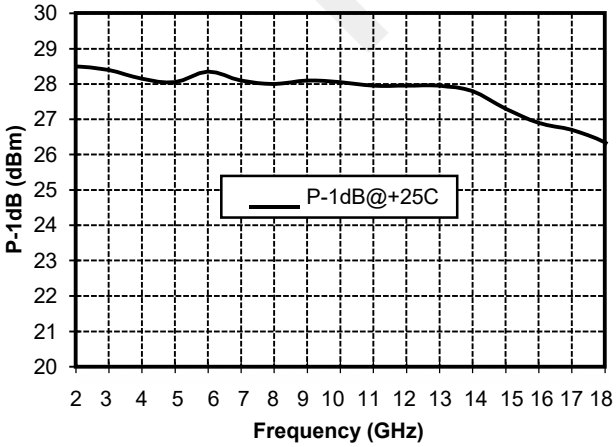


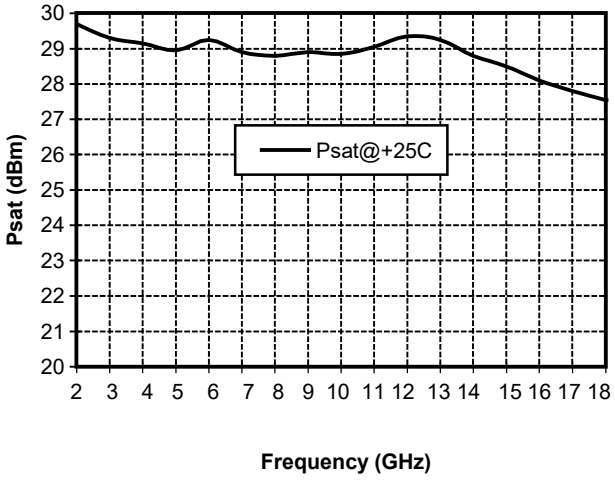
Input Return Loss vs. Frequency Output Return Loss vs. Frequency





P-1dB vs. Frequency Psat vs. Frequency

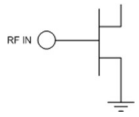
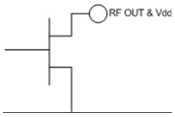
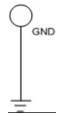




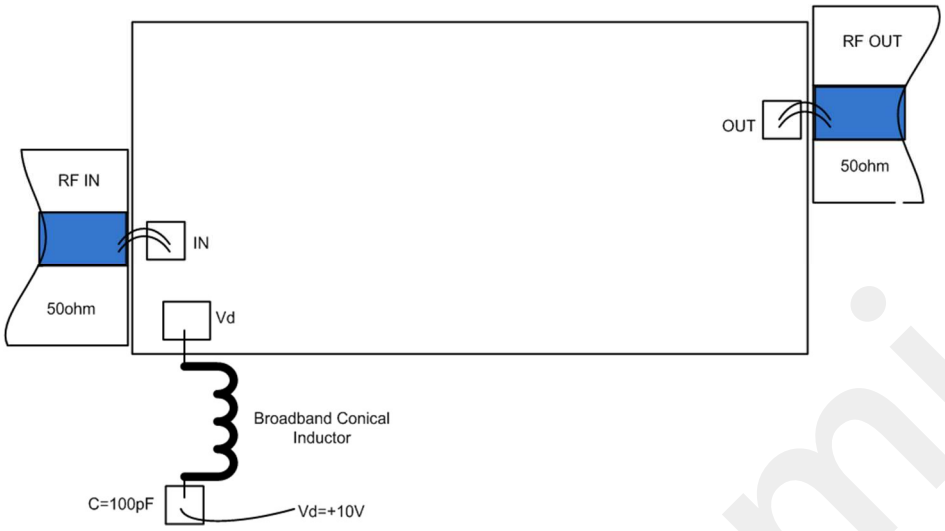
Outline Drawing [2]

[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	50 ohm external circuit for signal input, need to add DC blocking capacitor	
2	RF OUT	50 ohm external circuit for signal output, need to add DC blocking capacitor	
3	Vd	Amplifier Drain Bias, External Broadband Inductor and 100pF Required Bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Notes:

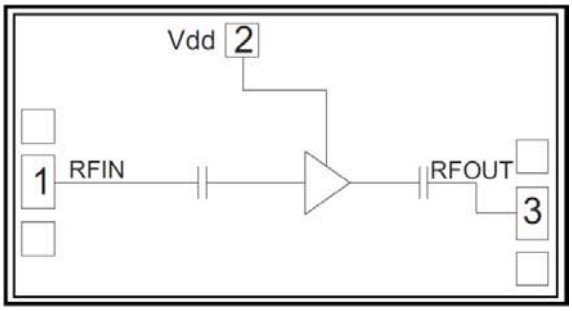
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Mounting operation recommendations: The bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 2-20GHz

Features:

Frequency Range: 2-20GHz
Small Signal Gain: 19.5dB
Gain Flatness: ≤±1.5dB
P-1dB: 21dBm
Psat: 22dBm
Power supply: +5V/130mA
50Ohm input/output
100% on-Die test
Die size: 1.62 x 1.06 x 0.1mm

Functional block diagram:



General Description:

MYP222002 is a broadband amplifier Die based on the pHEMT process. The frequency range covers 2-20 GHz, small signal gain 19.5 dB, and saturated output power 22 dBm. The Die uses a single +5V power supply. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max Ratings

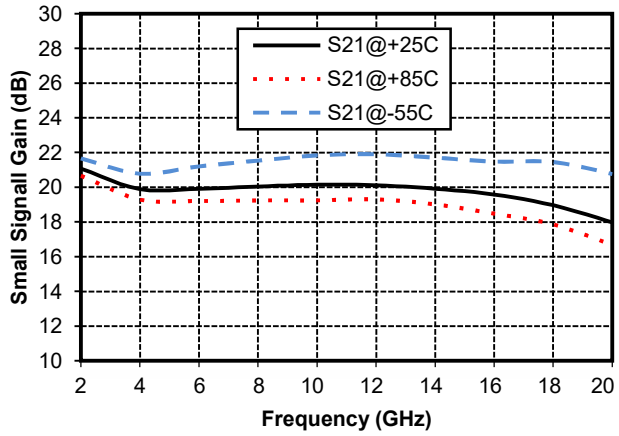
Max drain voltage	+7V
Max input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

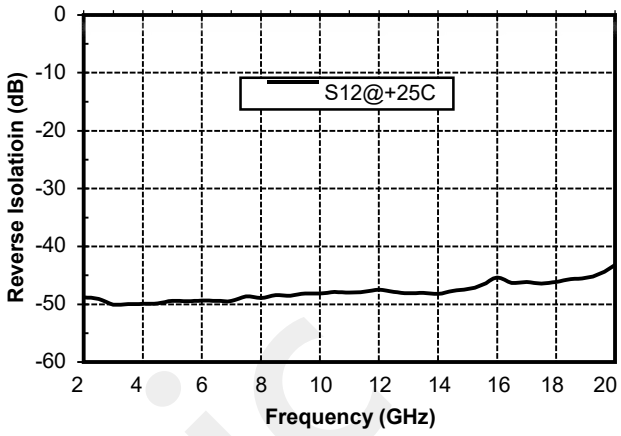
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications(TA= +25°C, Vd=+5V)

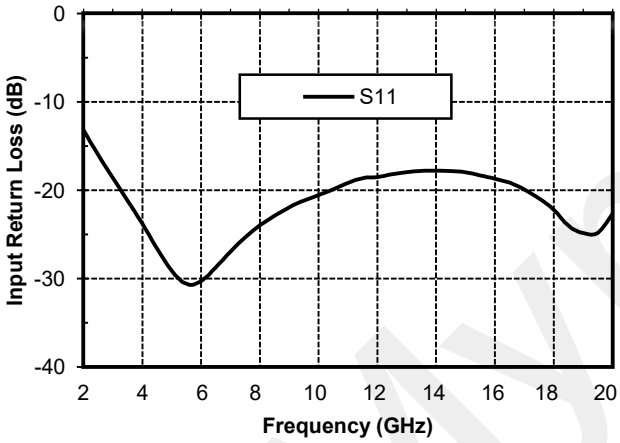
Parameter	Min	Typ.	Max	Unit
Frequency Range		2-20		GHz
Small signal gain	18	19.5	20	dB
Gain flatness		±1.0		dB
P-1dB	20.5	21	21.5	dBm
Psat	21.5	22	22.5	dBm
Input return loss	17	22	-	dB
Output return loss	12	15	-	dB
Quiescent Current		130		mA

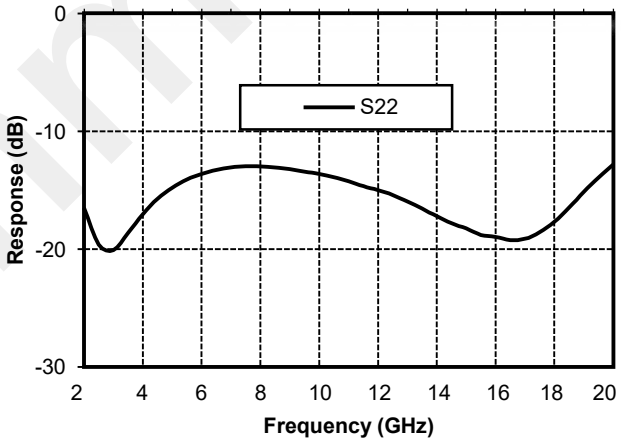
Gain vs. Temperature Reverse Isolation vs. Frequency



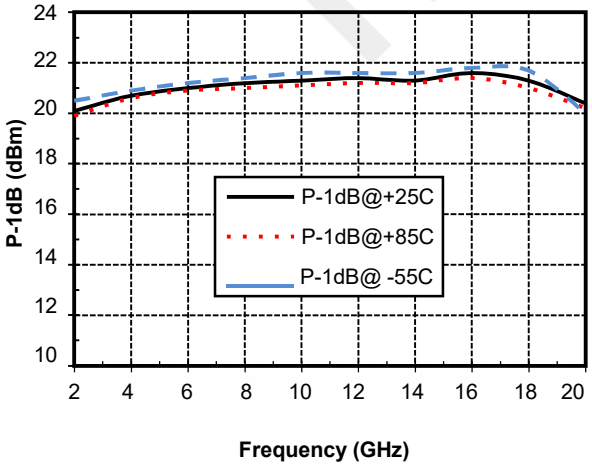


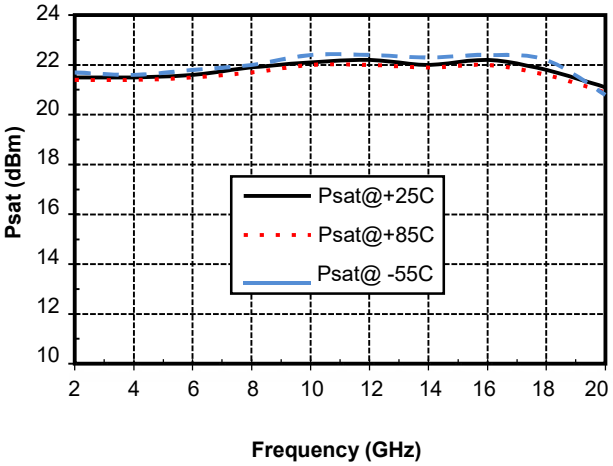
Input Return Loss vs. Frequency Output Return Loss vs. Frequency



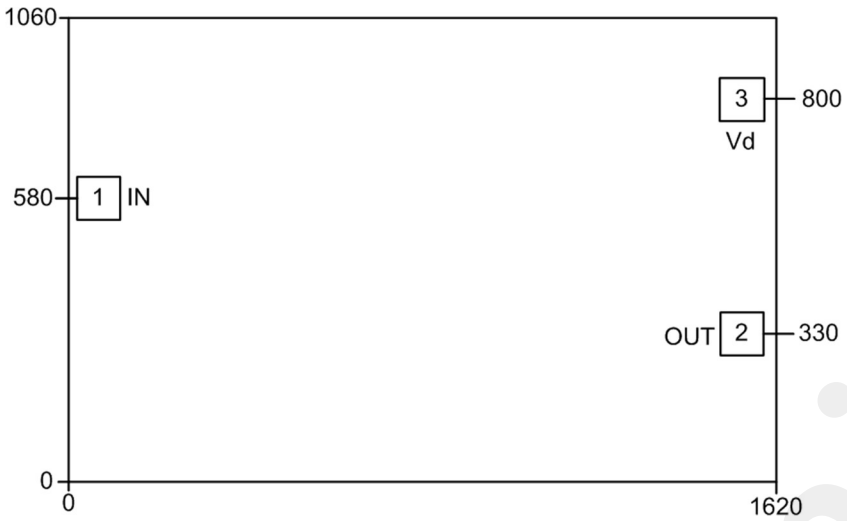


P-1dB vs. Temperature Psat vs. Temperature





Outline Drawing

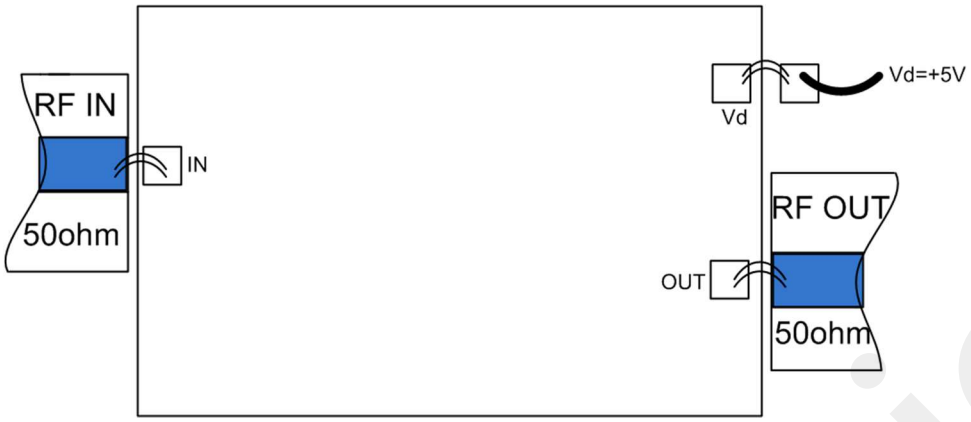


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	RF signal input, no need for DC blocking capacitors	
2	RF OUT	RF signal output without DC blocking capacitors	
3	Vd	Amplifier drain bias requires an external 100pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Notes:

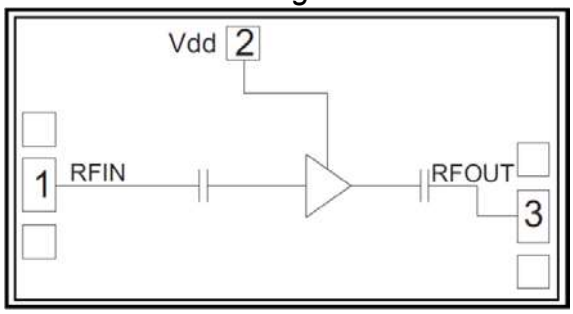
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Mounting operation recommendations: The bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 5-20GHz

Features:

Frequency Range: 5-20GHz
Small Signal Gain: 22dB
Gain Flatness: ≤±2.0dB
Noise Figure: 2.7dB
P-1dB: 20dBm
Psat: 21dBm
Power supply: +5V/120mA
50Ohm input/output
100% on-Die test
Die size: 1.85 x 1.05 x 0.1mm

Functional block diagram:



General Description:

MYP2005E is a broadband amplifier Die based on the pHEMT process. The frequency range covers 5 to 20 GHz, small signal gain 22 dB, and saturated output power 20.5 dBm. The Die uses a single +5V power supply. The Die via metallization process ensures good grounding and the backside is metallized for eutectic sintering or conductive adhesive bonding processes.

Absolute Max Ratings

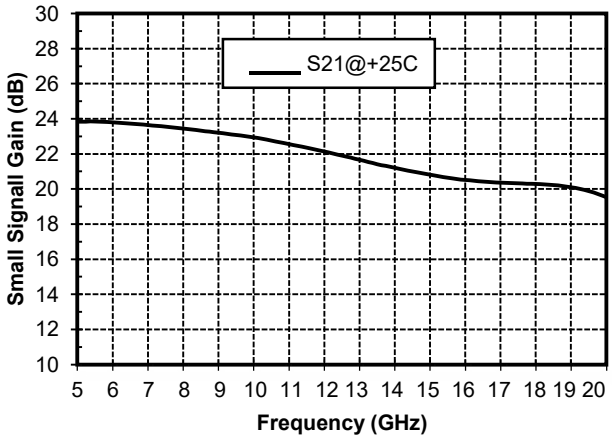
Max drain voltage	+7V
Max input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

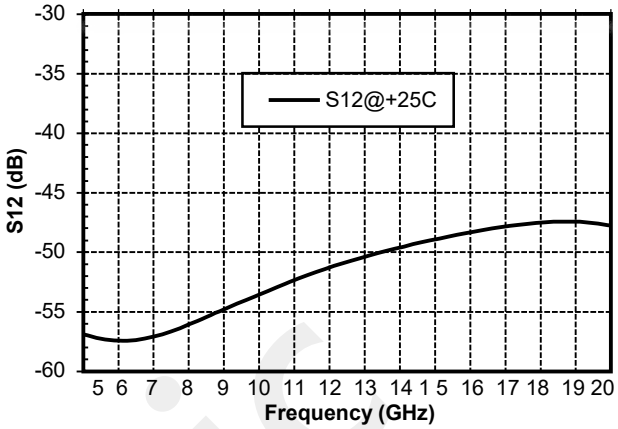
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications(TA= +25°C, Vd=+5V)

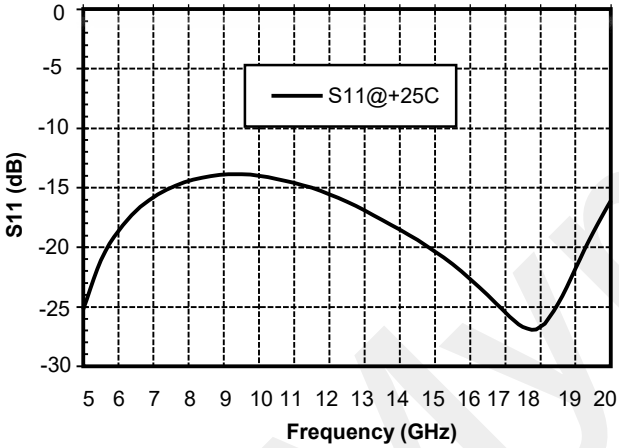
Parameter	Min	Typ.	Max	Unit
Frequency Range		5-20		GHz
Small signal gain	19.5	22	23.5	dB
Gain flatness		±2.0		dB
Noise Figure		2.7		
P-1dB	19.5	20	20.5	dBm
Psat	20.5	21	21.5	dBm
Input return loss	14	19	-	dB
Output return loss	14	16	-	dB
Quiescent Current		120		mA

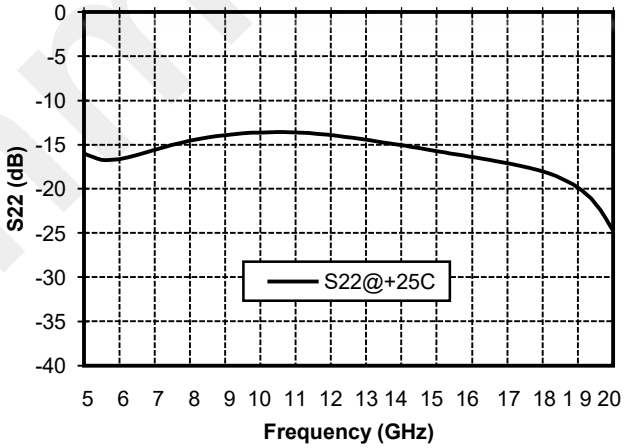
Gain vs. Frequency Reverse Isolation vs. Frequency



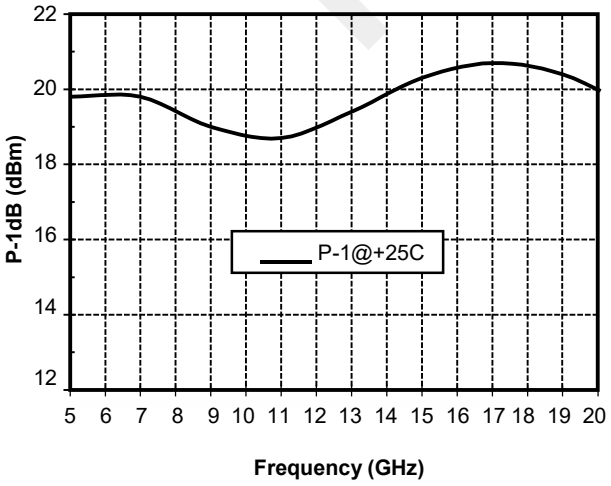


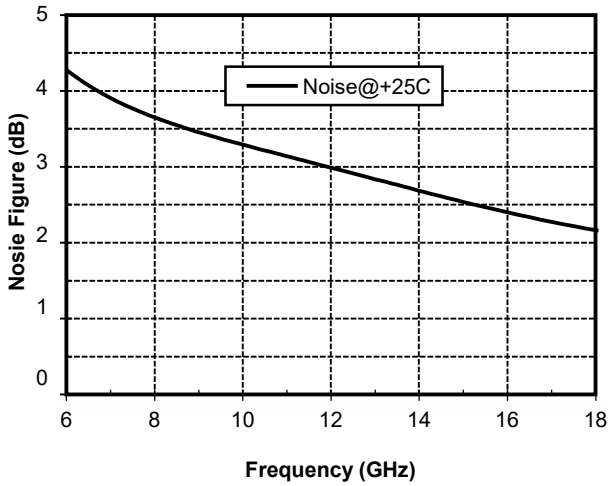
Input Return Loss vs. Frequency Output Return Loss vs. Frequency



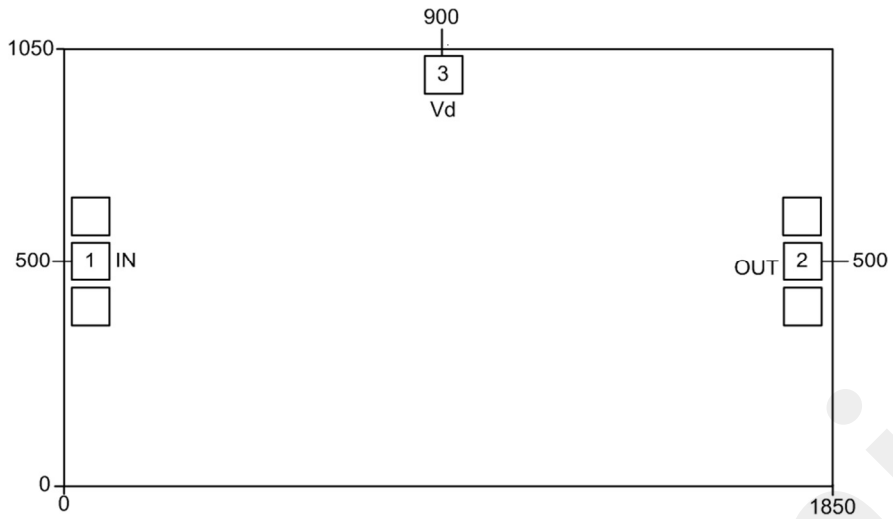


P-1dB vs. Frequency Noise Figure vs. Frequency



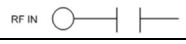


Outline Drawing

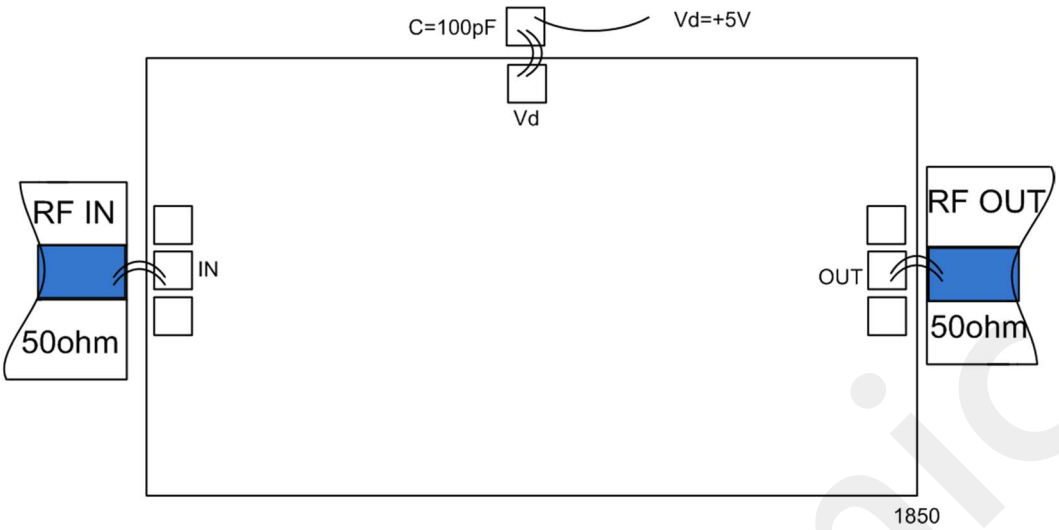


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	RF signal input, no need for DC blocking capacitors	
2	RF OUT	RF signal output without DC blocking capacitors	
3	Vd	Amplifier drain bias requires an external 100pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Notes:

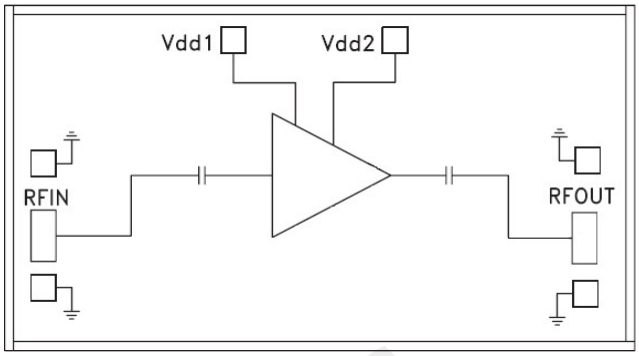
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Rack Mounting Recommendations: Bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Do not rub for more than 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 6-20GHz

Features:

Frequency Range: 6-20GHz
Small Signal Gain: 15dB
Gain Flatness: ≤±0.2dB
Noise Figure: 3.8dB
P-1dB: 19.5dBm
Psat: 20.5dBm
Power Supply: +5V/110mA
50Ohm input/output
100% on-Die test
Die size: 1.025 x 1.05 x 0.1mm

Functional block diagram:



General Description:

MYP2006A is a broadband amplifier Die based on the pHEMT process. The frequency range covers 6~20GHz, small signal gain is 15dB, and P-1 output power.19.5dBm. The Die uses a single +5V power supply. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max Ratings

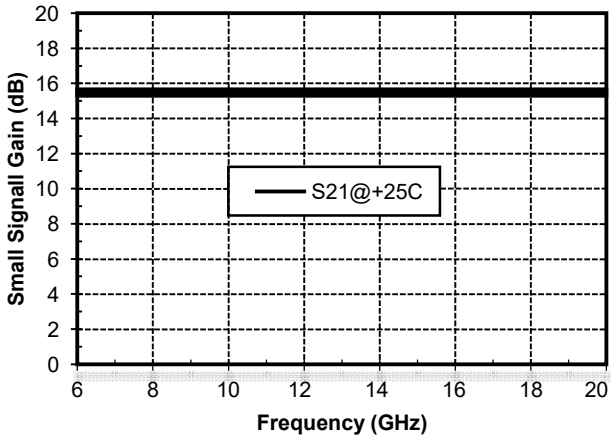
Max drain voltage	+7V
Max input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

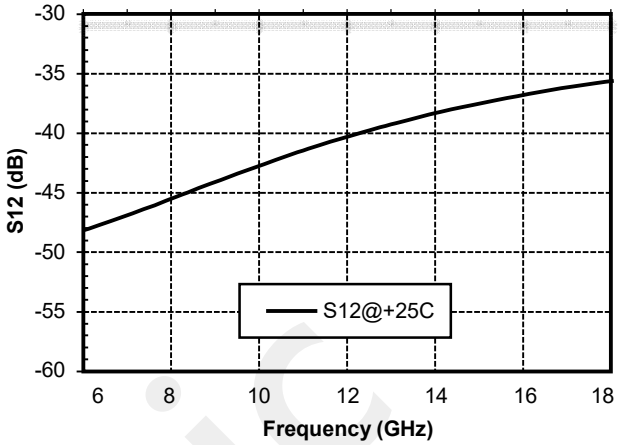
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications(TA = +25°C, Vd = +5V)

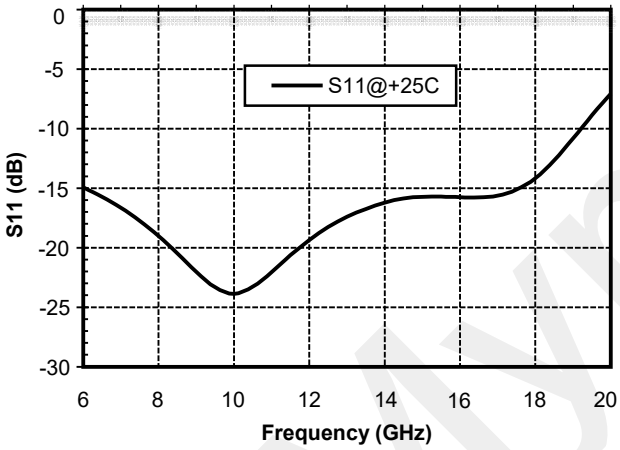
Parameter	Min	Typ.	Max	Unit
Frequency Range		6-20		GHz
Small signal gain	-	15	-	dB
Gain flatness		±0.2		dB
Noise Figure	-	3.8	6.0	dB
P-1dB	18.5	19.5	-	dBm
Psat	-	20.5	-	dBm
Input return loss	7	16	-	dB
Output return loss	10	17	-	dB
Quiescent Current		110		mA

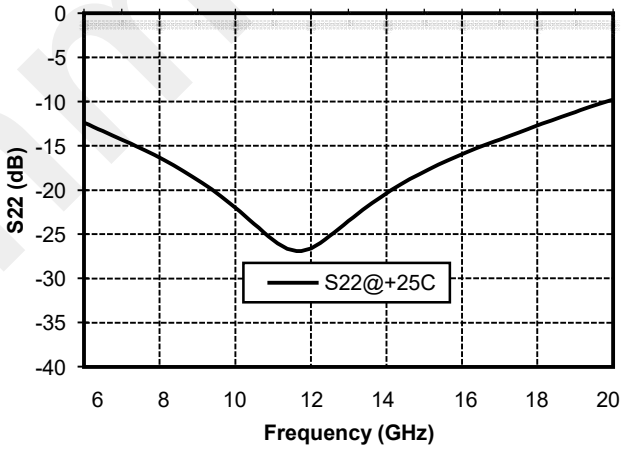
Gain vs. Frequency Reverse Isolation vs. Frequency



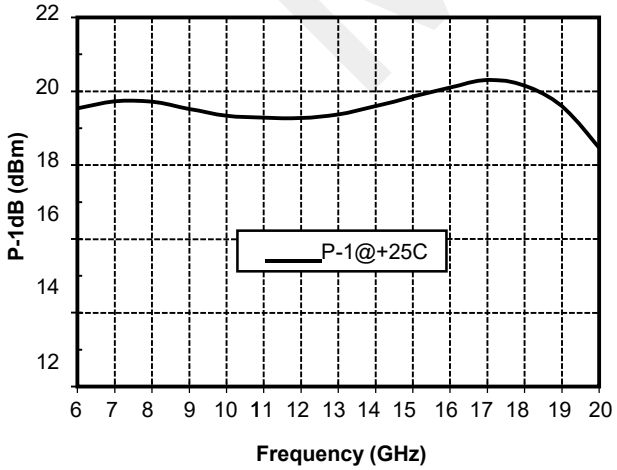


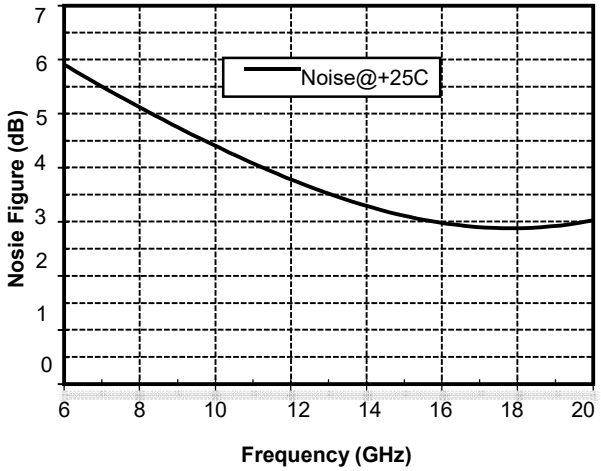
Input Return Loss vs. Frequency Output Return Loss vs. Frequency



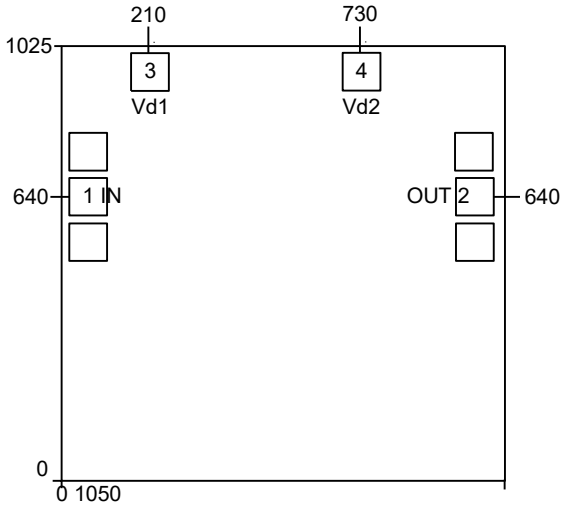


P-1dB vs. Frequency Noise Figure vs. Frequency



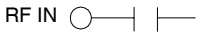
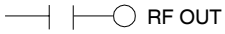
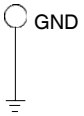


Outline drawing [2]

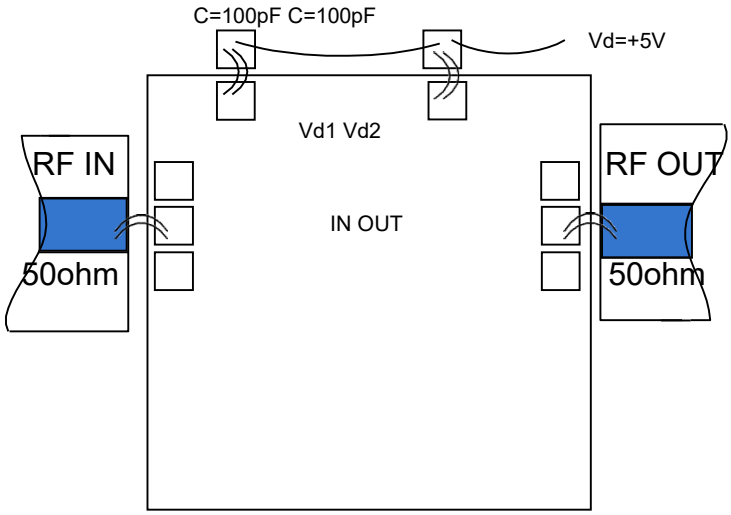


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	RF signal input, no need for DC blocking capacitors	
2	RF OUT	RF signal output without DC blocking capacitors	
3, 4	Vd	Amplifier drain bias requires an external 100pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Use caution

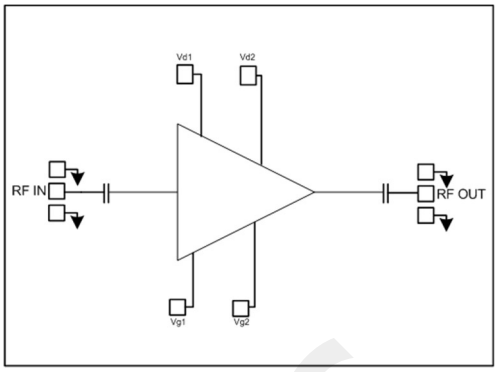
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Rack Mounting Recommendations: Bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 20-45GHz

Features:

Frequency Range: 20-45GHz
Small Signal Gain: 20dB
Gain flatness: ≤±2.0dB
P-1dB: 20.5dBm
Psat: 21.5dBm
Power supply: +4.5V/180mA
50Ohm input/output
100% on-Die test
Die size: 1.85 x 0.8 x 0.1mm

Functional block diagram:



General Description :

MYP2006A is a broadband amplifier Die based on the pHEMT process. The frequency range covers 20 to 45 GHz, small signal gain is 20dB, and saturated output power is 21.5dBm. The Die operates from a single +4.5V supply. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max Ratings

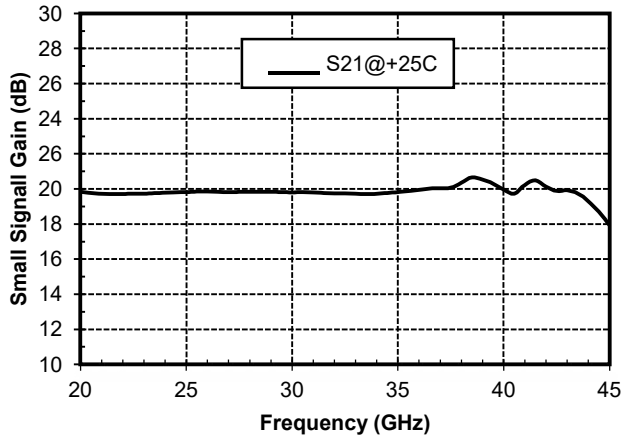
Max drain voltage	+8V
Max gate bias	-3V
Max input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

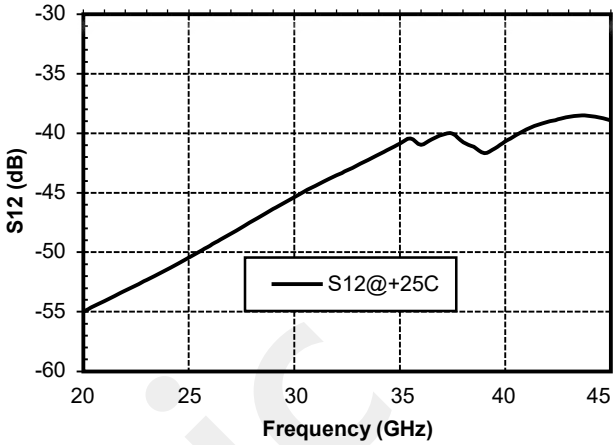
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications(TA= +25°C, Vd=+4.5V)

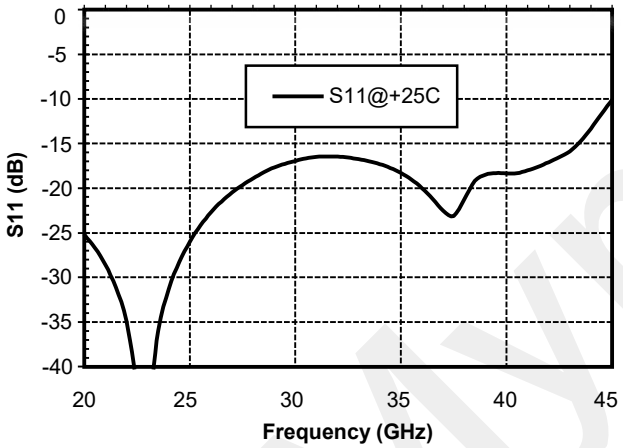
Parameter	Min	Typ.	Max	Unit
Frequency Range		20-45		GHz
Small signal gain	18	20	20.5	dB
Gain flatness		±1.25		dB
P-1dB	19.5	20.5	21.5	dBm
Psat	20.5	21.5	22.5	dBm
Input return loss	10	21	-	dB
Output return loss	7	11	-	dB
Quiescent Current		180		mA
* By tuning the Vg terminal voltage -2V to 0V to 180mA, the Vg terminal voltage is expected to be -0.75V.				

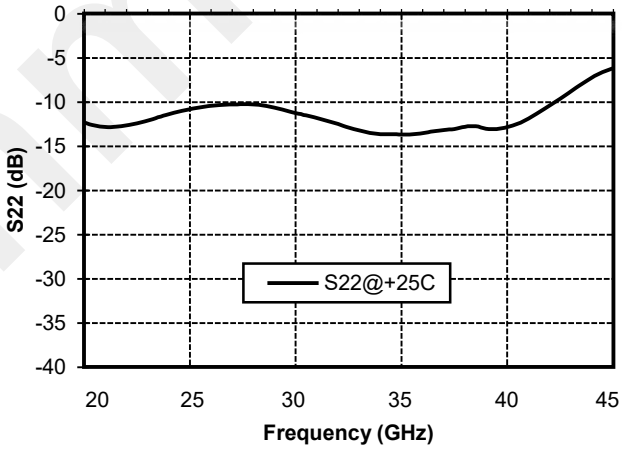
Gain vs. Frequency Reverse Isolation vs. Frequency



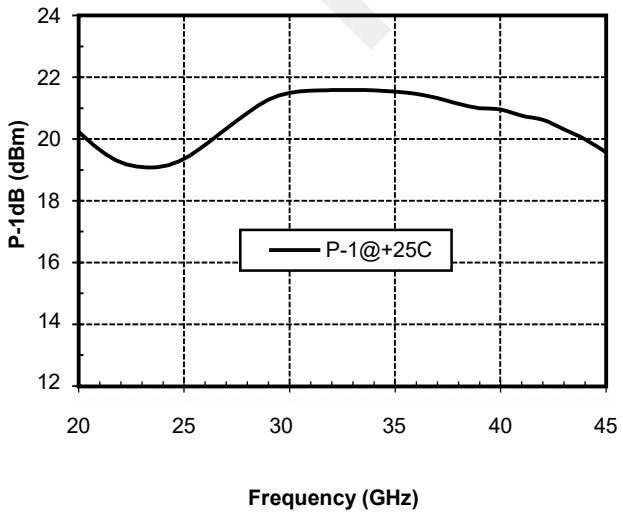


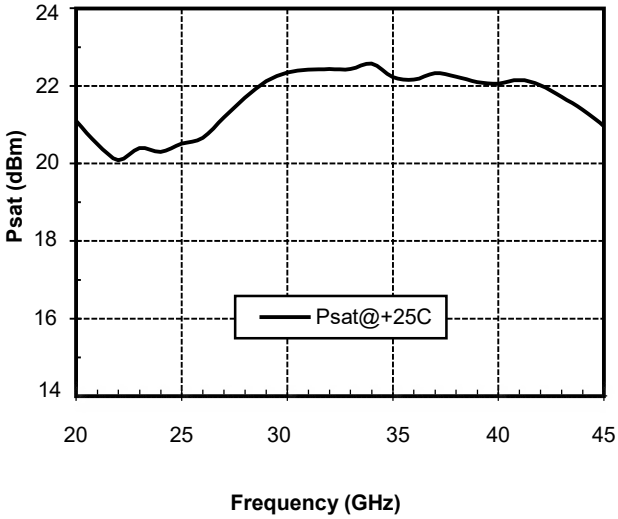
Input Return Loss vs. Frequency Output Return Loss vs. Frequency



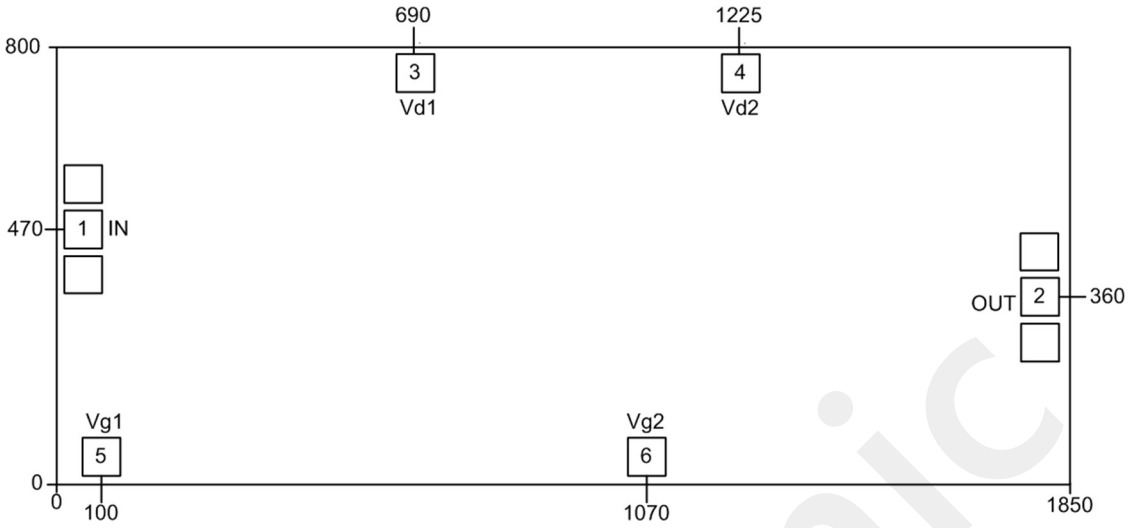


P-1dB vs. Frequency Noise Figure vs. Frequency



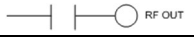
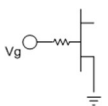


Outline Drawing

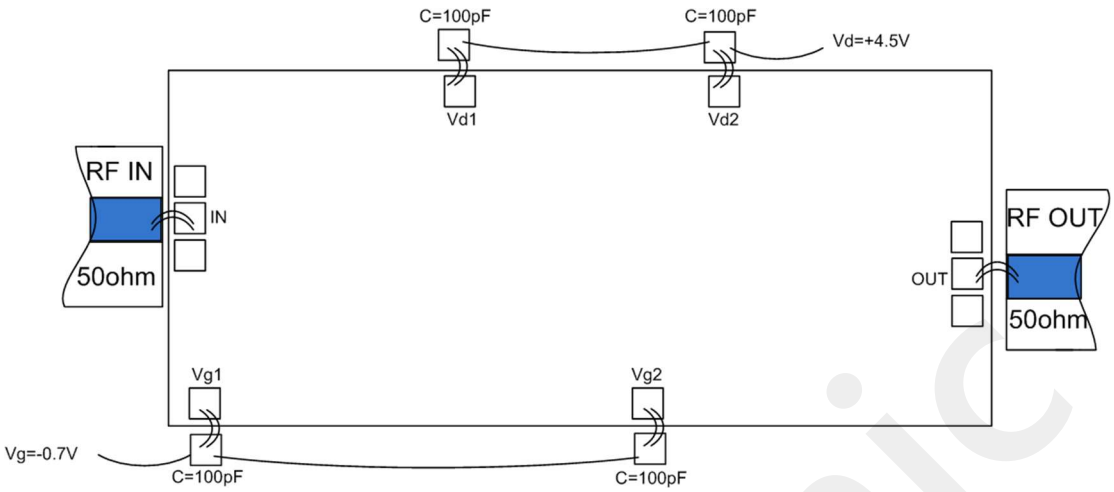


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	RF signal input, no need for DC blocking capacitors	
2	RF OUT	RF signal output without DC blocking capacitors	
3, 4	Vd1, Vd2	Amplifier drain bias requires an external 100pF bypass capacitor	
5, 6	Vg1, Vg2	Amplifier gate bias requires an external 100pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Notes:

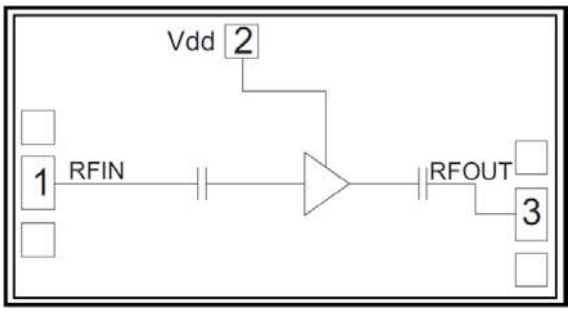
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Mounting operation recommendations: The bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 1-20GHz

Features:

Frequency range: 1-20GHz
Small signal gain: 12.5dB
Gain flatness: ≤±0.75dB
Noise figure: 4.5dB
P-1dB: 23dBm
Psat: 24.5dBm
Power supply: +8V/250mA
50Ohm input/output
100% on-Die test
Die size: 2.6 x 1.65 x 0.1mm

Functional block diagram:



General Description:

MYP2001B is a wide dynamic low noise amplifier Die based on pHEMT technology. The frequency range covers 1~20GHz, small signal gain is 12.5dB, and P-1 output power is 23dBm. The Die uses a single +8V power supply. The Die via metallization process ensures good grounding and metallization on the back, suitable for eutectic sintering or conductive adhesive bonding processes.

Absolute Max Ratings

Max drain voltage	+10V
Max input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

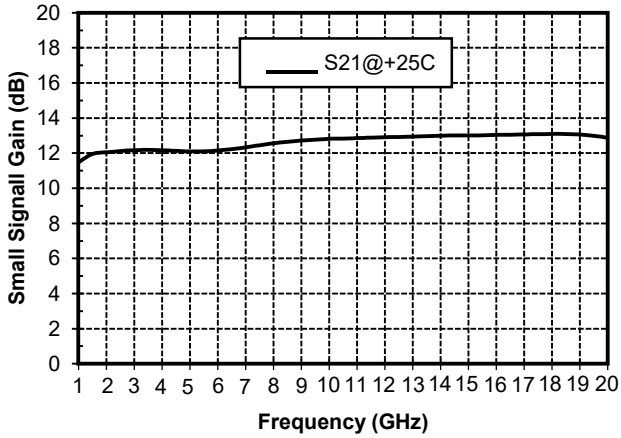
[1] Exceeding any of the above Max limits may cause permanent damage.

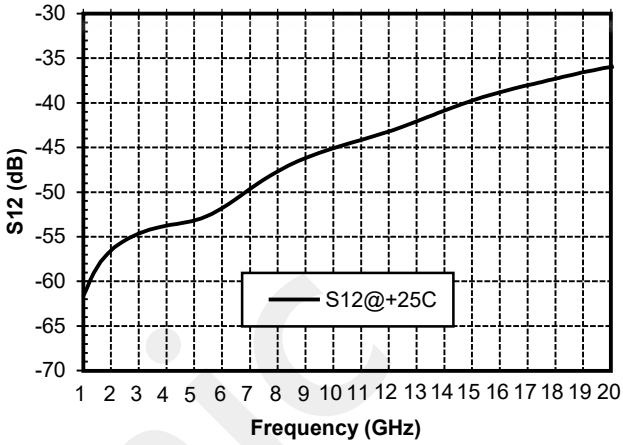
Electrical Specifications(TA= +25°C, Vd=+8V)

Parameter	Min	Typ.	Max	Unit
Frequency Range		1-20		GHz
Small signal gain	11.5	12.5	13	dB
Gain flatness		±0.75		dB
Noise Figure	-	4.5	5.5	dB
P-1dB	21	23	twenty four	dBm
Psat	22.5	24.5	25.5	dBm
Input return loss	10	19	-	dB
Output return loss	9	18	-	dB
Quiescent Current		250		mA

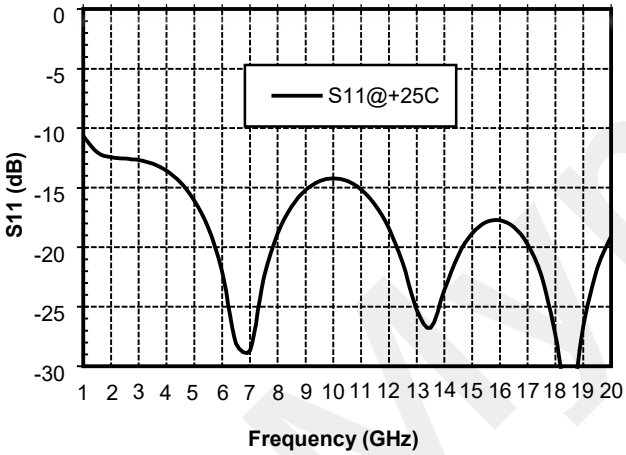
GaAs MMIC Power Amplifier Die, 1-20GHz

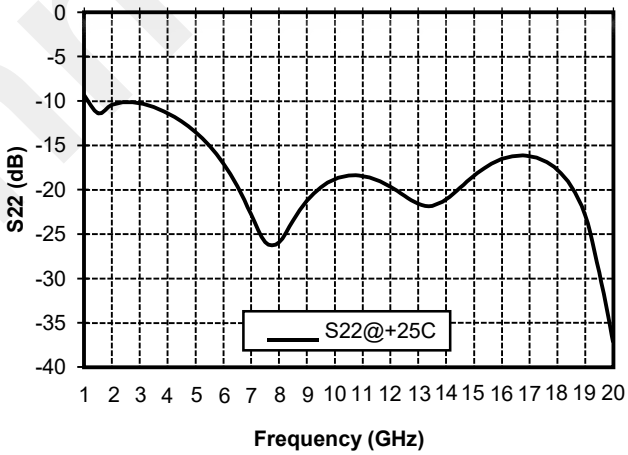
Gain vs. Frequency Reverse Isolation vs. Frequency



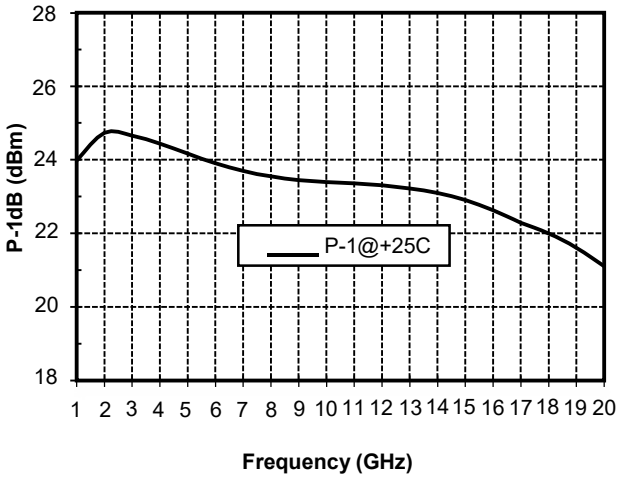


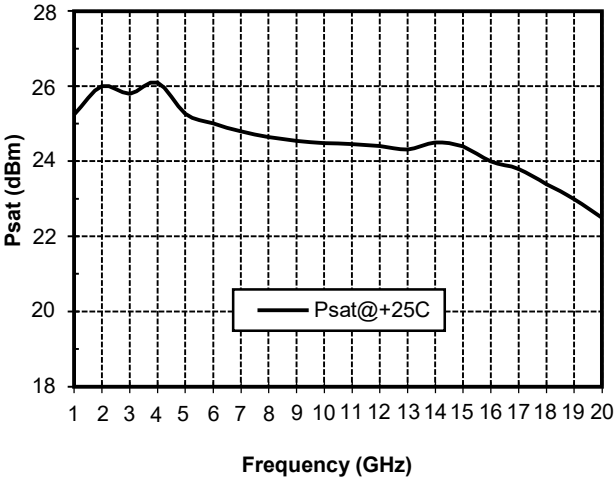
Input Return Loss vs. Frequency Output Return Loss vs. Frequency



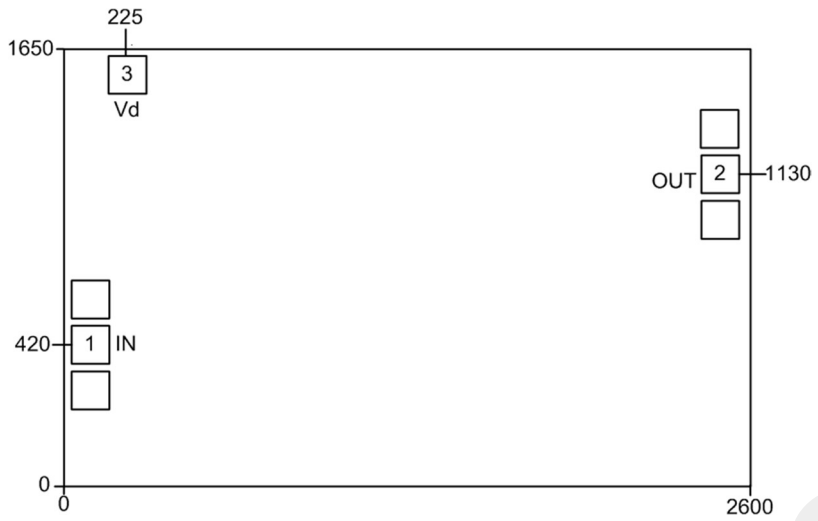


P-1dB vs. Frequency Psat vs. Frequency



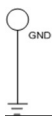


Outline drawing [2]

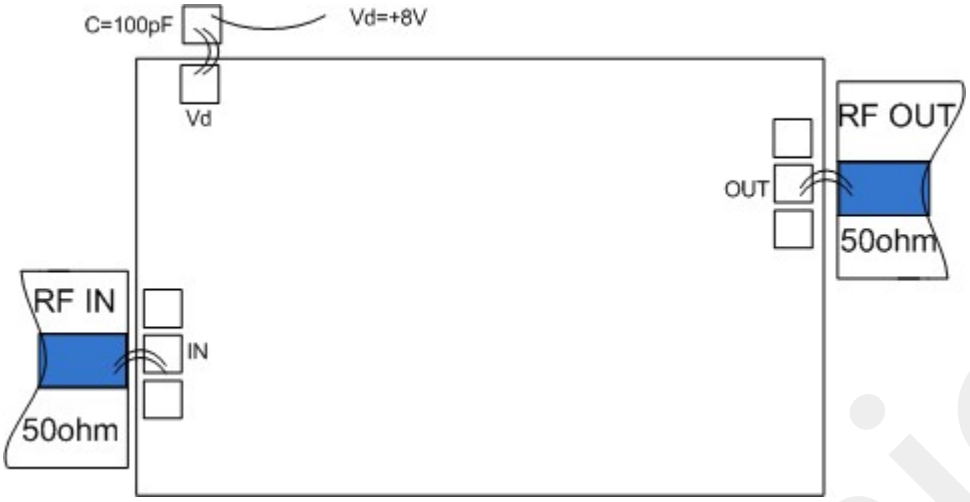


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	RF signal input, no need for DC blocking capacitors	
2	RF OUT	RF signal output without DC blocking capacitors	
3	Vd	Amplifier drain bias requires an external 100pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Notes:

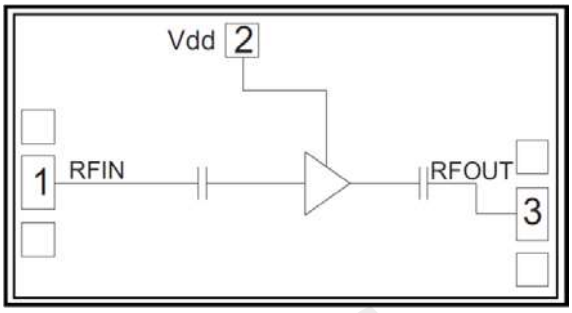
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Mounting operation recommendations: The bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 6-18GHz

Features:

Frequency Range: 6-18GHz
Small Signal Gain: 10.5dB
Gain Flatness: ≤±0.2dB
Noise Figure: 3.2dB
P-1dB: 19dBm
Psat: 20dBm
Power supply: +5V/75mA
50Ohm input/output
100% on-Die test
Die size: 1.65 x 1.05 x 0.1mm

Functional block diagram:



General Description:

MYP1806A is a wide dynamic low noise amplifier Die based on pHEMT technology. The frequency range covers 6~18GHz, small signal gain is 10.5dB, and P-1 output power is 19dBm. The Die uses a single +5V power supply. Die via metallization process ensures good grounding and backside Metallization, suitable for eutectic sintering or conductive adhesive bonding process.

Absolute Max Ratings

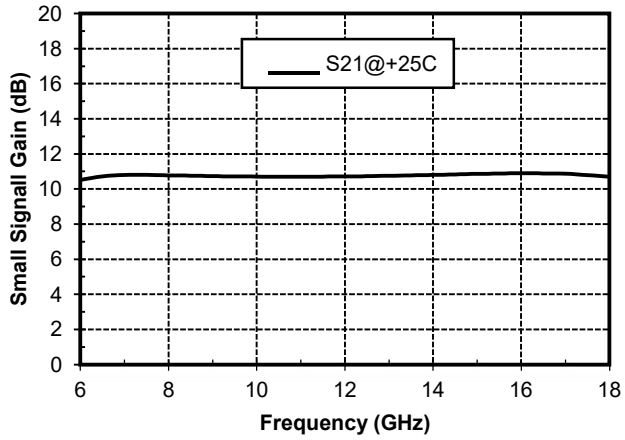
Max drain voltage	+7V
Max input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

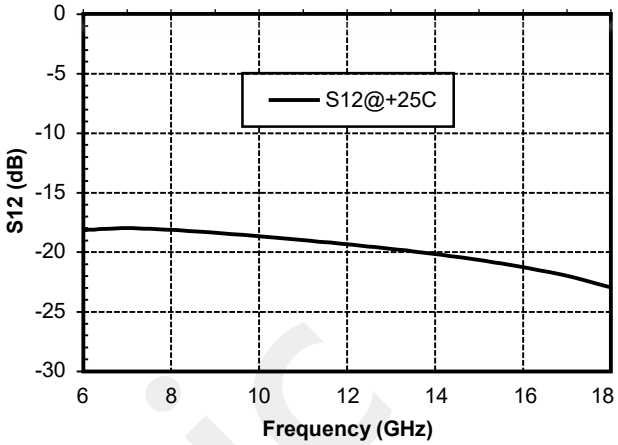
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications(TA= +25°C, Vd=+5V)

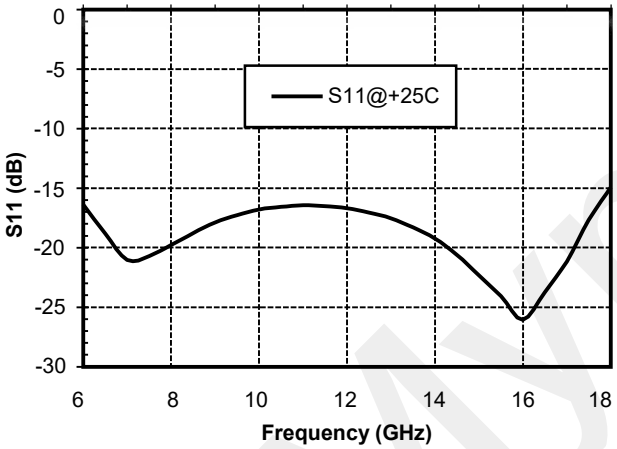
Parameter	Min	Typ.	Max	Unit
Frequency Range		6-18		GHz
Small signal gain	-	10.5	-	dB
Gain flatness		±0.2		dB
Noise Figure	3.1	3.2	3.6	dB
P-1dB	18	19	-	dBm
Psat	-	20	-	dBm
Input return loss	14	19	-	dB
Output return loss	14	17	-	dB
Quiescent Current		75		mA

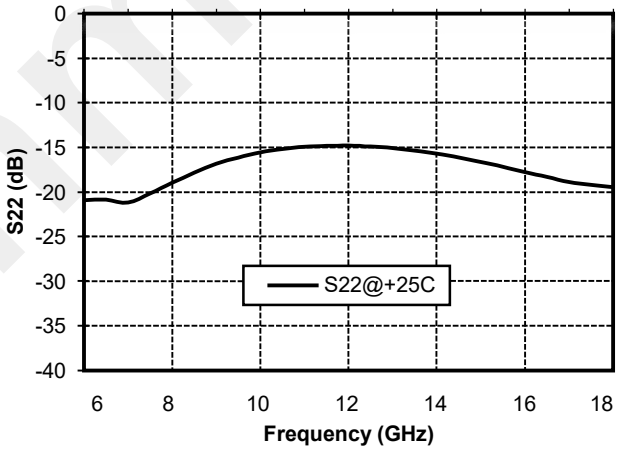
Gain vs. Frequency Reverse Isolation vs. Frequency



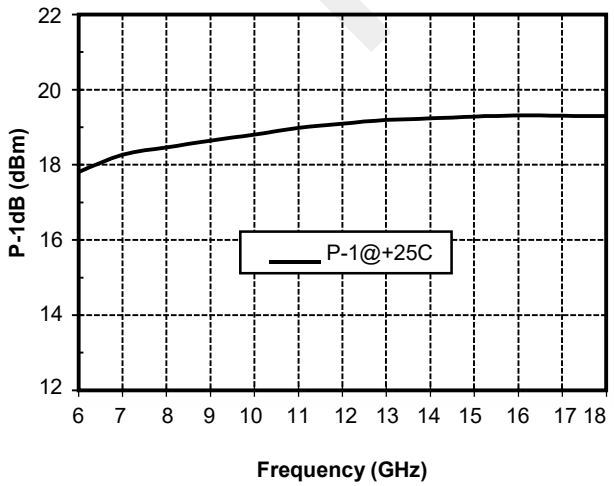


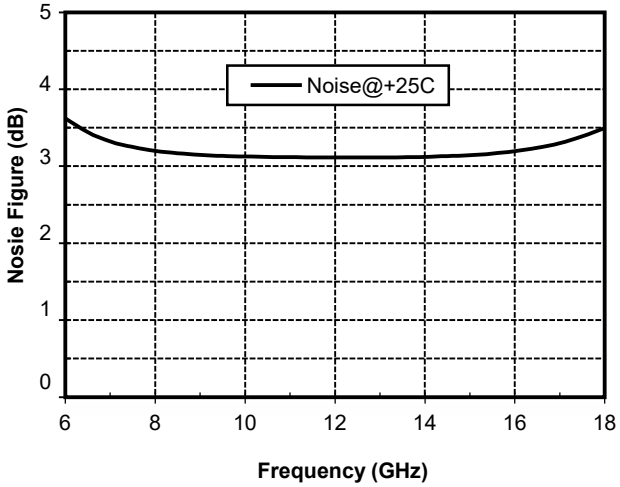
Input Return Loss vs. Frequency Output Return Loss vs. Frequency



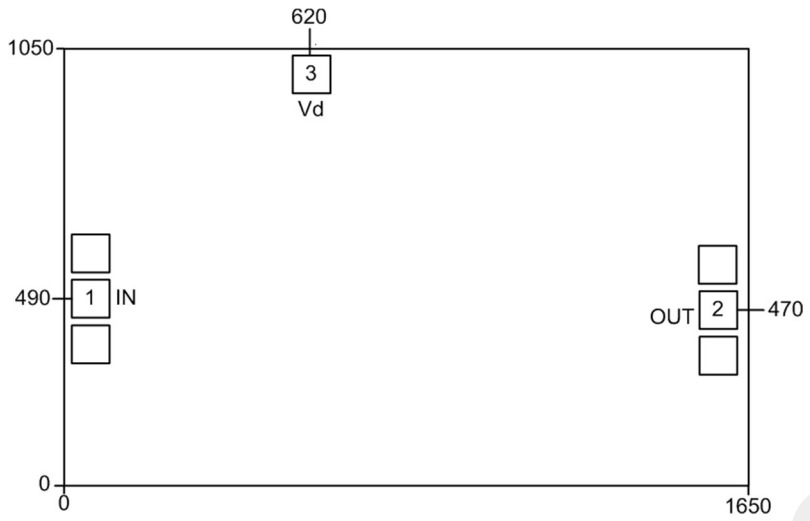


P-1dB vs. Frequency Noise Figure vs. Frequency





Outline drawing [2]

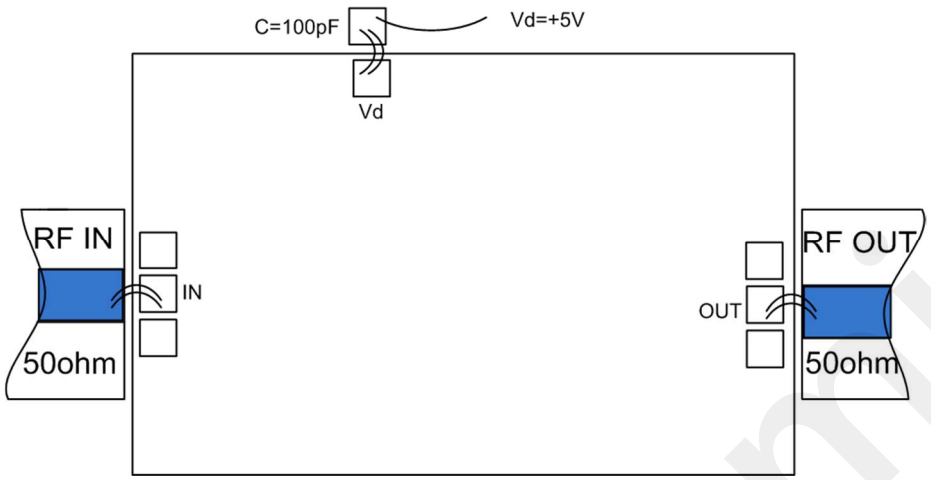


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	RF signal input, no need for DC blocking capacitors	
2	RF OUT	RF signal output without DC blocking capacitors	
3	Vd	Amplifier drain bias requires an external 100pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Notes:

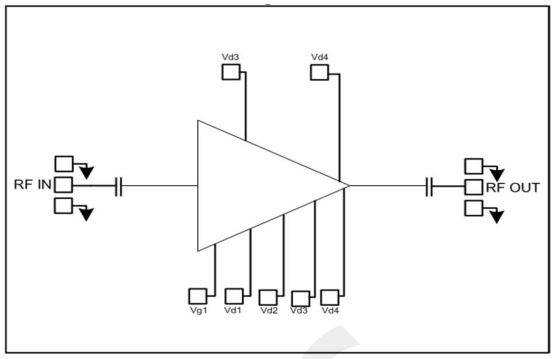
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Rack Mounting Recommendations: Bare Die mounting can use AuSn solder eutectic sintering or conductive adhesive bonding processes. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Do not rub for more than 3 seconds.
7. Bonding process: The amount of conductive glue to be dispensed should be as small as possible. After the Die is placed in the installation position, the conductive adhesive can be easily seen around it. For the curing conditions, please follow the information provided by the conductive adhesive manufacturer.
8. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 15-17GHz

Features:

Frequency Range: 15-17GHz
Small Signal Gain: 37dB
Power Gain: 34dB
P-1dB: 34dBm
Psat: 35dBm
PAE: 38% to 40%
Power supply: 7V/660mA
50Ohm input/output
100% on-Die test
Die size: 3.4 x 1.6 x 0.1mm

Functional block diagram:



General Description:

MYP351715 is a broadband high-gain, high-efficiency, high-power amplifier Die based on the pHEMT process. The frequency range covers 15 to 17 GHz, the small-signal gain is 37dB, the power gain is 34dB, the saturation output power is 35dBm, and the additional efficiency is 38%. 40%. The Die via metallization process ensures good grounding and the backside is metallized for eutectic sintering.

Absolute Max Ratings

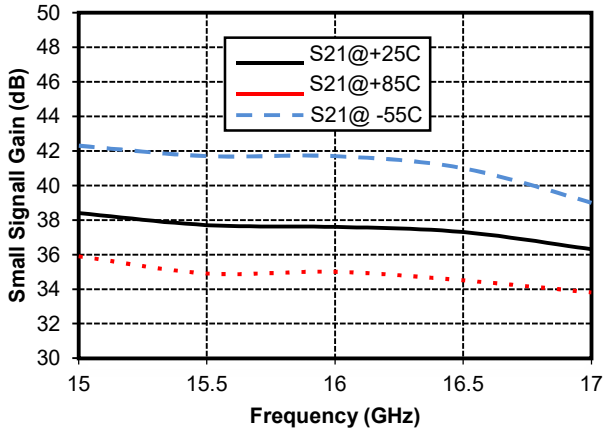
Max drain voltage	+8V
Max gate bias	-5V
Max input power	+10dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

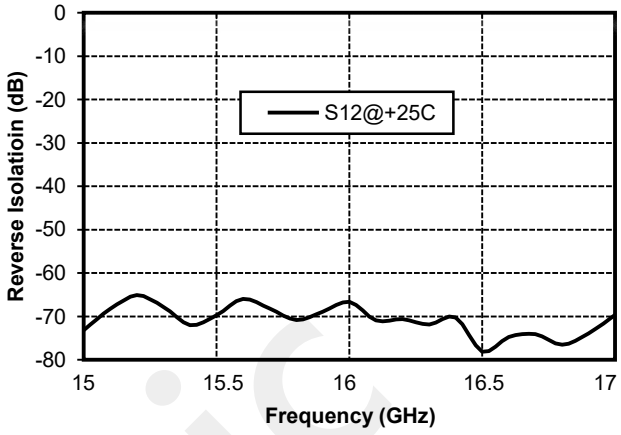
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications (Ta=+25°C, Vd=7V, Ids=660mA)

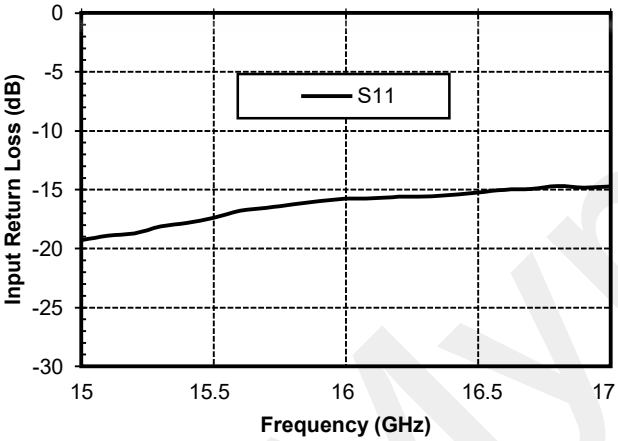
Parameter	Min	Typ.	Max	Unit
Frequency Range		15-17		GHz
Small signal gain	36.5	37	37.5	dB
Gain flatness		±0.5		dB
P-1dB	-	34	34.5	dBm
Psat	-	35	-	dBm
Input return loss	-	15	-	dB
Output return loss	-	13	-	dB
* By tuning Vg terminal voltage -2V~0V, it reaches 660mA. The recommended gate voltage is -0.9V.				

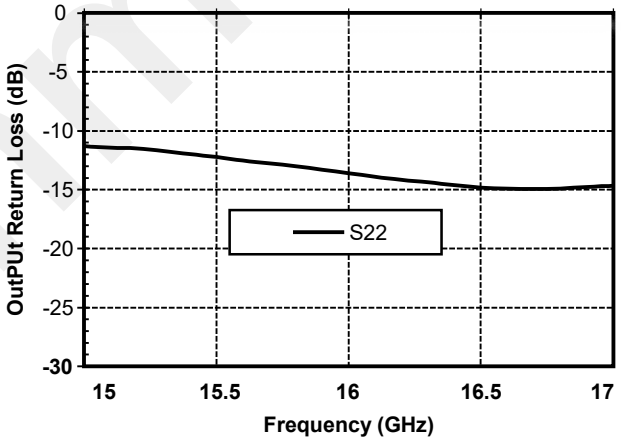
Gain vs. Frequency Reverse Isolation vs. Frequency



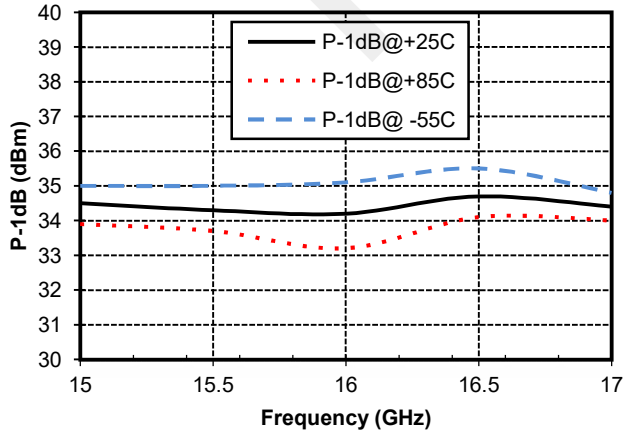


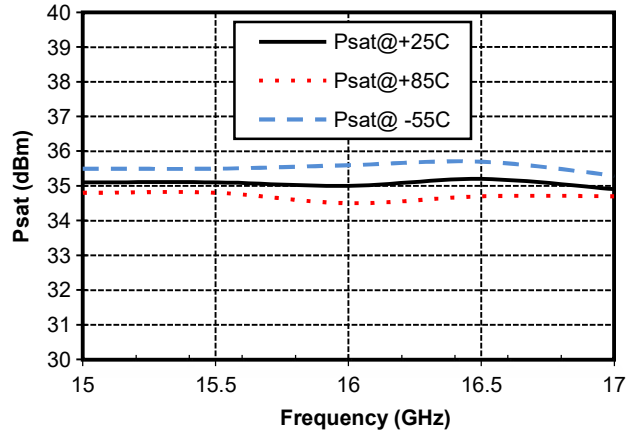
Input Return Loss vs. Frequency Output Return Loss vs. Frequency





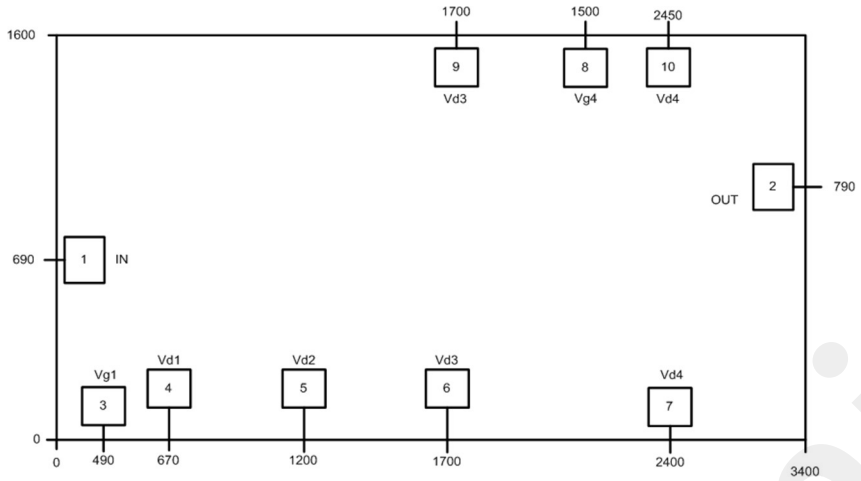
P-1dB vs. Frequency Psat vs. Frequency





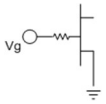
GaAs MMIC Power Amplifier Die, 15-17GHz

Outline Drawing

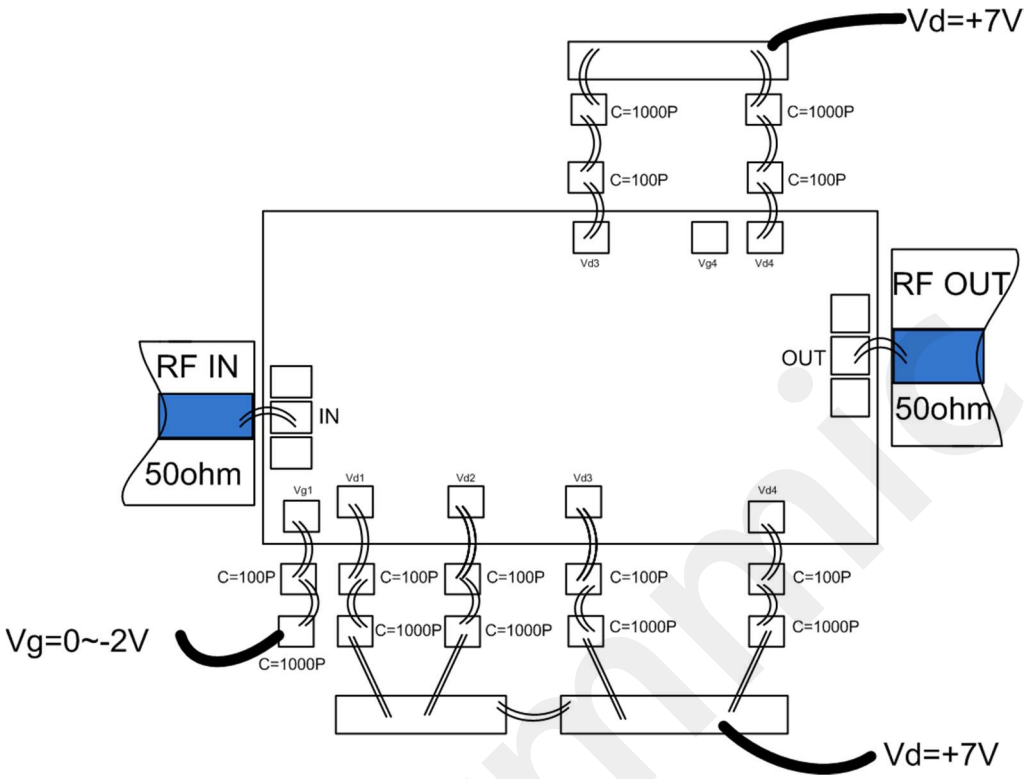


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	50 ohm external circuit for signal input, no need to add straight capacitance	
2	RF OUT	50 ohm external circuit for signal output, no need to add straight capacitance	
4, 5, 6, 7, 9, 10	Vd1~4	Amplifier drain bias requires external 1000pF bypass capacitor	
3, 8	Vg1~2	Amplifier gate bias requires an external 1000pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Notes:

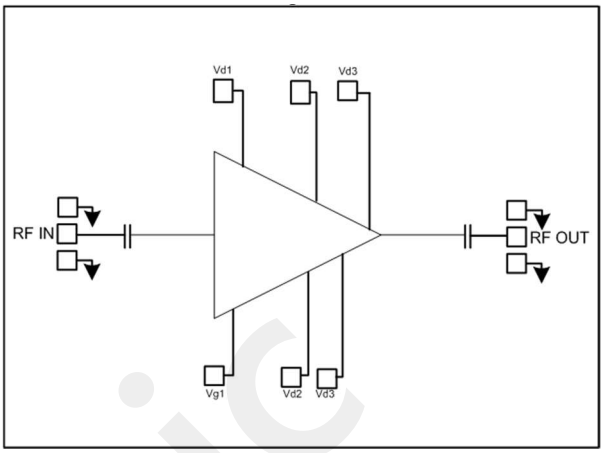
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Rack Mounting Recommendations: The bare Die mounting can use the AuSn solder eutectic sintering process. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 15-17GHz

Features:

Frequency Range: 15-17GHz
Small Signal Gain: 26dB
Power Gain: 23dB
P-1dB: 34dBm
Psat: 35dBm
PAE: 36% to 39%
Power supply: +7V/600mA
50Ohm input/output
100% on-Die test
Die size: 2.8 x 1.6 x 0.1mm

Functional block diagram:



General Description:

MYP351715A is a broadband high-gain, high-efficiency, high-power amplifier Die based on the pHEMT process. The frequency range covers 15 to 17 GHz, the small-signal gain is 26dB, the power gain is 23dB, the saturation output power is 35dBm, and the additional efficiency is 36%. 39%. The Die via metallization process ensures good grounding and the backside is metallized for eutectic sintering.

Absolute Max Ratings

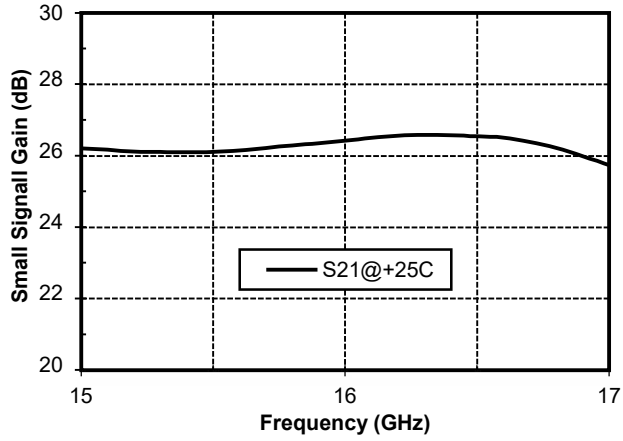
Max drain voltage	+8V
Max gate bias	-5V
Max input power	+10dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

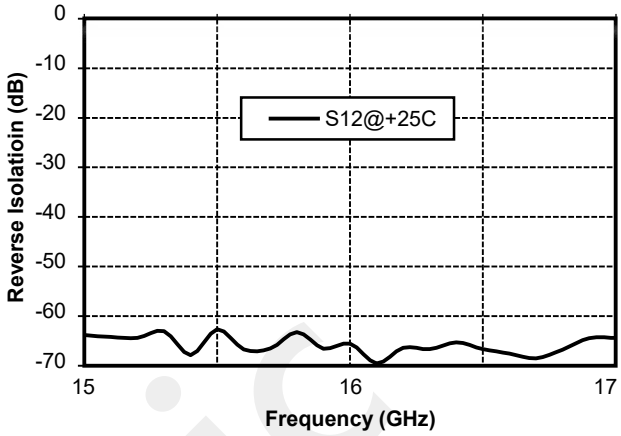
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications (Ta=+25°C, Vd=+7V, Ids=600mA)

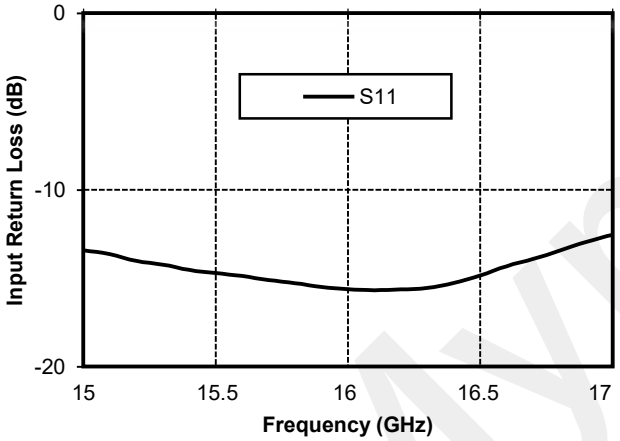
Parameter	Min	Typ.	Max	Unit
Frequency Range		15-17		GHz
Small signal gain	25.5	26	26.5	dB
Gain flatness		±0.5		dB
P-1dB	34	34.5	34.7	dBm
Psat	34.5	35	35	dBm
Input return loss	-	14	-	dB
Output return loss	-	16	-	dB
* By tuning Vg terminal voltage -2V ~ 0V, up to 600mA. The recommended gate voltage is -0.9V.				

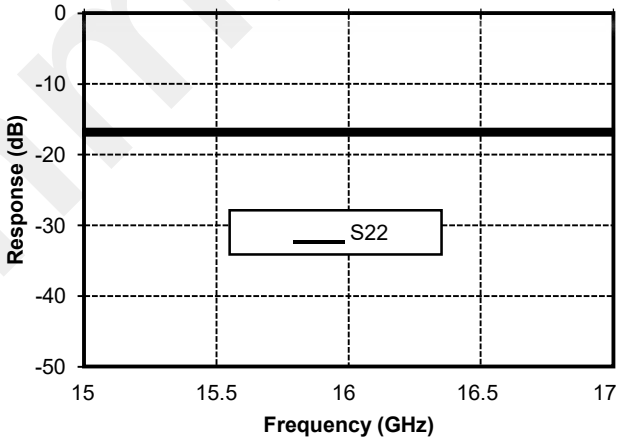
Gain vs. Frequency Reverse Isolation vs. Frequency



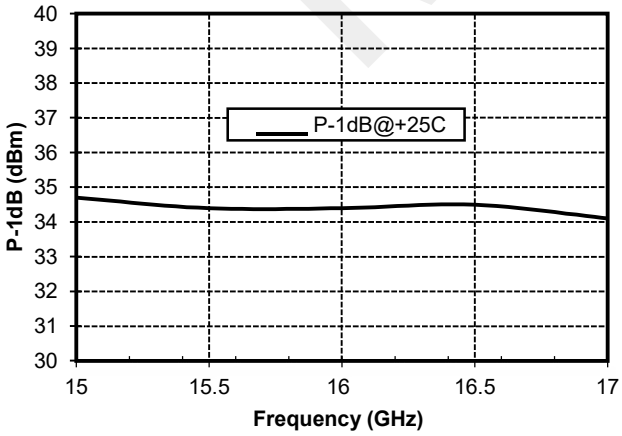


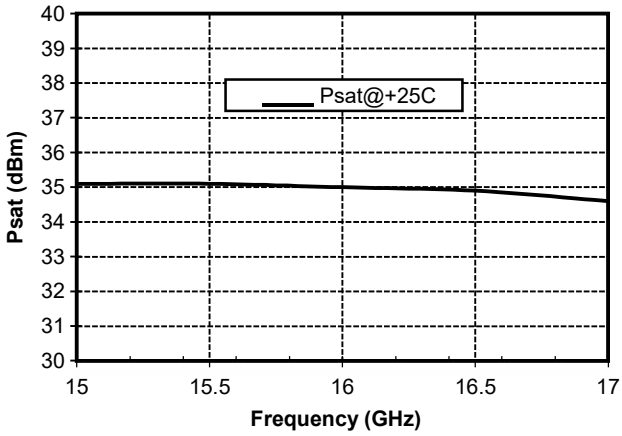
Input Return Loss vs. Frequency Output Return Loss vs. Frequency



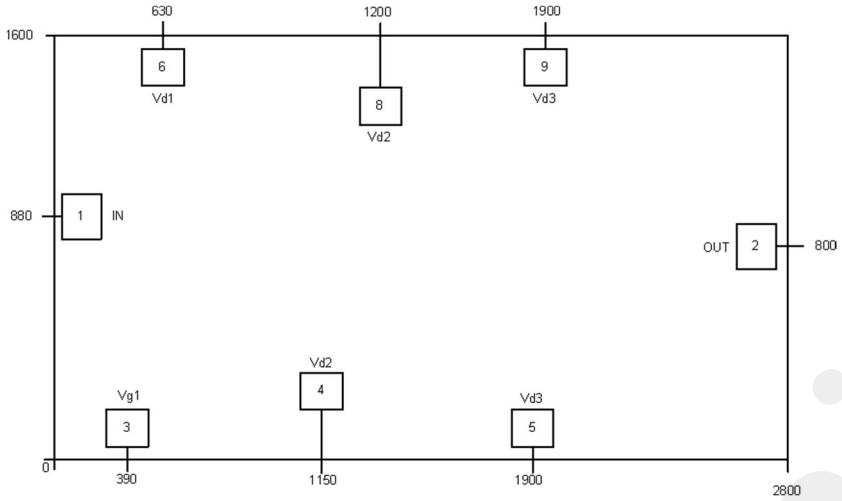


P-1dB vs. Frequency Psat vs. Frequency



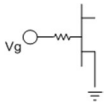


Outline Drawing

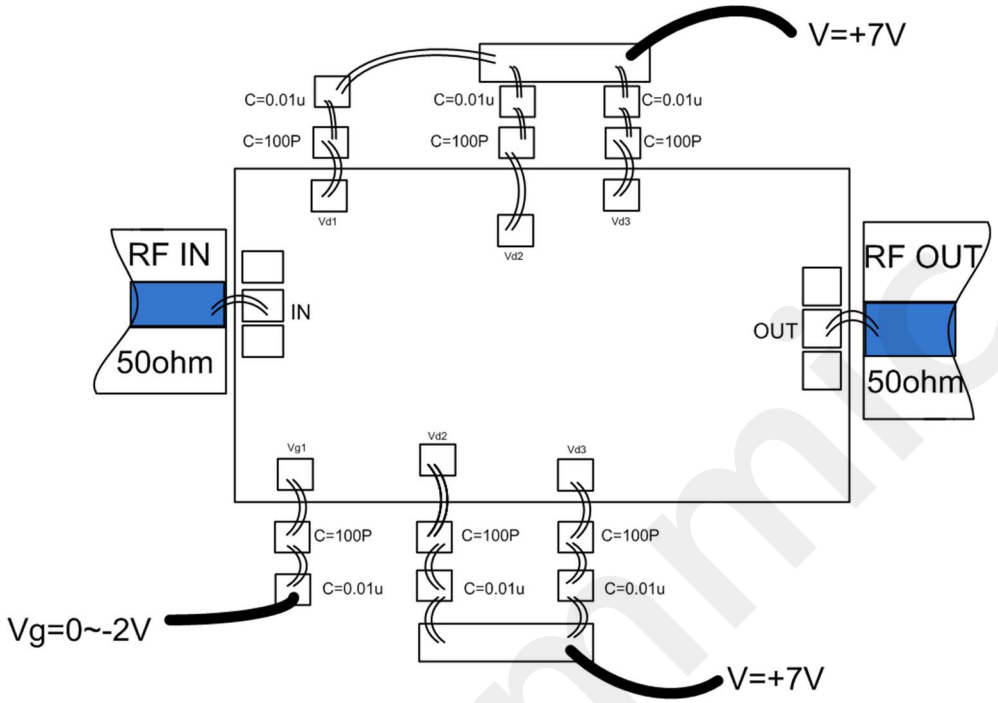


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	50 ohm external circuit for signal input, no need to add straight capacitance	
2	RF OUT	50 ohm external circuit for signal output, no need to add straight capacitance	
4, 5, 6, 8, 9	Vd1~4	Amplifier drain bias requires external 1000pF bypass capacitor	
3	Vg1	Amplifier gate bias requires an external 1000pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



Notes:

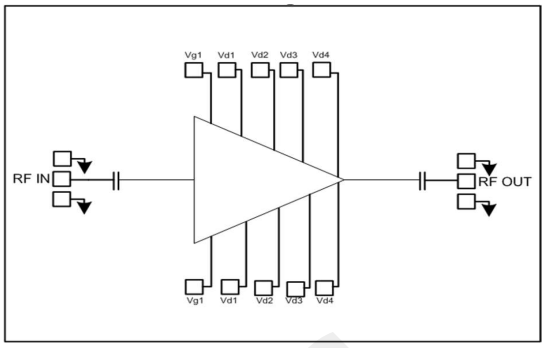
1. The Die needs to be stored in a container with antistatic function and stored in a nitrogen atmosphere.
2. It is prohibited to attempt to wet the surface of the bare Die by wet chemistry.
3. Please strictly comply with ESD protection requirements to avoid electrostatic damage to the bare Die.
4. Regular operation: Use a precision pointed tweezers to pick up the bare Die. Avoid tools or fingers touching the surface of the Die during operation.
5. Rack Mounting Recommendations: The bare Die mounting can use the AuSn solder eutectic sintering process. The mounting surface must be clean and flat.
6. Sintering process: It is recommended to use AuSn solder pads with a gold/tin ratio of 80/20. The working surface temperature reached 255°C and the tool (vacuum chuck) temperature reached 265°C. When the high-temperature gas mixture (nitrogen-hydrogen ratio is 90/10) is blown onto the Die, the temperature at the tip of the tool is raised to 290°C. Do not leave the Die at temperatures above 320°C for more than 20 seconds. Rubbing time should not exceed 3 seconds.
7. Bonding recommendations: Use Φ0.025mm (1mil) gold wire for either spherical or wedge-type bonding. Thermosonic bonding temperature 150°C. Ball bond boring tool pressure 40~50gf, wedge-shaped guillotine pressure 18~22gf. Use as little ultrasonic energy as possible. Bonding starts at the pressure point on the Die and ends at the package (or substrate).

GaAs MMIC Power Amplifier Die, 15-17GHz

Features:

Frequency Range: 15-17GHz
Small Signal Gain: 35dB
Power Gain: 32dB
Psat: 37dBm
PAE: 32%
Power supply: +7V/1400mA
50Ohm input/output
100% on-Die test
Die size: 3.65 x 3.3 x 0.1mm

Functional block diagram:



General Description:

MYP371715 is a broadband high-gain, high-efficiency, high-power amplifier Die based on the pHEMT process. The frequency range covers 15 to 17 GHz, the small-signal gain is 35dB, the power gain is 32dB, the saturation output power is 37dBm, and the additional efficiency is 32%. The Die via metallization process ensures good grounding and the backside is metallized for eutectic sintering.

Absolute Max Ratings

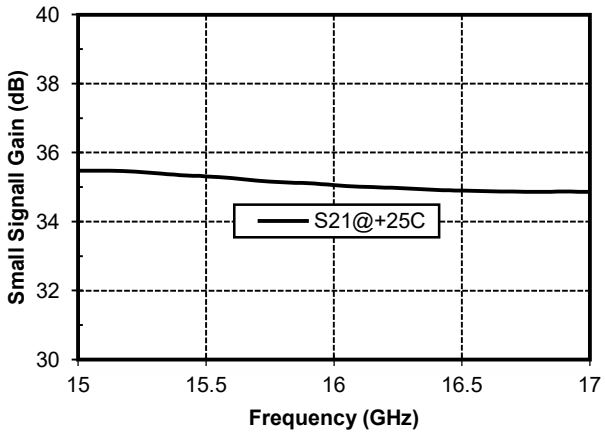
Max drain voltage	+8V
Max gate bias	-5V
Max input power	+10dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

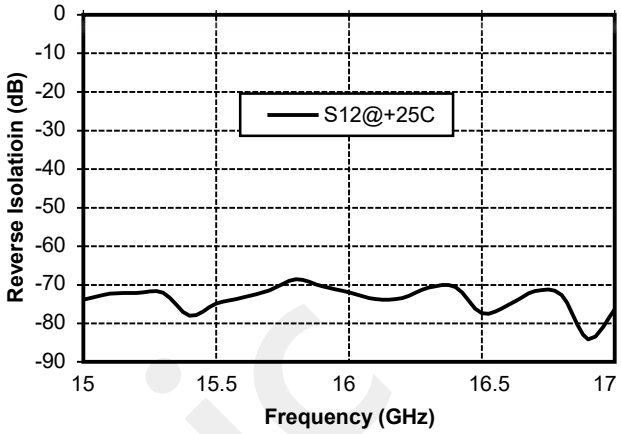
[1] Exceeding any of the above Max limits may cause permanent damage.

Electrical Specifications (Ta=+25°C, Vd=+7V, Ids=1400mA)

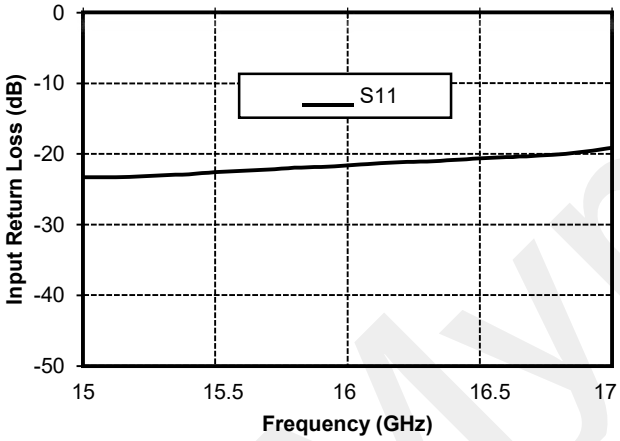
Parameter	Min	Typ.	Max	Unit
Frequency Range		15-17		GHz
Small signal gain	34.5	35	35.5	dB
Gain flatness		±0.5		dB
P-1dB	36.5	37	37.5	dBm
Psat	36.8	37	37.5	dBm
Input return loss	-	28	-	dB
Output return loss	-	32	-	dB
*Through tuning Vg terminal voltage -2V~0V, reach 1400mA. The recommended gate voltage is -0.9V.				

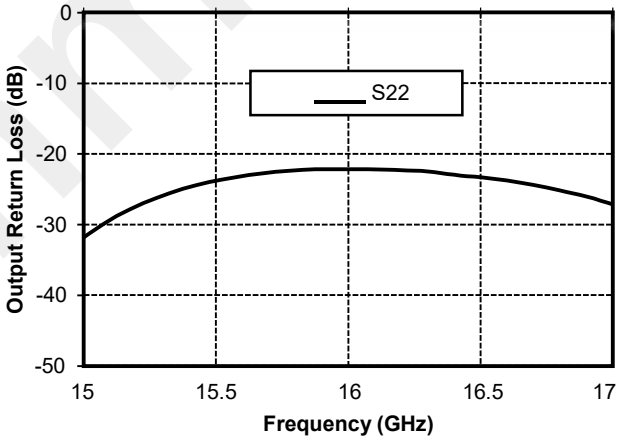
Gain vs. Frequency Reverse Isolation vs. Frequency



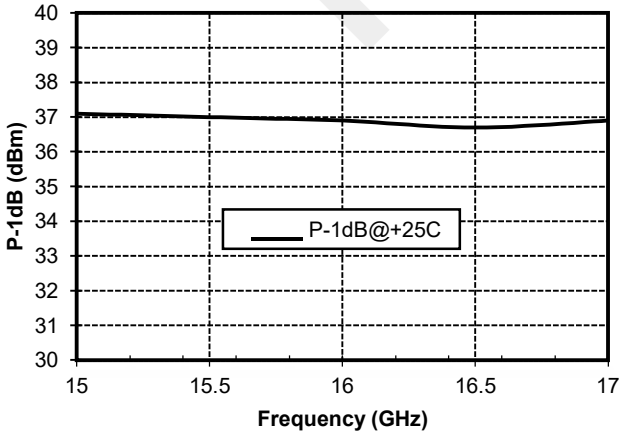


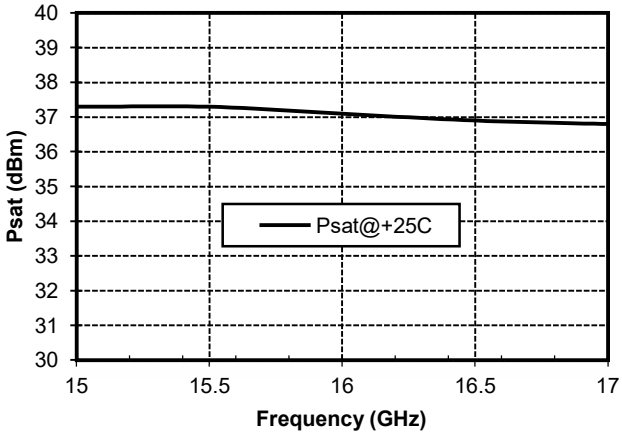
Input Return Loss vs. Frequency Output Return Loss vs. Frequency



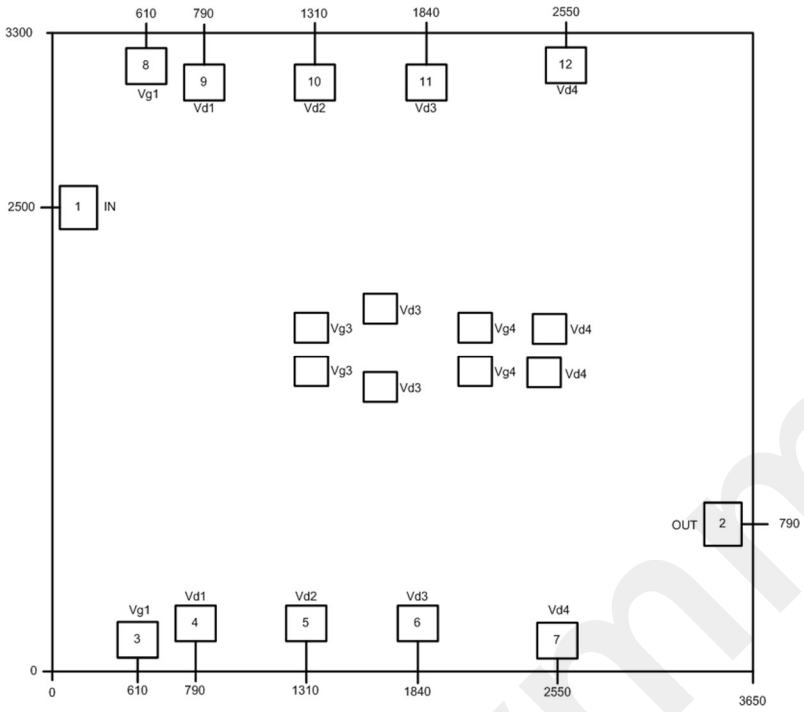


P-1dB vs. Frequency Psat vs. Frequency



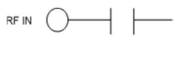
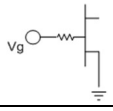


Outline Drawing

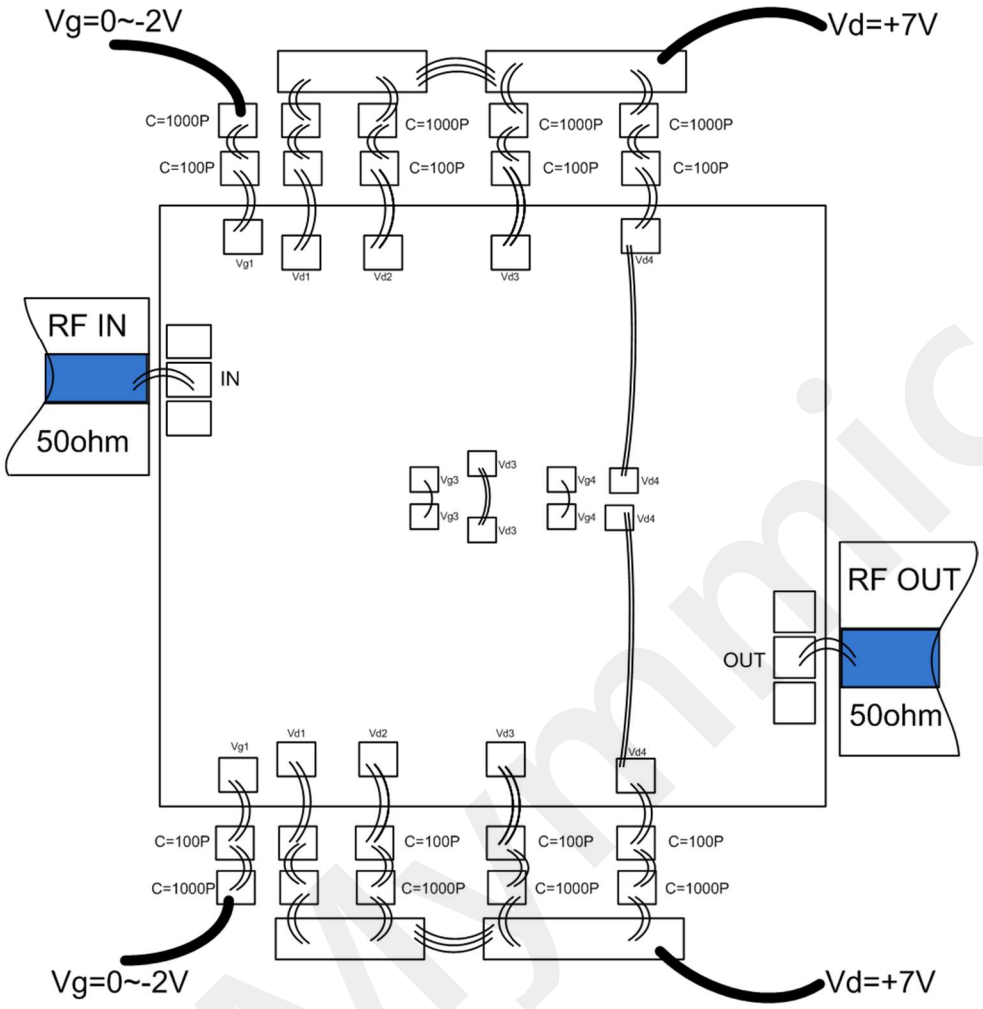


[2] The figures are all micrometers

Pad Descriptions

Pad Number	Function	Description	Interface Schematic
1	RF IN	50 ohm external circuit for signal input, no need to add straight capacitance	
2	RF OUT	50 ohm external circuit for signal output, no need to add straight capacitance	
4, 5, 6, 7, 9, 10, 11, 12	Vd1~4	Amplifier drain bias requires external 1000pF bypass capacitor	
3, 8	Vg1~2	Amplifier gate bias requires an external 1000pF bypass capacitor	
Die bottom	GND	The bottom of the Die must be in good contact with RF and DC ground	

Recommended assembly drawing



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