



GaAs MMIC VCO

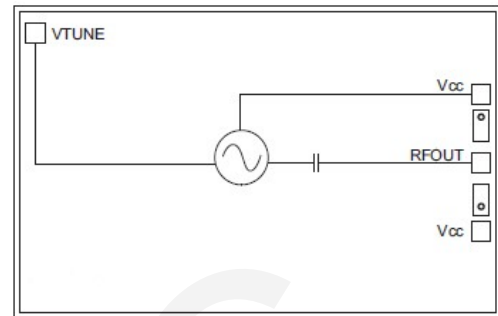
GaAs Broad-band Monolithic VCO

Part Number	Frequency (GHz)	Phase Noise @ 100k(dBc/Hz)	Output Power (dBm)	Tune Voltage (V)	Working Voltage (V)	Current (mA)	2th Harmonic (dBc)	Package	Page
MYO0205	2.5-5	-105	14	0~20V	5	60	-15	DIE/QFN	2
MYO0307	3.5-7	-101	15	0~20V	5	70	-15	DIE/QFN	7
MYO0408	4-8	-98	13	0~20V	5	50	-15	DIE/QFN	12
MYO0510	5-10	-96	8	0~20V	5	50	-15	DIE/QFN	17
MYO0714	7-14	-94	9	0~20V	5	45	-15	DIE/QFN	22
MYO0812	8-12.5	-94	9	0~20V	5	45	-15	DIE/QFN	27
MYO0918	9-18	-90	3	0~20V	5	60	-12	DIE/QFN	32
MYO1115	11-15	-88	9	0~20V	5	65	-15	DIE/QFN	38
MYO1218	12-18	-90	3	0~20V	5	65	-12	DIE/QFN	43
MYO1020	10-20	-90	3	0~20V	5	60	-12	DIE/QFN	48
MYO1721	17-21	-86	2	0~20V	5	50	-15	DIE/QFN	54
MYO1824	18-24	-81	1	0~20V	5	50	-15	DIE/QFN	59
MYO1926	19-26	-88	1	0~20V	5	50	-15	DIE/QFN	64

GaAs MMIC VCO chip, 2.5-5GHz

Features:

- Frequency range: 2.5GHz ~ 5GHz
- Single sideband phase noise: -105dBc / Hz @ 100KHz
- Output power: 14dBm
- Power supply: + 5V / 60mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.8 x 1.9 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-0205 is a broadband voltage-controlled oscillator chip, the frequency range covers 2.5GHz ~ 5GHz, single sideband phase noise -105dBc / Hz @ 100KHz, output power + 14dBm. The MYO-0205 operates on a single + 5V supply. The MYO-0205 is available in DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	25 V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

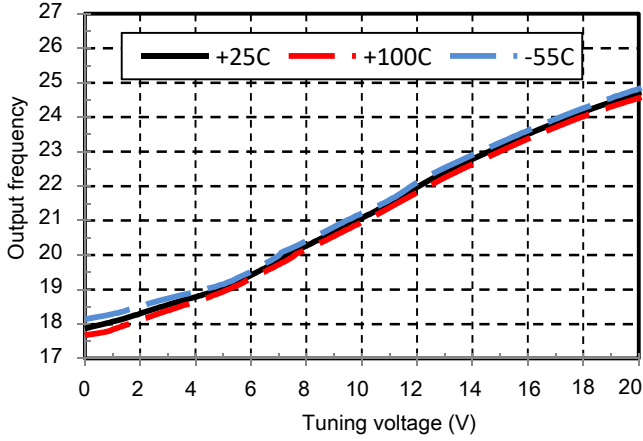
【1】 Exceeding any one of the above limits may result in permanent damage.

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

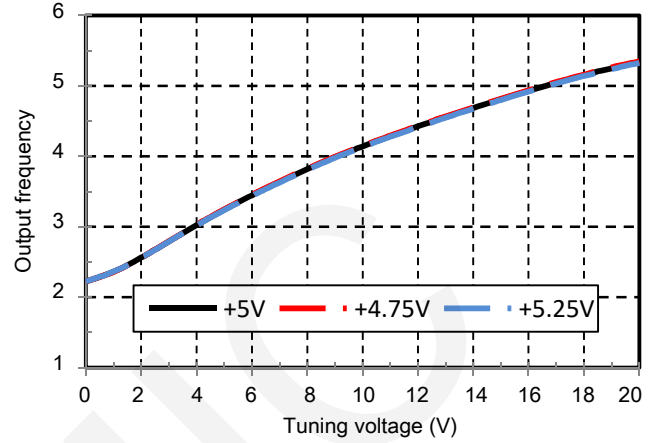
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	2.5-5			GHz
Output Power		14		dBm
Phase noise @ 100kHz		-105		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		60		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC VCO chip, 2.5-5GHz

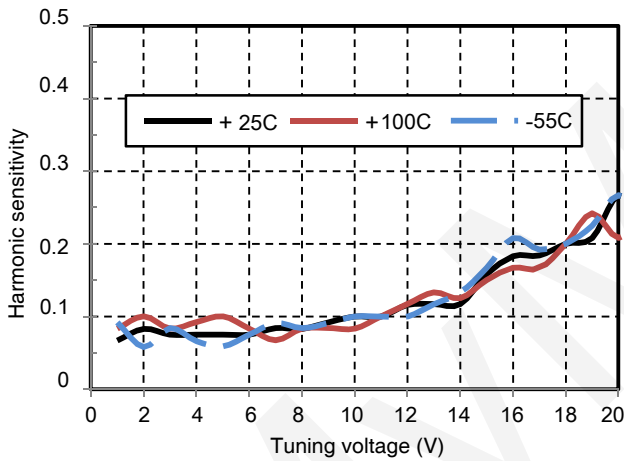
Tuning Voltage vs. Frequency $V_{cc} = +5V$



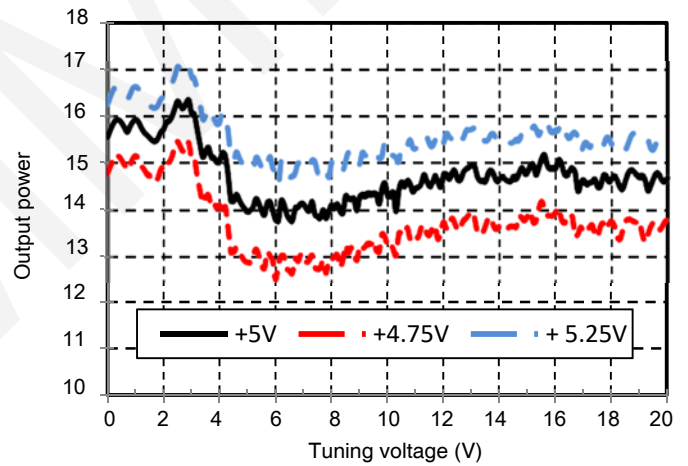
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



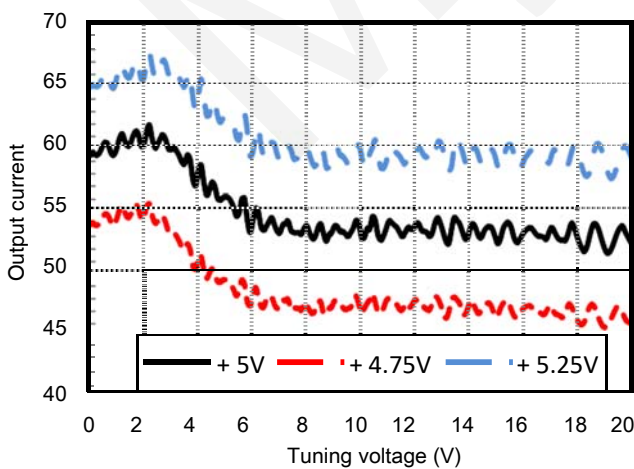
Tuning Voltage vs. Temperature $V_{cc} = +5V$



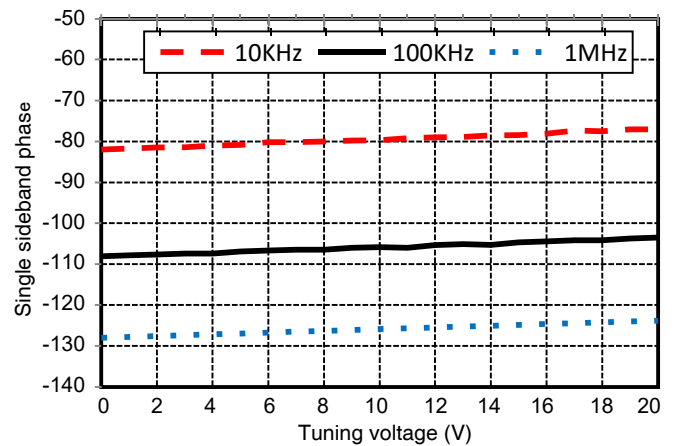
Output Power vs. Tuning Voltage



Output current vs. voltage

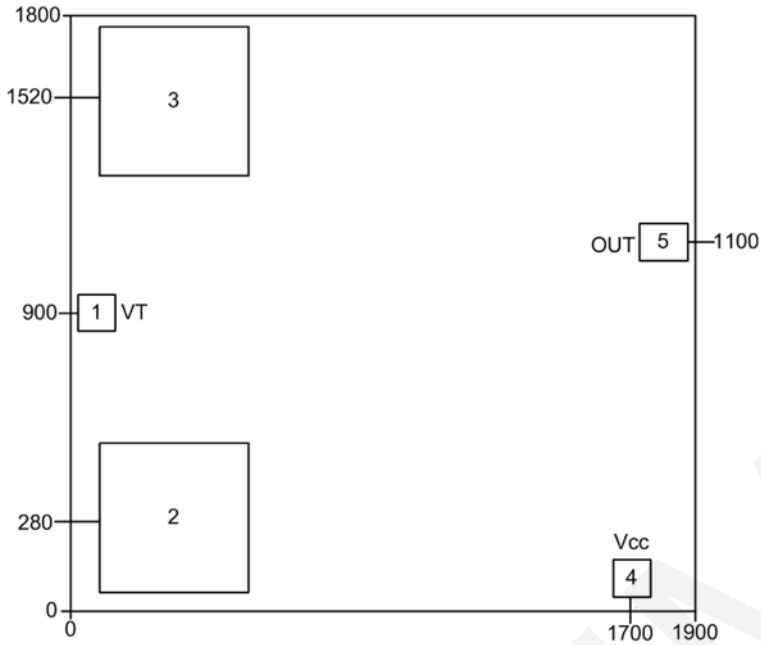


Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}C$



GaAs MMIC VCO chip, 2.5-5GHz

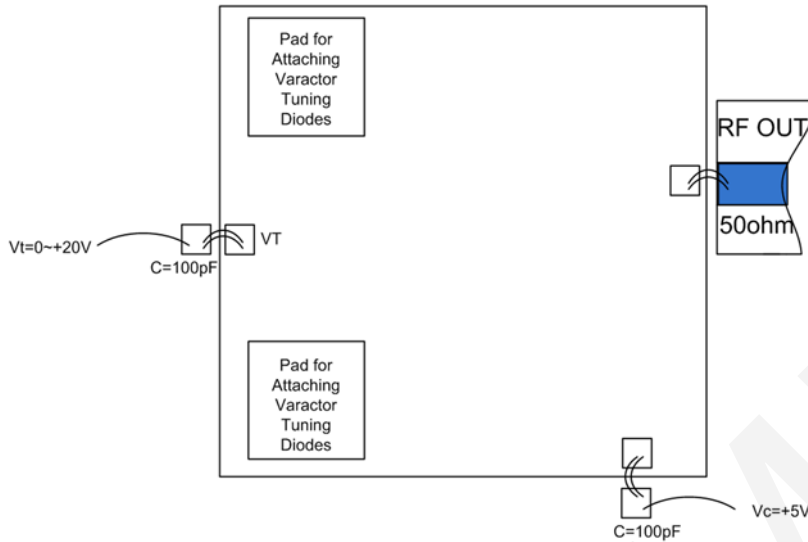
Outline drawing



【2】 The figures are in microns

Pad description(DIE)

Pad number	Functional symbols	Functional description
1	VT	Voltage tuning port
2,3	-	Varactor diodes are bonded
4	Vcc	Voltage supply port
5	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC VCO chip, 2.5-5GHz
Recommended assembly drawing

Notes

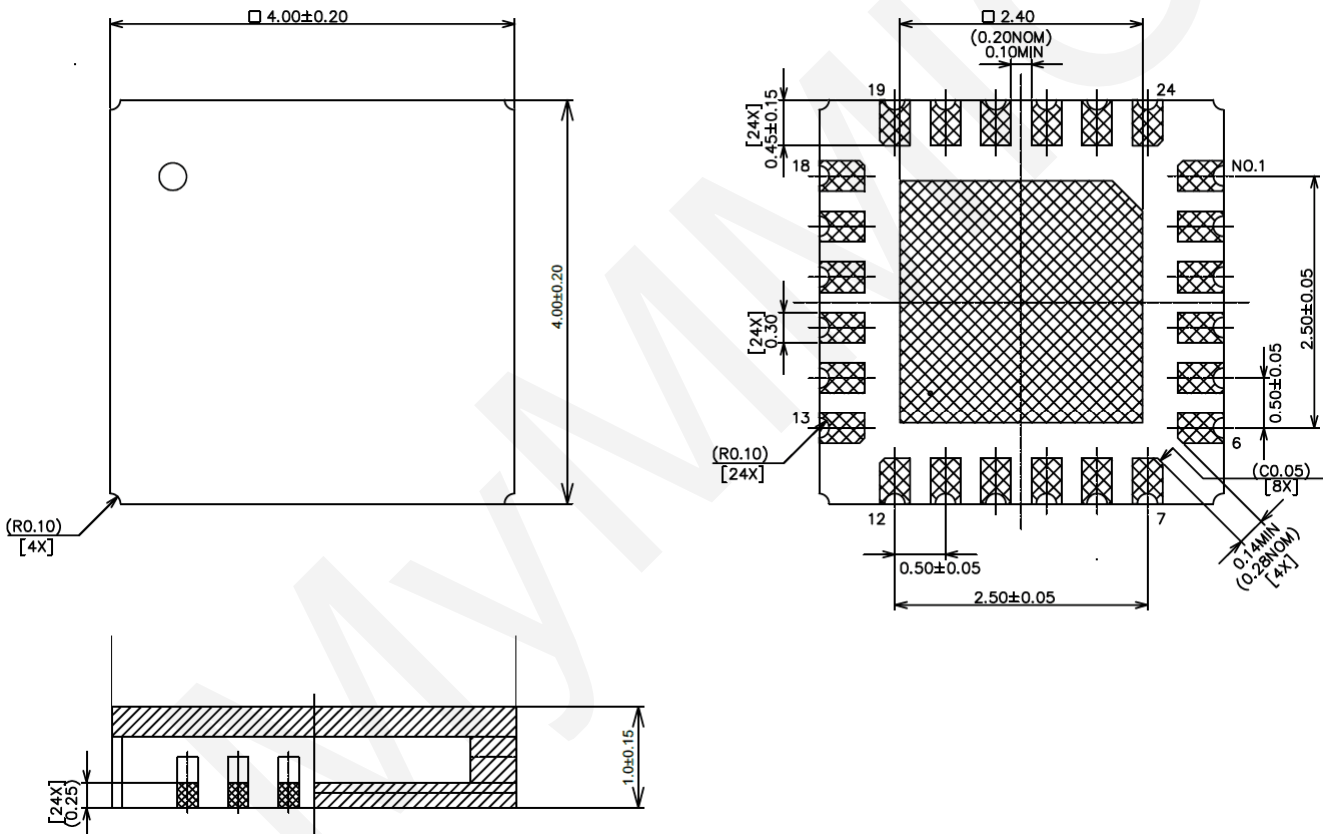
- The chips should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 °C. Do not allow the chip to exceed 20 seconds at temperatures above 320 °C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC VCO chip, 2.5-5GHz

Pin Definition (QFN)

Pin number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

Outline drawing(QFN)



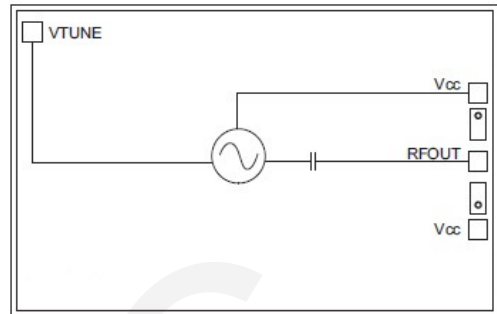
Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than 1.5um.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 3.5-7GHz

Features:

- Frequency range: 3.5GHz ~ 7GHz
- Single sideband phase noise: -101dBc / Hz@100KHz
- Output power: 15dBm
- Power supply: + 5V / 70mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.8 x 1.9 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-0307 is a broadband voltage-controlled oscillator chip, covering a frequency range of 3.5GHz ~ 7GHz, single side-band phase noise -101dBc / Hz @ 100KHz, output power + 15dBm. The MYO-0307 operates on a single + 5V supply. The MYO-0307 is available in DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	25 V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

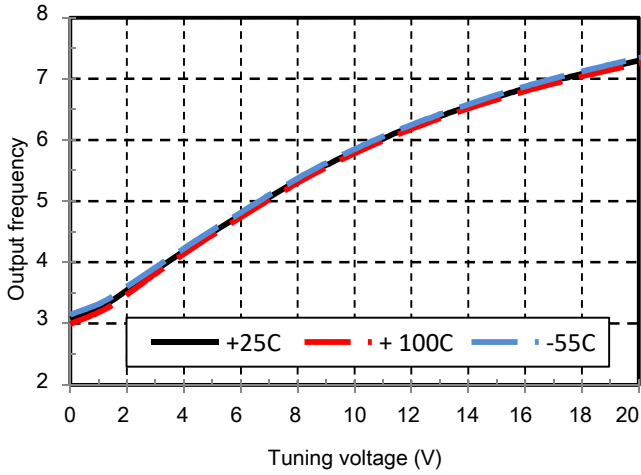
【1】 Exceeding any one of the above limits may result in permanent damage.

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

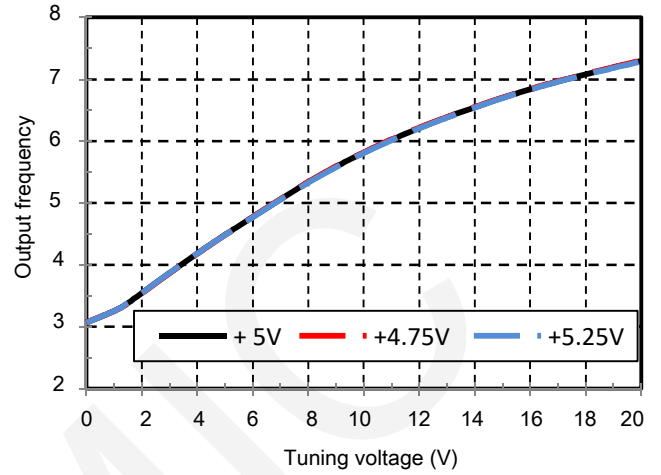
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range		3.5-7		GHz
Output Power		15		dBm
Phase noise @ 100kHz		-101		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		60		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 3.5-7GHz

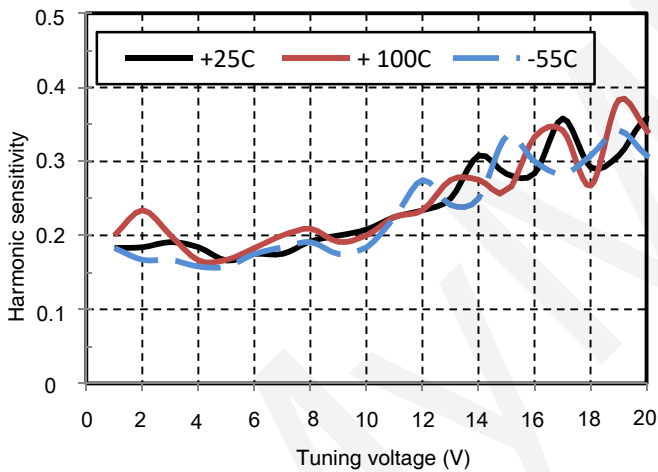
Tuning Voltage vs. Frequency Vcc = + 5V



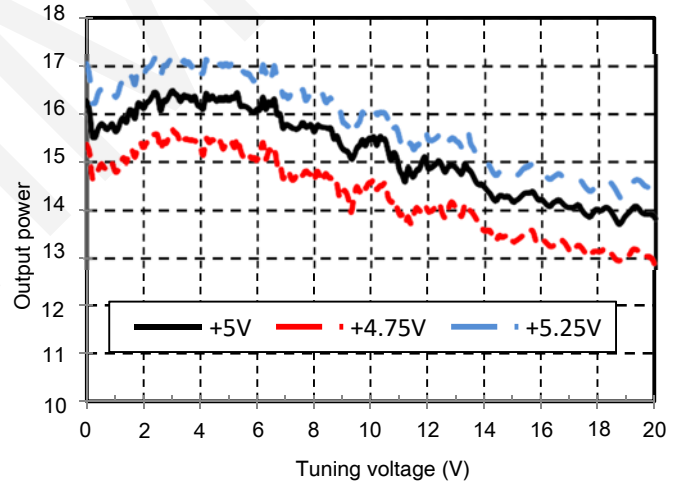
Tuning Voltage vs. Frequency T = + 25°C



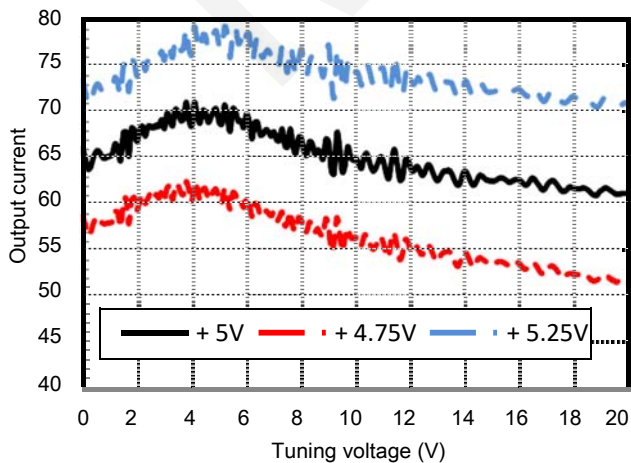
Tuning Voltage vs. Temperature Vcc = + 5V



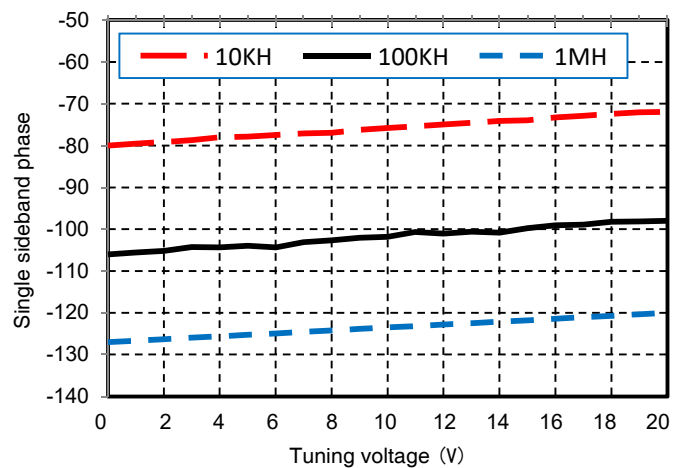
Output Power vs. Tuning Voltage

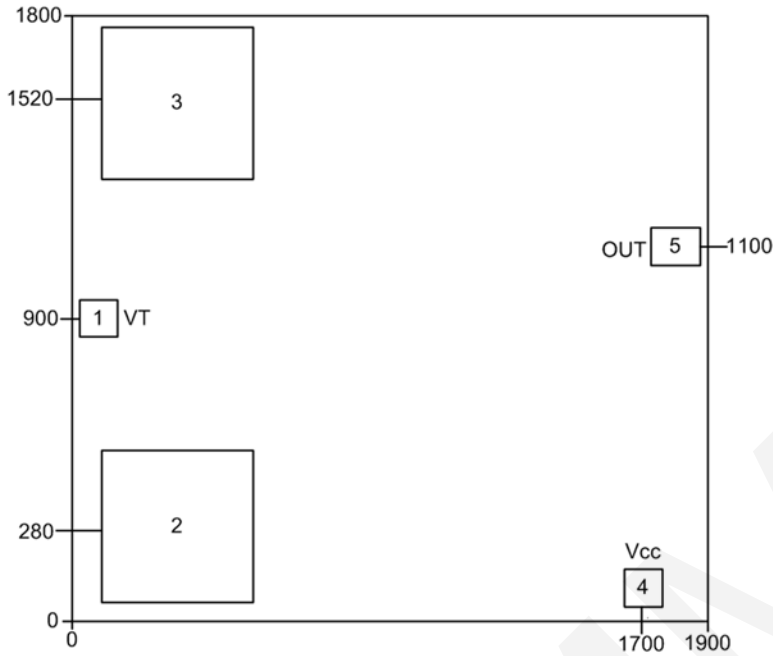


Output current vs. voltage



Tuning voltage vs. single-sideband phase noise T = + 25°C



GaAs MMIC Voltage Controlled Oscillator Chip, 3.5-7GHz
Outline drawing


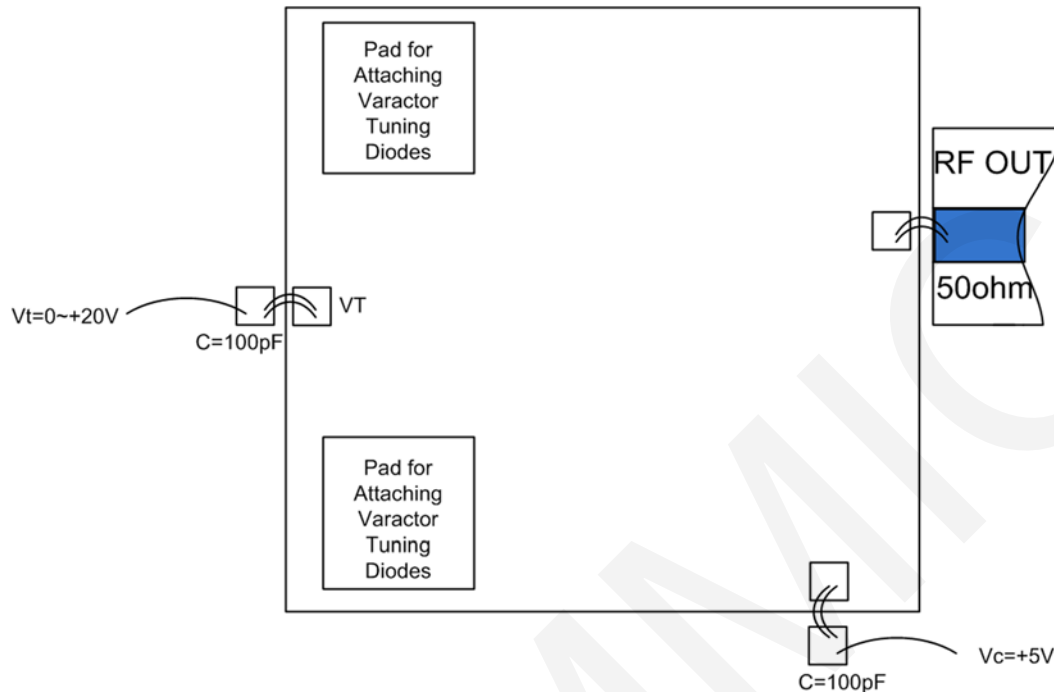
【2】 The figures are in microns

Pad description(DIE)

Pad number	Functional symbols	Functional description
1	VT	Voltage tuning port
2,3	-	Varactor diodes are bonded
4	Vcc	Voltage supply port
5	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 3.5-7GHz

Recommended assembly drawing

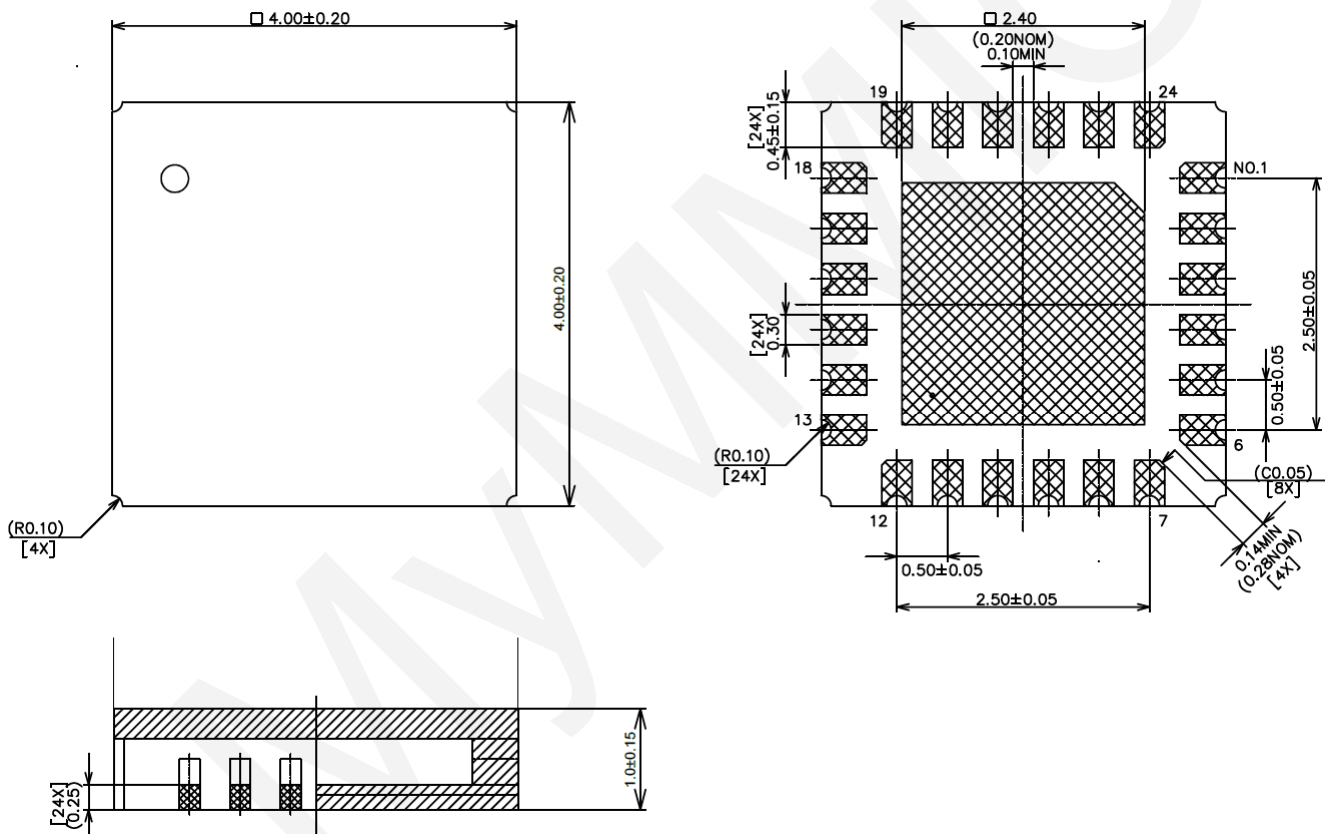


Notes

- The chips should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 °C. Do not allow the chip to exceed 20 seconds at temperatures above 320 °C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 3.5-7GHz
Pin description(QFN)

Pad number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

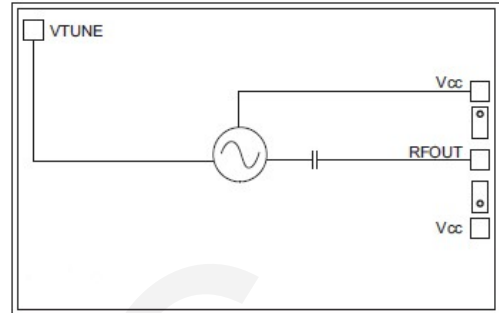
Outline drawing(QFN)

Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than $1.5\mu\text{m}$.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 4-8GHz

Features:

- Frequency range: 4GHz ~ 8GHz
- Single sideband phase noise: -98dBc / Hz @ 100KHz
- Output power: 13dBm
- Power supply: + 5V / 50mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.8 x 1.9 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-0408 is a broadband voltage-controlled oscillator chip, the frequency range covers 4GHz ~ 8GHz, single sideband phase noise -98dBc / Hz @ 100KHz, output power +13 dBm. The MYO-0408 operates on a single + 5V supply. MYO-0408 is available in both DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	-0.5V ~ 25V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

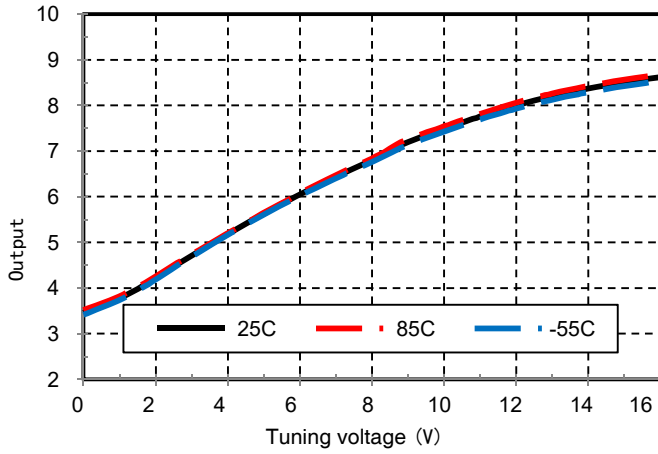
【1】 Exceeding any one of the above limits may result in permanent damage.

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

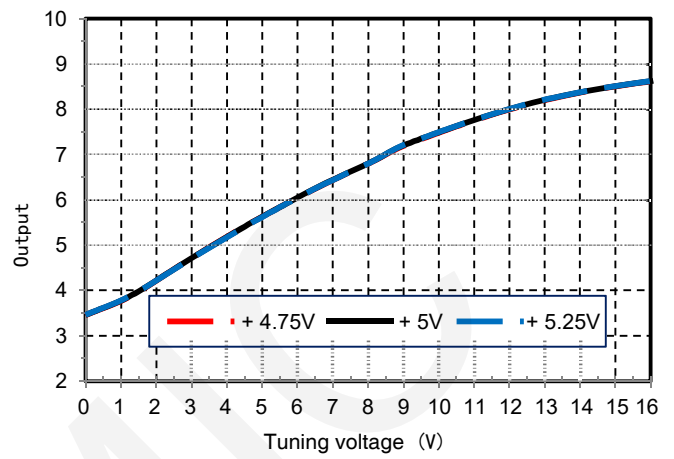
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	4-8			GHz
Output Power		13		dBm
Phase noise @ 100kHz		-98		dBc / Hz
Tuning voltage	1.6	-	12	V
Supply current		50		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 4-8GHz

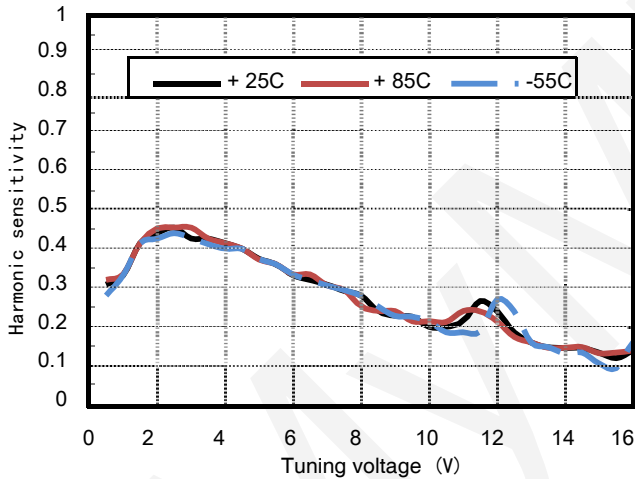
Tuning Voltage vs. Frequency $V_{cc} = +5V$



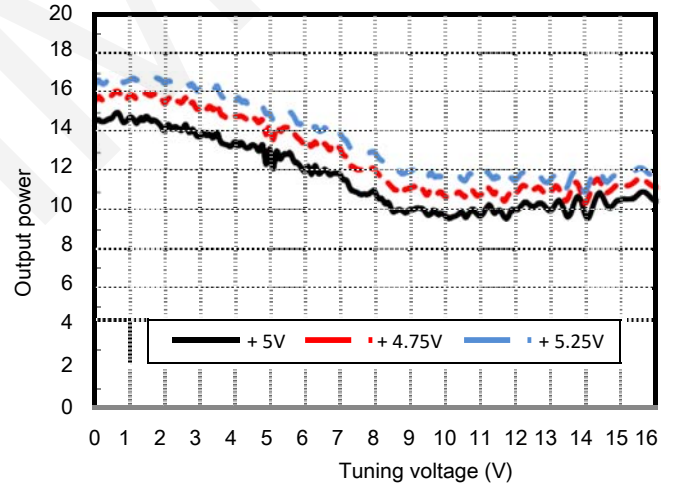
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



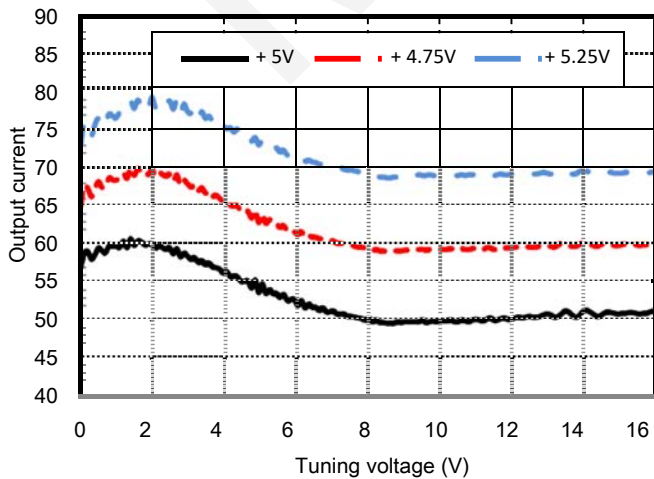
Tuning Voltage vs. Temperature $V_{cc} = +5V$



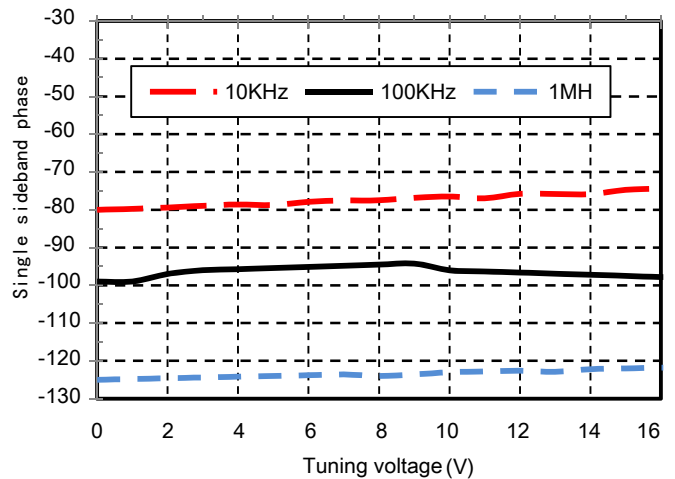
Output Power vs. Tuning Voltage

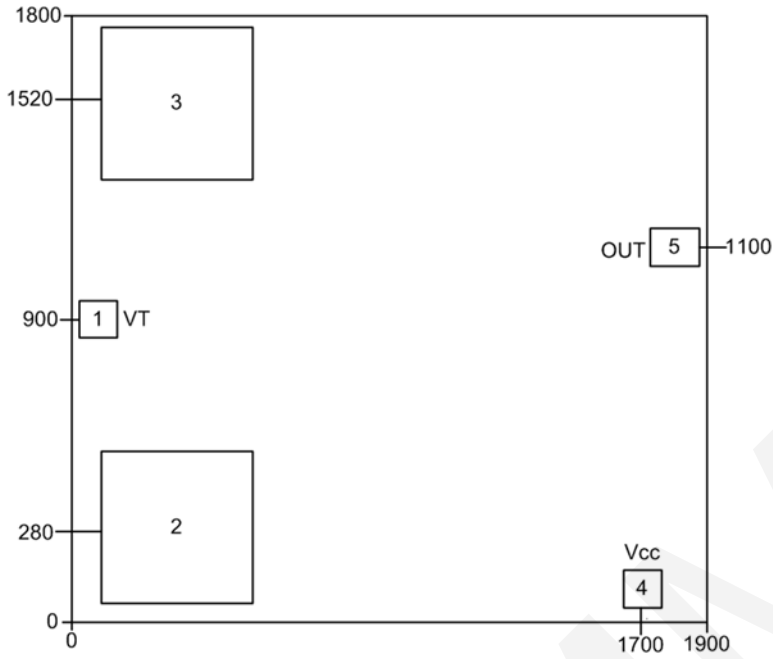


Output current vs. temperature



Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}C$

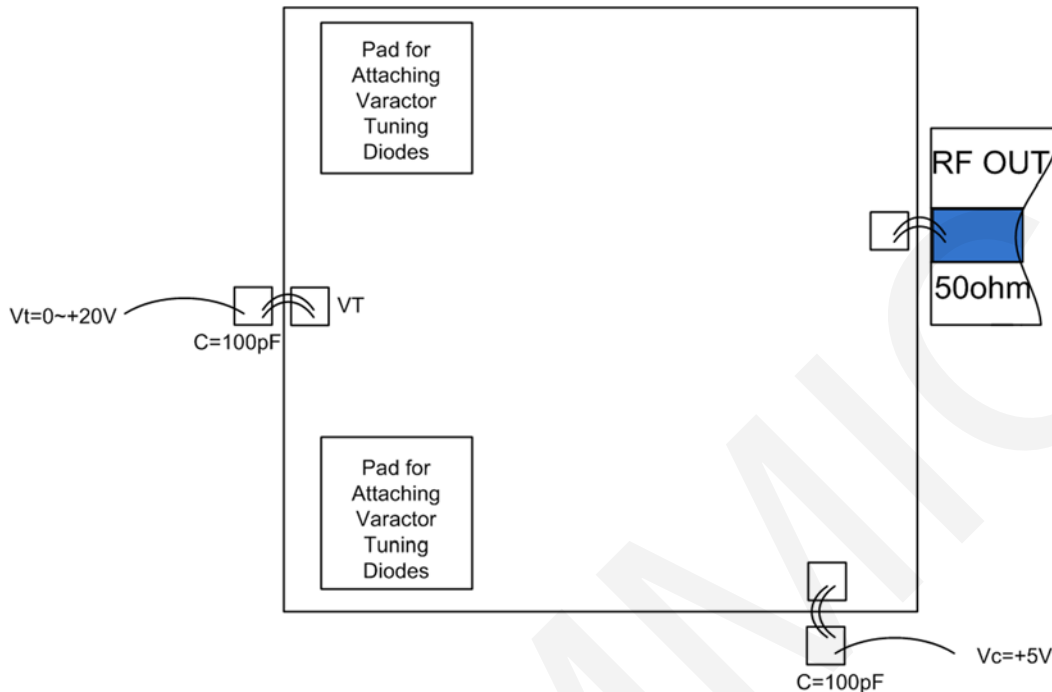


GaAs MMIC Voltage Controlled Oscillator Chip, 4-8GHz
outline drawing


【2】 The figures are in microns

Pad description

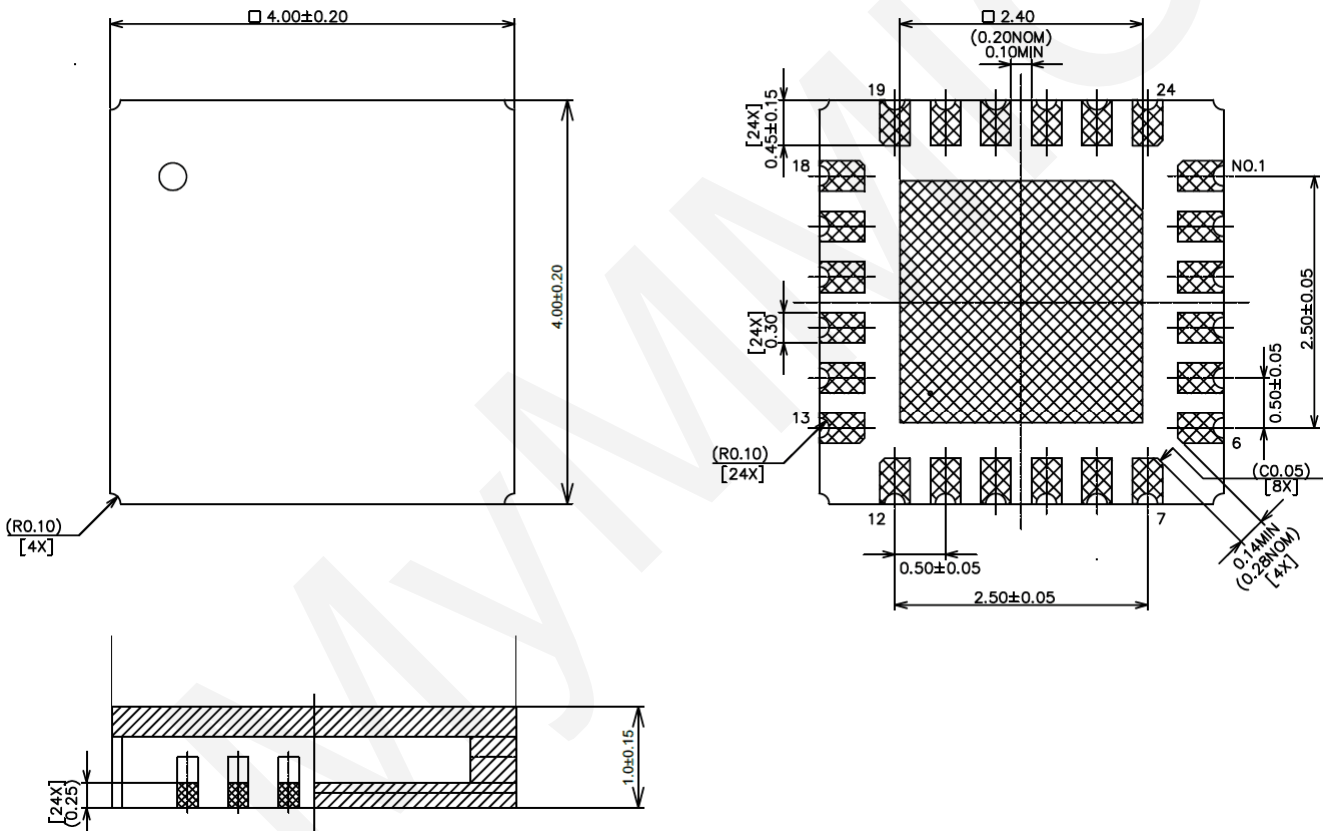
Pad number	Functional symbols	Functional description
1	VT	Voltage tuning port
2,3	-	Varactor diodes are bonded
4	Vcc	Voltage supply port
5	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 4-8GHz
Recommended assembly drawing

Notes

- The chips should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 ° C. Do not allow the chip to exceed 20 seconds at temperatures above 320 ° C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 4-8GHz
Pin description(QFN)

Pad number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

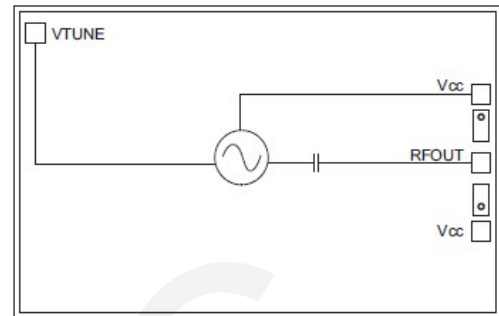
Outline drawing(QFN)

Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than 1.5um.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 5-10GHz

Features:

- Frequency range: 5GHz ~ 10GHz
- Single sideband phase noise: -96dBc / Hz @ 100KHz
- Output power: 8dBm
- Power supply: + 5V / 50mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.8 x 1.9 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO0510 is a broadband voltage-controlled oscillator chip, the frequency range covers 5GHz ~ 10GHz, single sideband phase noise -96dBc / Hz @ 100KHz, output power +8 dBm. The MYO-0510 operates on a single +5V supply. The MYO0510 is available in DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings ¹

Maximum supply voltage	5.5 V.
The maximum ESC voltage	25 V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

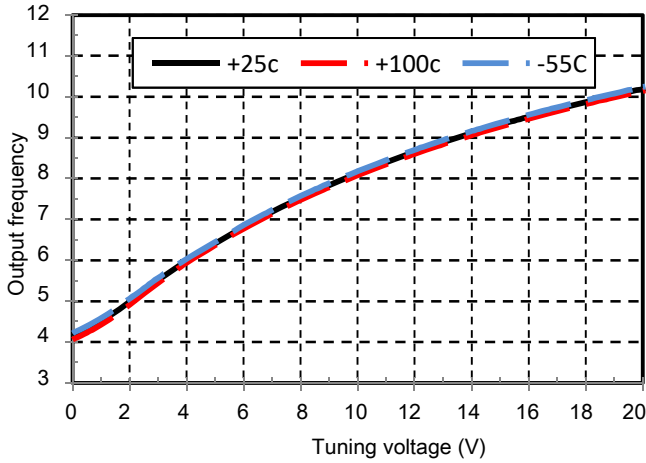
[1] Exceeding any one of the above limits may result in permanent damage.

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

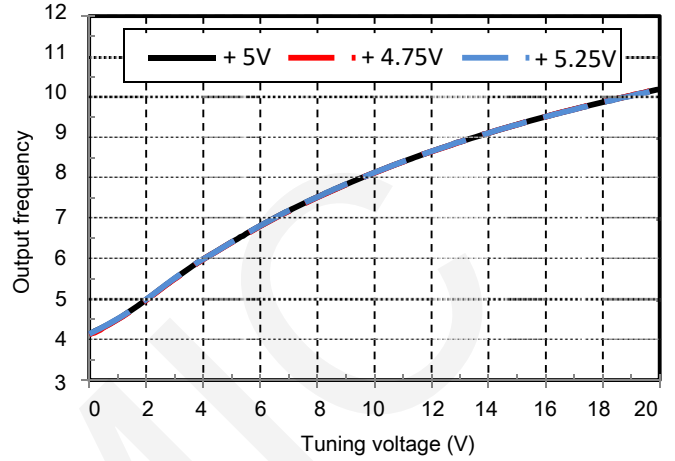
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	5-10			GHz
Output Power		8		dBm
Phase noise @ 100kHz		-96		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		50		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 5-10GHz

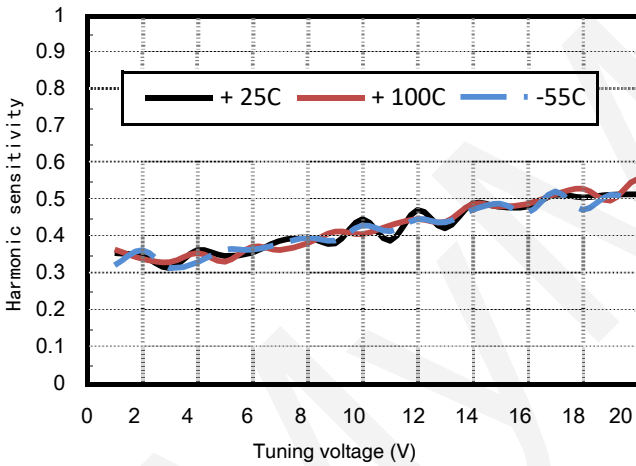
Tuning Voltage vs. Frequency $V_{cc} = +5V$



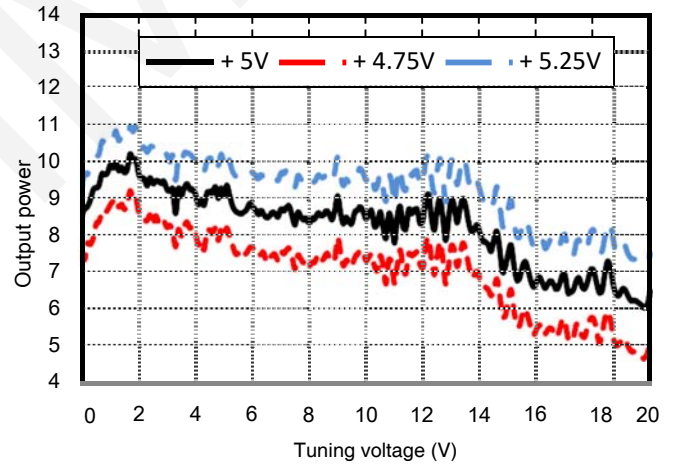
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



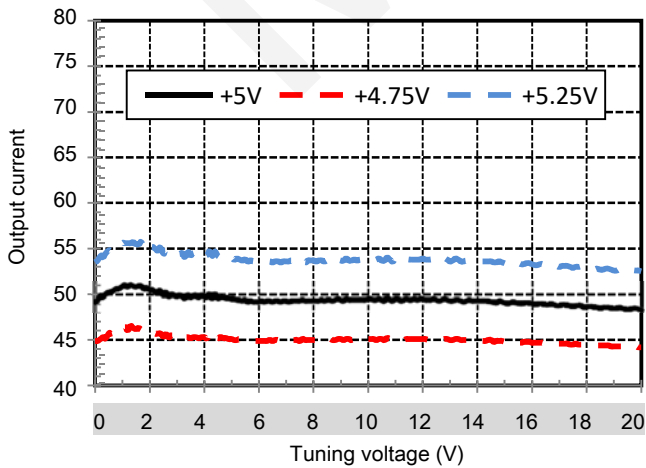
Tuning Voltage vs. Temperature $V_{cc} = +5V$



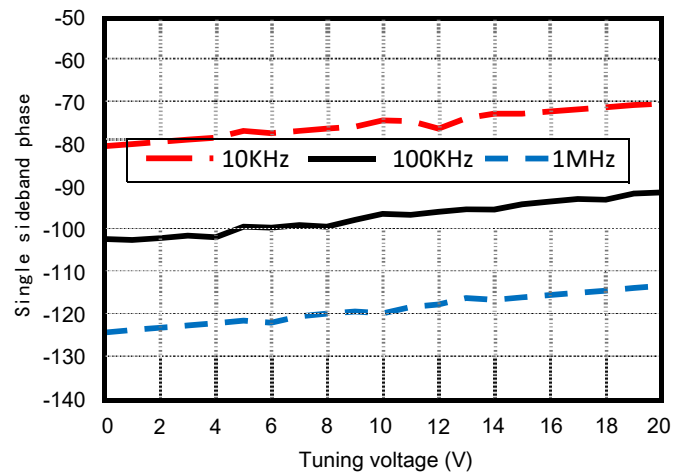
Output Power vs. Tuning Voltage



Output current vs. voltage

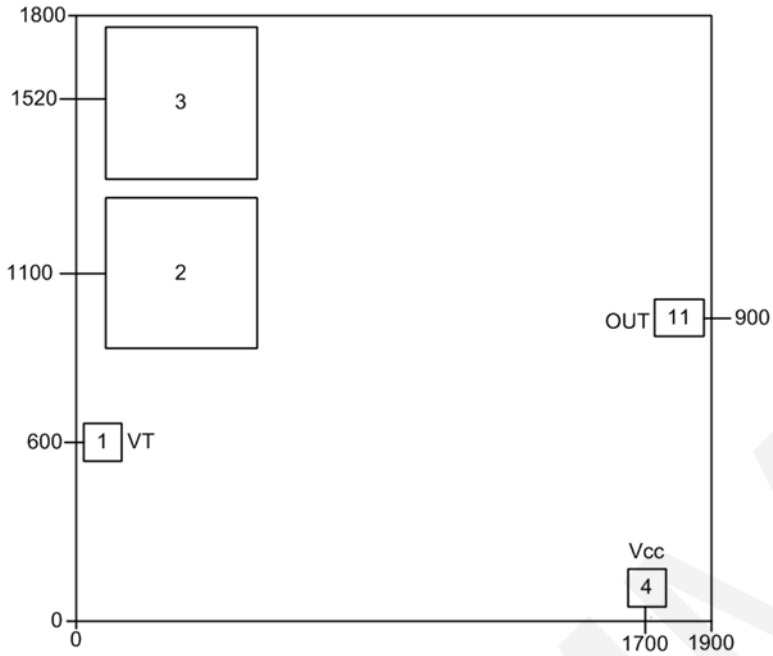


Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}C$



GaAs MMIC Voltage Controlled Oscillator Chip, 5-10GHz

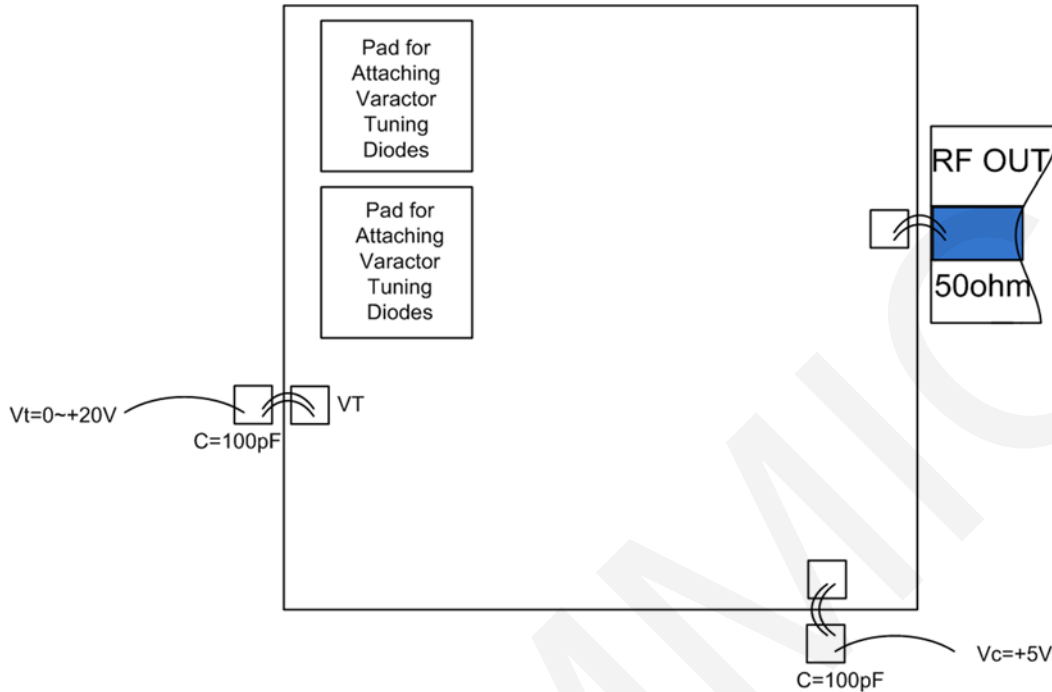
Outline drawing



【2】 The figures are in microns

Pad description(DIE)

Pad number	Functional symbols	Functional description
1	VT	Voltage tuning port
2,3	-	Varactor diodes are bonded
4	Vcc	Voltage supply port
5	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 5-10GHz
Recommended assembly drawing

Notes

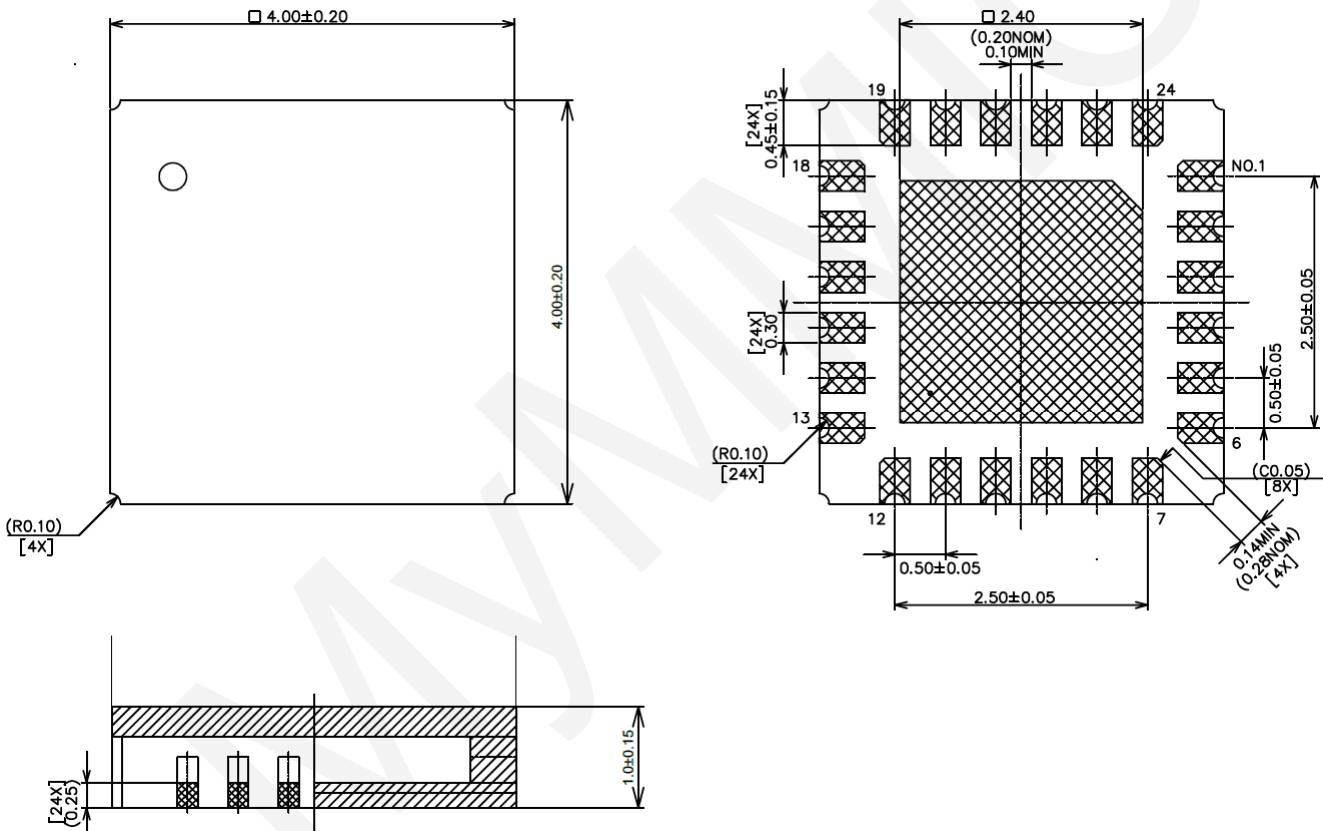
- The Die should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 ° C. Do not allow the chip to exceed 20 seconds at temperatures above 320 ° C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 5-10GHz

Pin Definition (QFN)

Pin number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

Outline drawing(QFN)



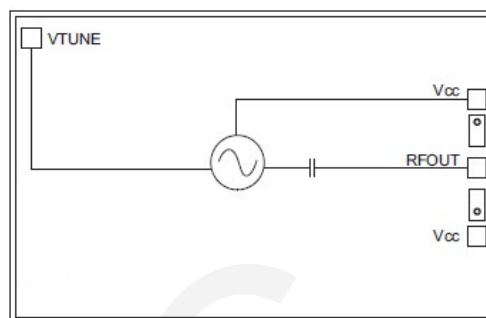
Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than 1.5um.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 7-14GHz

Features:

- Frequency range: 7GHz ~ 14GHz
- Single sideband phase noise: -94dBc / Hz @ 100KHz
- Output power: + 9dBm
- Power supply: + 5V / 45mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.8 x 1.9 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-0714 is a broadband voltage-controlled oscillator chip, the frequency range covers 7GHz ~ 14GHz, single sideband phase noise -94dBc / Hz @ 100KHz, output power + 9dBm. The MYO-0714 operates on a single + 5V supply. MYO-0714 is available in DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	-0.5V ~ 25V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

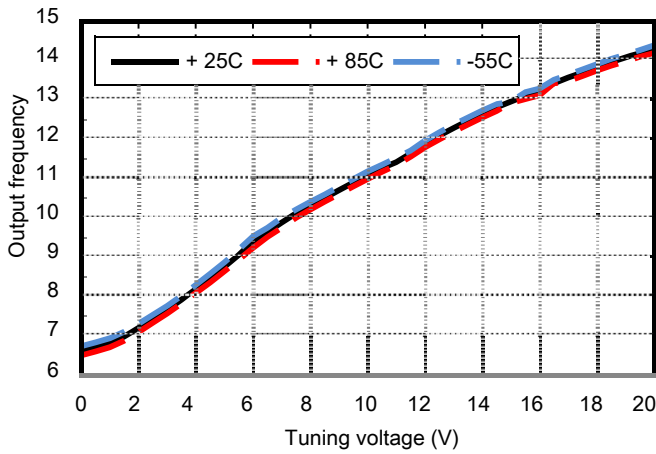
[1] Exceeding any one of the above limits may result in permanent damage.

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

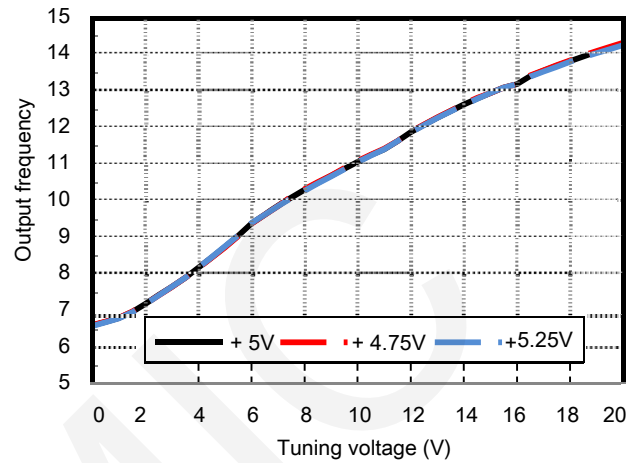
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	7-14			GHz
Output Power		9		dBm
Phase noise @ 100kHz		-94		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		45		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 7-14GHz

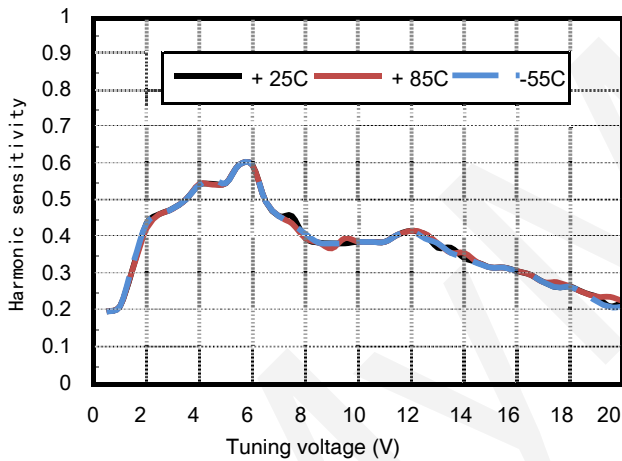
Tuning Voltage vs. Frequency $V_{cc} = +5V$



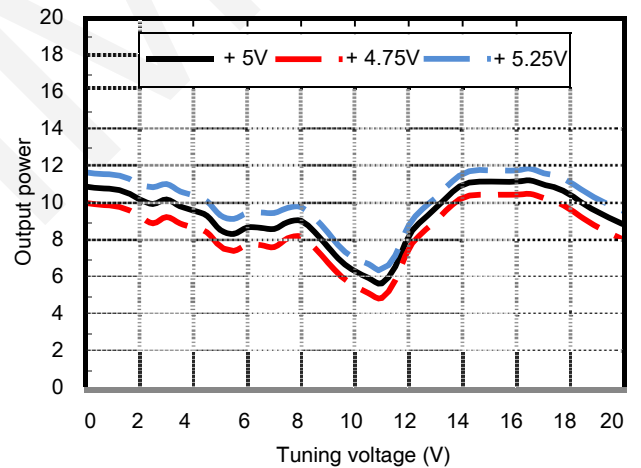
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



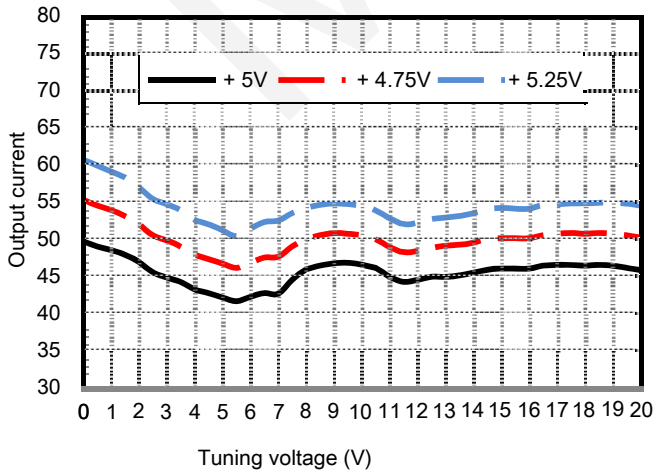
ESC sensitivity vs. tuning voltage,



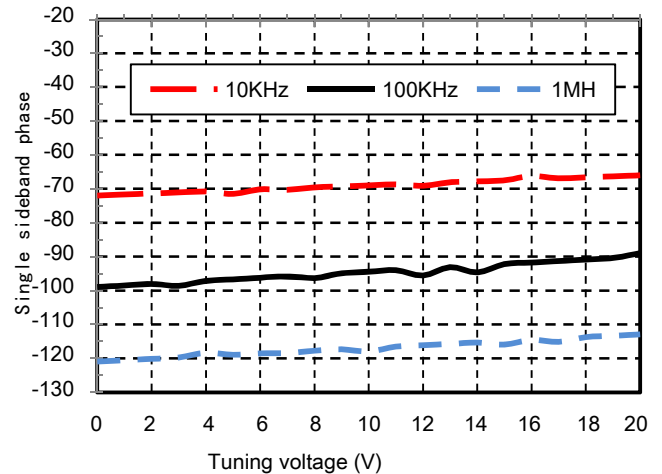
$V_{cc} = +5V$ tuning voltage versus power



Output current vs. temperature

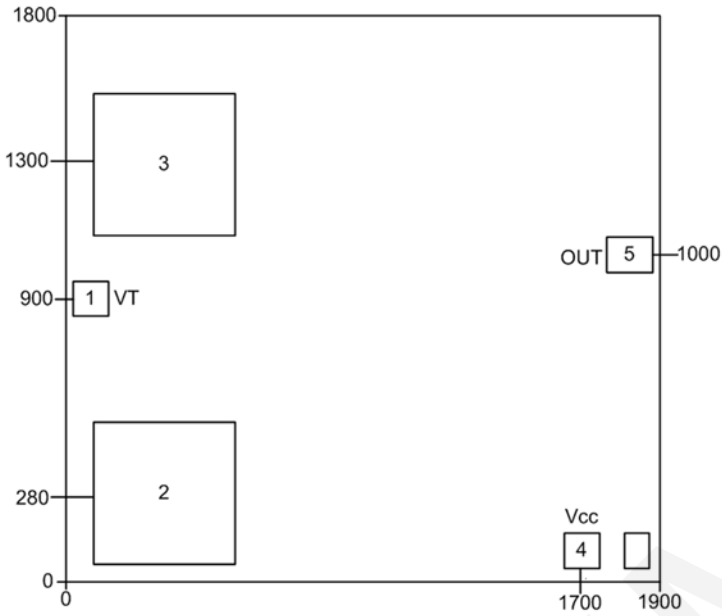


Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}C$



GaAs MMIC Voltage Controlled Oscillator Chip, 7-14GHz

Outline drawing



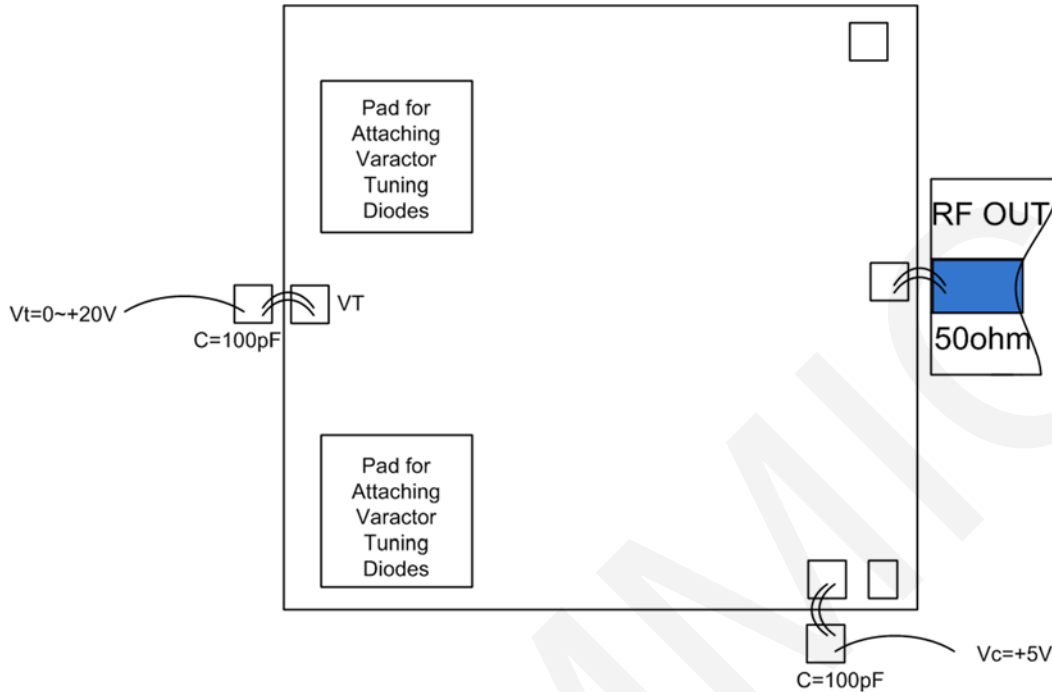
【2】 The figures are in microns

Pad description

Pad number	Functional symbols	Functional description
1	VT	Voltage tuning port
2,3	-	Varactor diodes are bonded
4	Vcc	Voltage supply port
5	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 7-14GHz

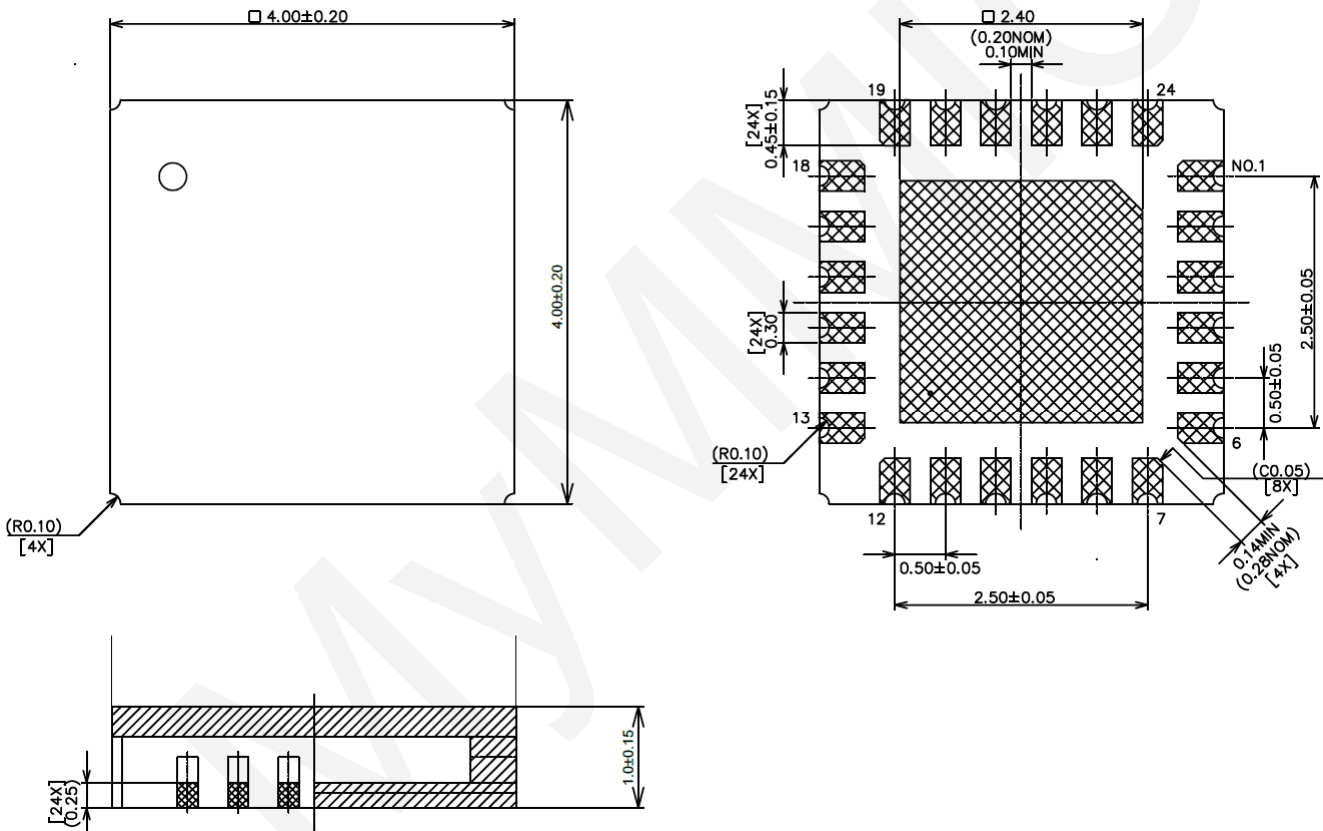
Recommended assembly drawing


Notes

- The Dies should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 ° C. Do not allow the chip to exceed 20 seconds at temperatures above 320 ° C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 7-14GHz
Pin description(QFN)

Pad number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

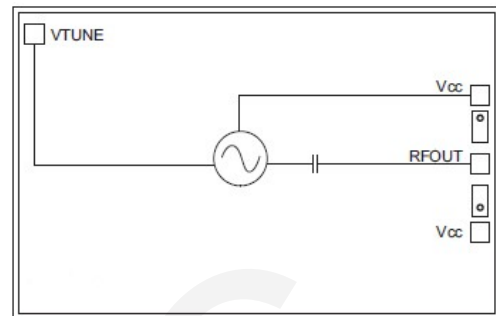
Outline drawing(QFN)

Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than 1.5um.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 8-12GHz

Features:

- Frequency range: 8GHz ~ 12GHz
- Single sideband phase noise: -94dBc / Hz @ 100KHz
- Output power: + 9dBm
- Power supply: + 5V / 45mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.8 x 1.9 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-0812 is a broadband voltage-controlled oscillator chip, the frequency range covers 8GHz ~ 12GHz, single sideband phase noise -94dBc / Hz @ 100KHz, output power + 9dBm. The MYO-0812 operates on a single + 5V supply. MYO-0812 is available in DIE and 4x4mmQFN standard case packages.

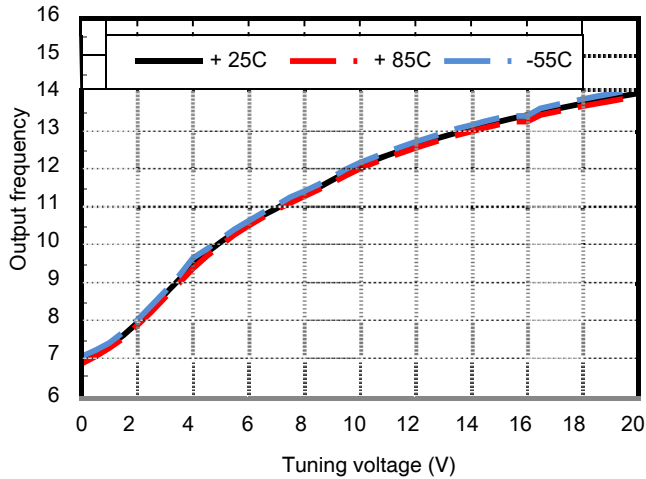
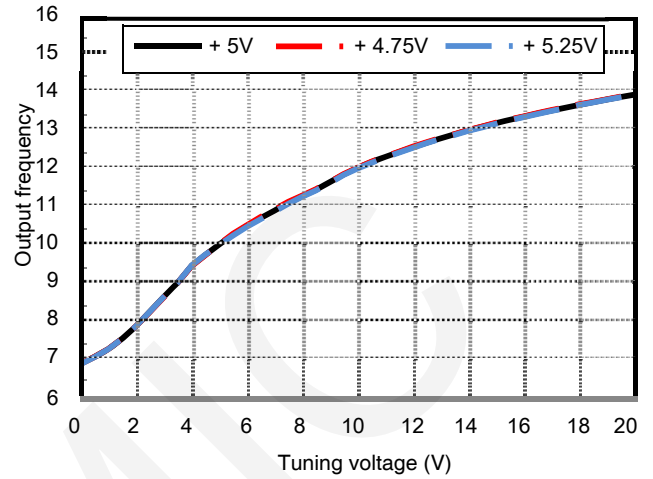
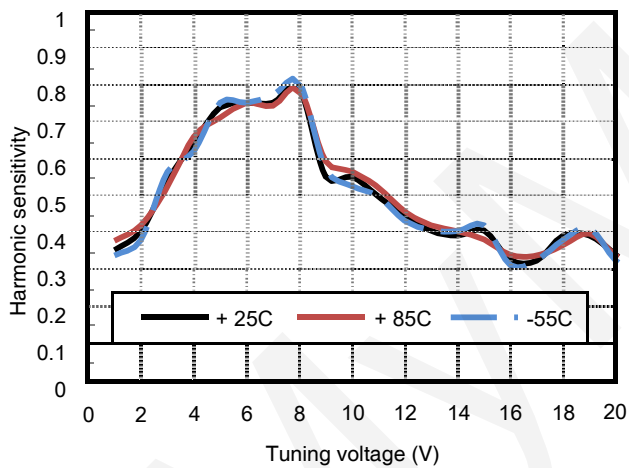
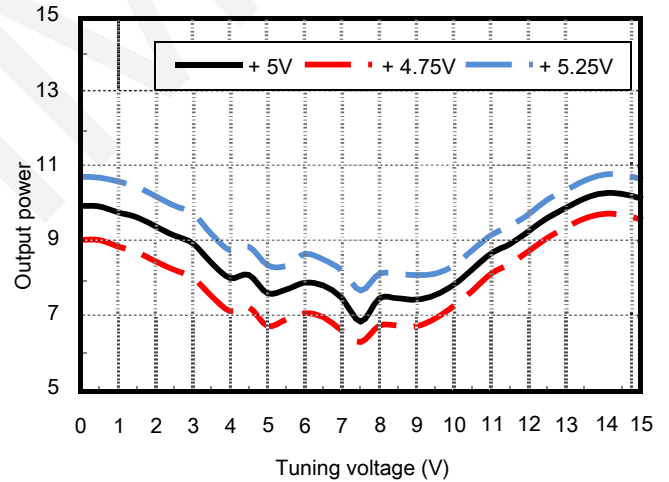
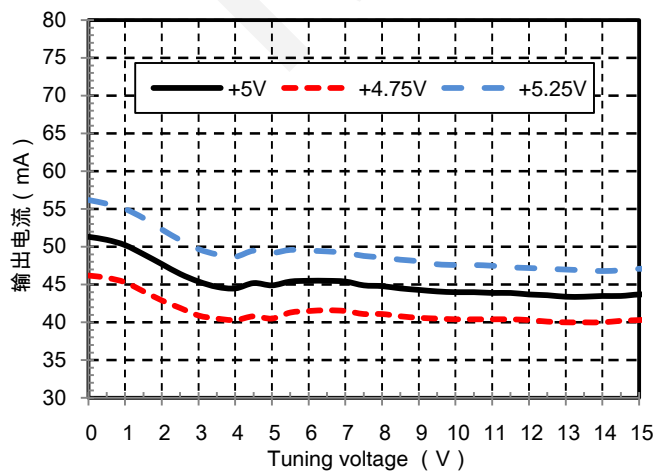
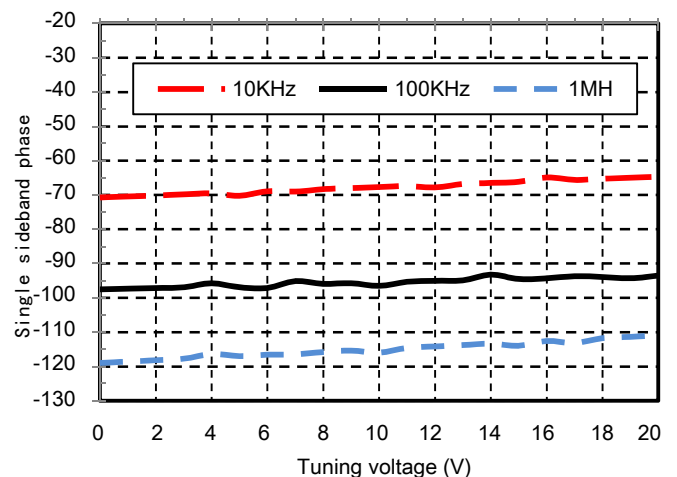
Absolute Max. Ratings

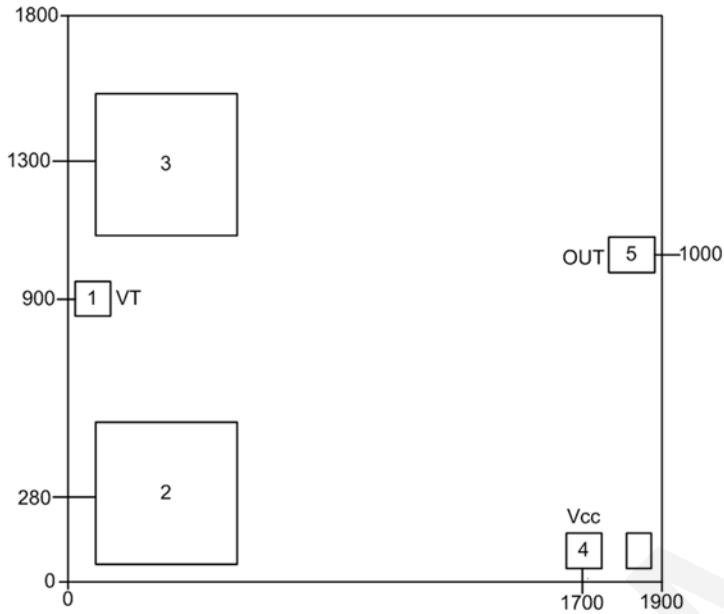
Maximum supply voltage	5.5 V.
The maximum ESC voltage	-0.5V ~ 25V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

【1】 Exceeding any one of the above limits may result in permanent damage.

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

Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	8-12			GHz
Output Power		9		dBm
Phase noise @ 100kHz		-94		dBc / Hz
Tuning voltage	0.5	-	20	V
Supply current		45		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

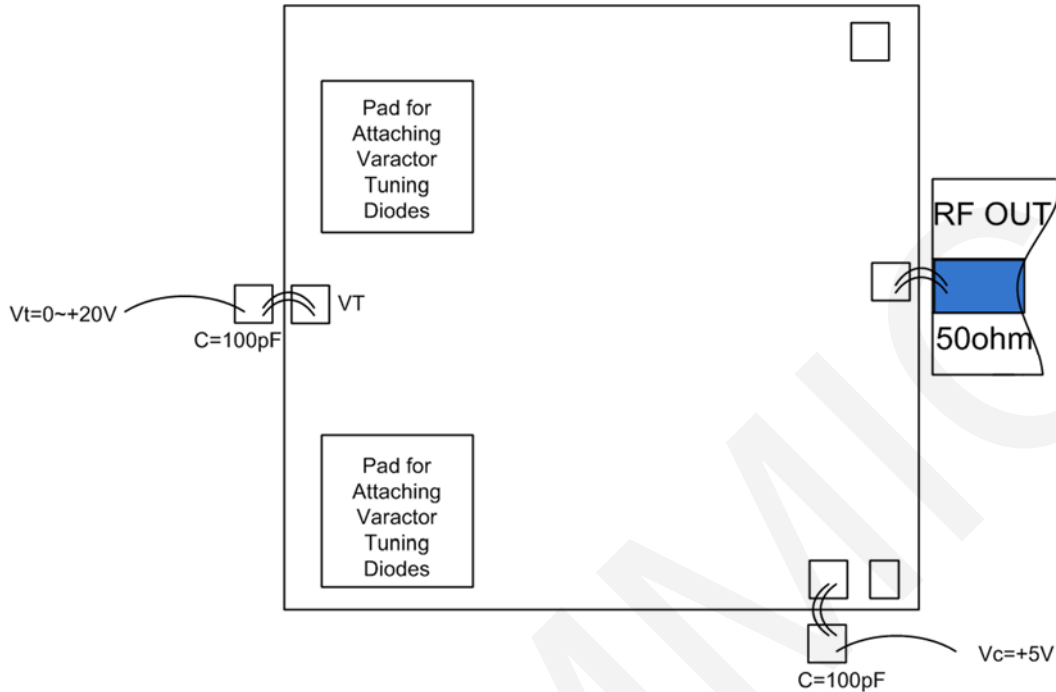
GaAs MMIC Voltage Controlled Oscillator Chip, 8-12GHz
Tuning Voltage vs. Frequency $V_{cc} = +5V$

Tuning Voltage vs. Frequency $T = +25^{\circ}C$

ESC sensitivity vs. tuning voltage, $V_{cc} = +5V$

Tuning voltage versus power

Output current vs. temperature

Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}C$


GaAs MMIC Voltage Controlled Oscillator Chip, 8-12GHz
outline drawing


【2】 The figures are in microns

Pad description

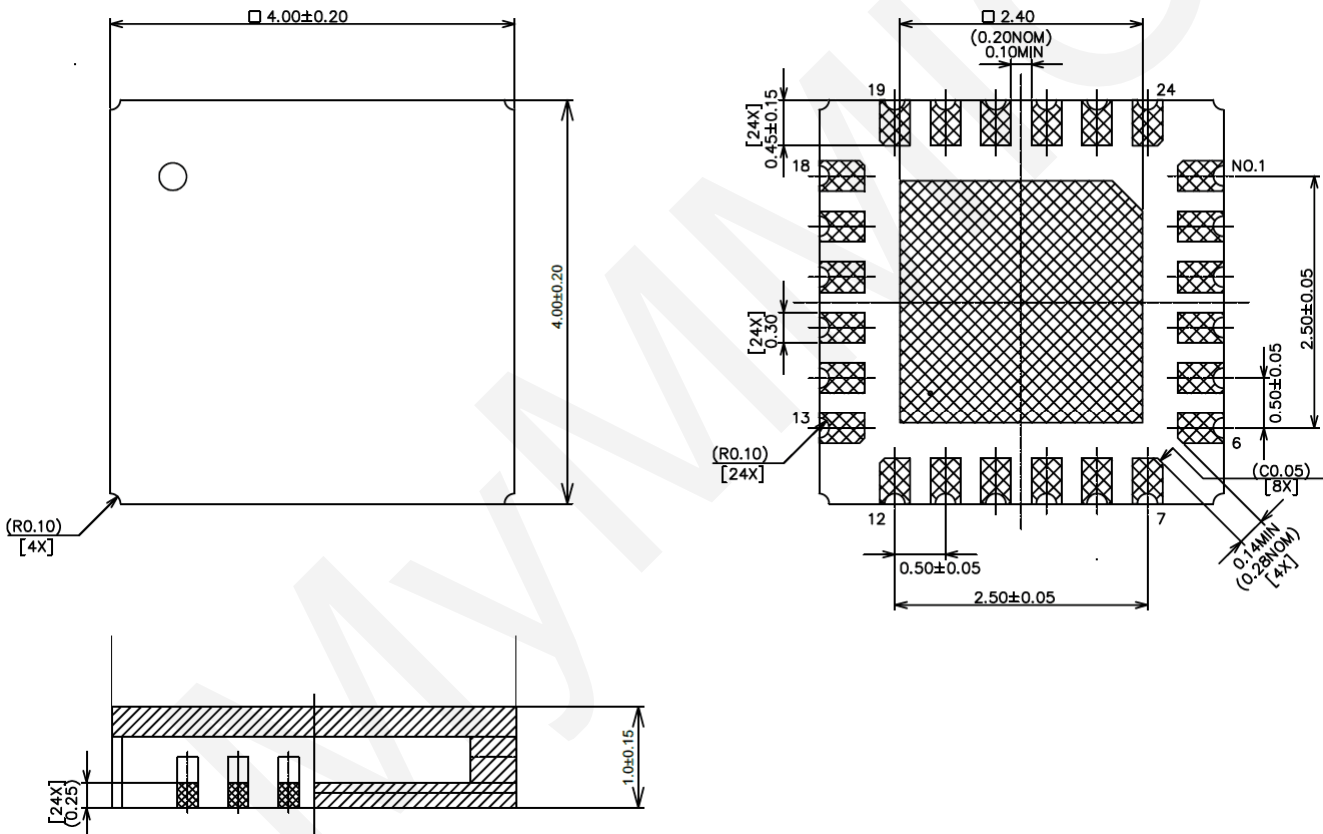
Pad number	Functional symbols	Functional description
1	VT	Voltage tuning port
2,3	-	Varactor diodes are bonded
4	Vcc	Voltage supply port
5	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 8-12GHz
Recommended assembly drawing

Notes

- The Dies should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 ° C. Do not allow the chip to exceed 20 seconds at temperatures above 320 ° C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 8-12GHz
Pin description(QFN)

Pad number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

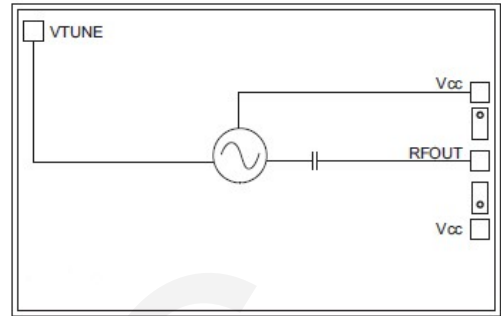
Outline drawing(QFN)

Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than 1.5um.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 9-18GHz

Features:

- Frequency range: 9GHz ~ 18GHz
- Single sideband phase noise: -90dBc / Hz @ 100KHz
- Output power: + 6dBm
- Power supply: + 5V / 70mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 2.0 x 2.0 x 0.1mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-0918 is a broadband voltage-controlled oscillator chip, the frequency range covers 9GHz ~ 18GHz, single sideband phase noise -90dBc / Hz @ 100KHz, output power + 6dBm. MYO-1020 use 0V / + 5V level switch to achieve full-band 9 ~ 18GHz work. The MYO-0918 is powered by a single + 5V supply. The MYO-0918 is available in DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	-0.5V ~ 25V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

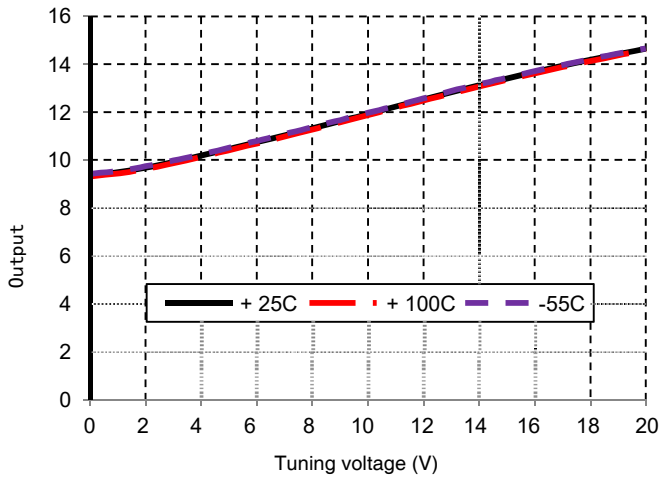
【1】 Exceeding any one of the above limits may result in permanent damage.

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

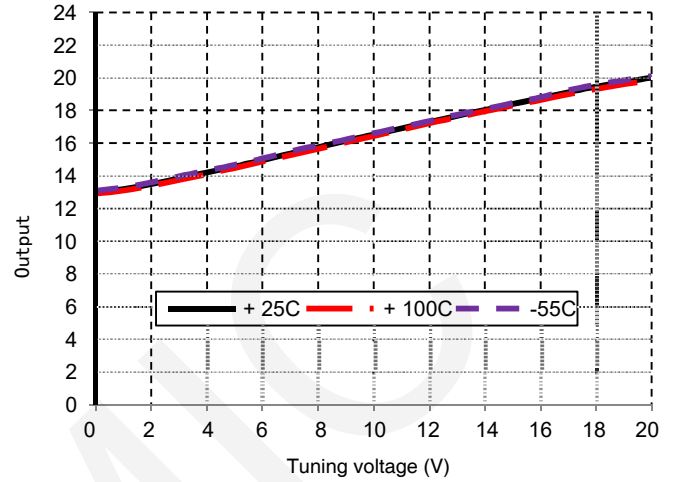
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	9-18			GHz
Output Power		6		dBm
Phase noise @ 100kHz		-90		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		70		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-12		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 9-18GHz

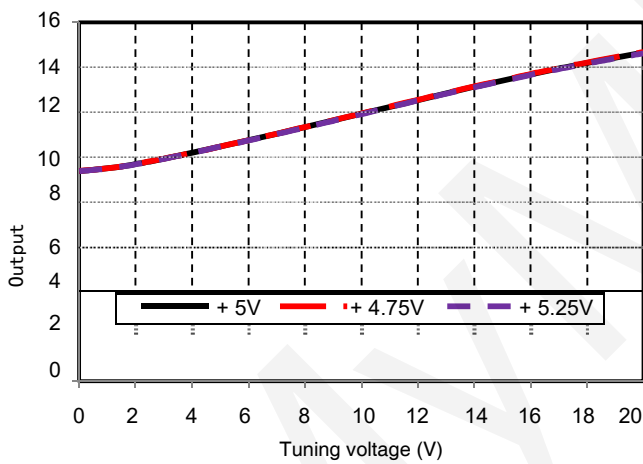
Tuning Voltage vs. Frequency $V_{cc} = +5V$ ($SW = 0V$)



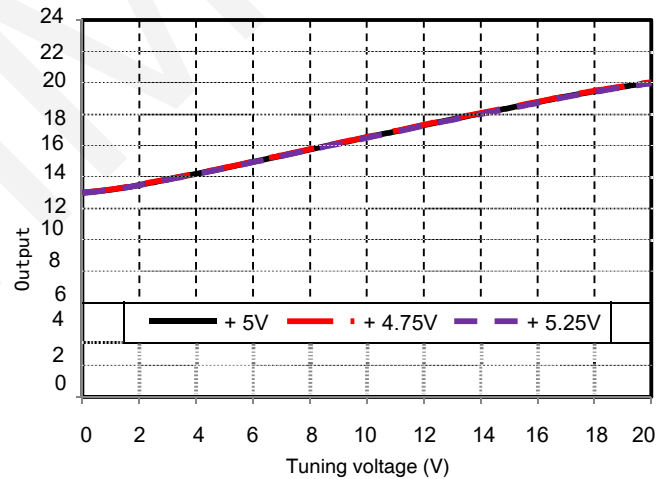
Tuning Voltage vs. Frequency $V_{cc} = +5V$ ($SW = 5V$)



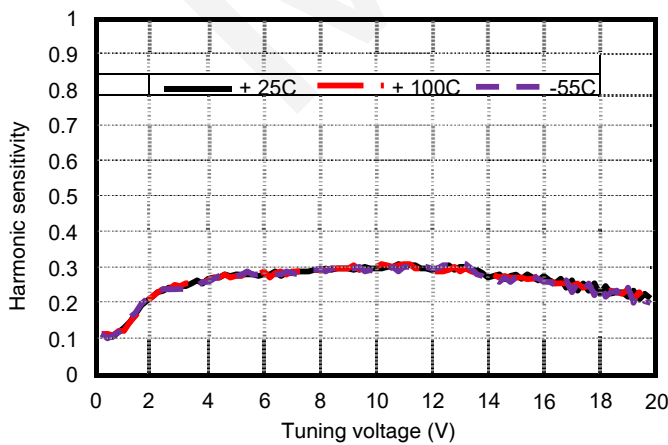
Tune voltage vs. frequency $T = +25^{\circ}C$ ($SW = 0V$)



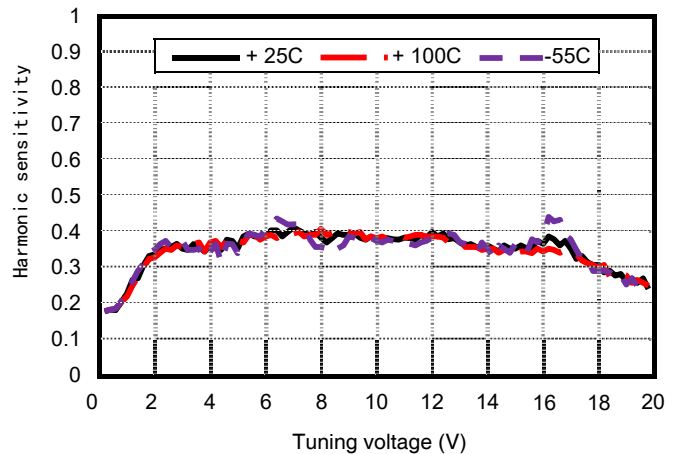
Tune voltage vs. frequency $T = +25^{\circ}C$ ($SW = 5V$)



Tuning Voltage vs. Temperature $V_{cc} = +5V$ ($SW = 0V$)

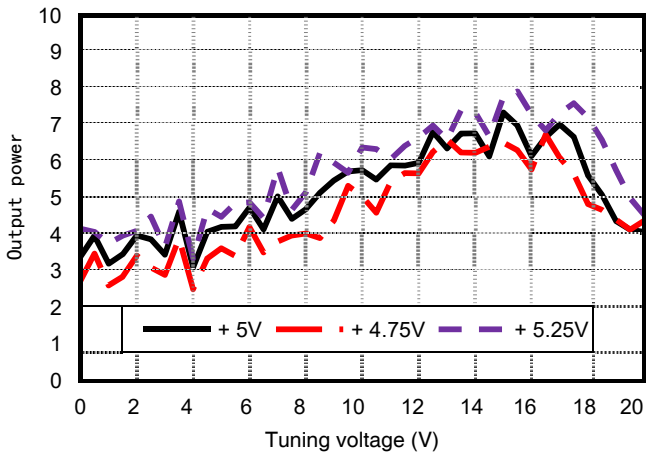


Tuning Voltage vs Temperature $V_{cc} = +5V$ ($SW = 5V$)

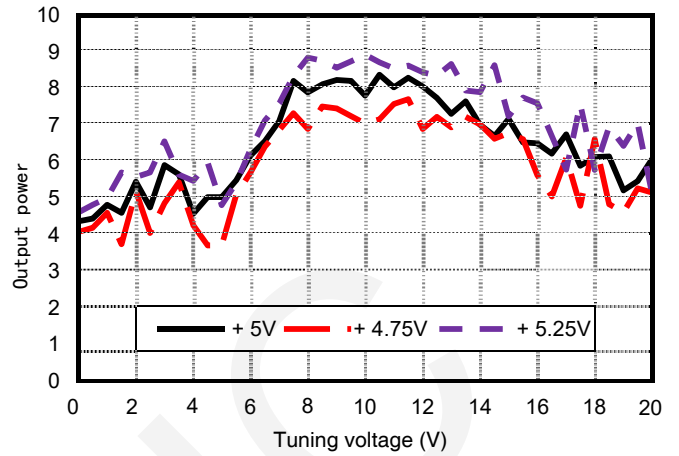


GaAs MMIC Voltage Controlled Oscillator Chip, 9-18GHz

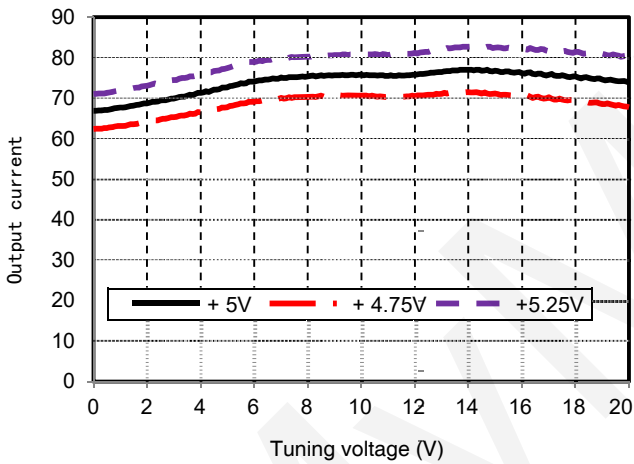
Output Power vs. Tuning Voltage (SW = 0V)



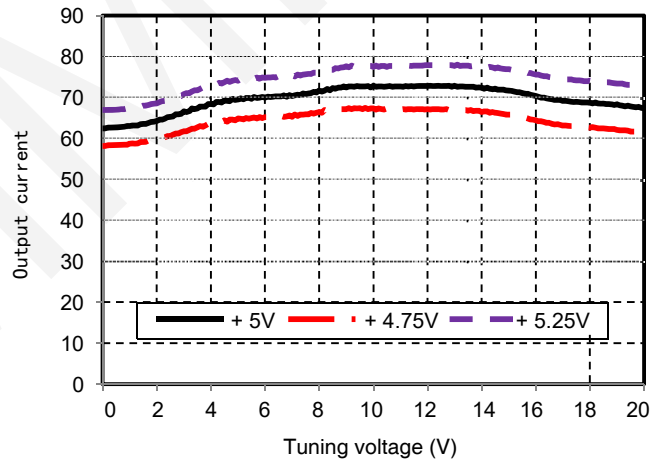
Output Power vs. Tuning Voltage (SW = 5V)



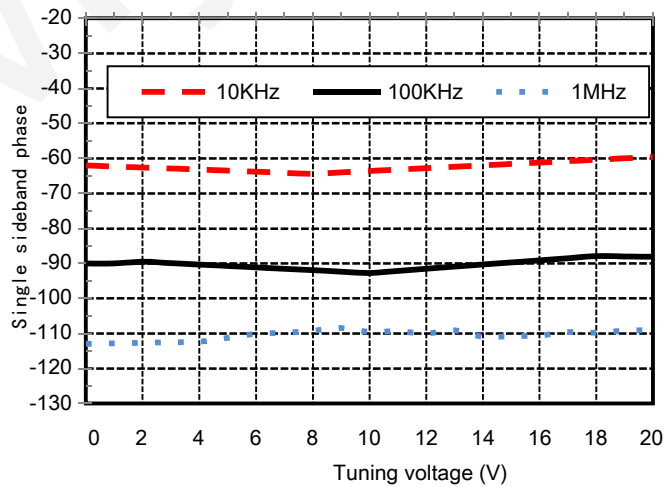
Output Current vs. Voltage (SW = 0V)



Output Current vs. Voltage (SW = 5V)

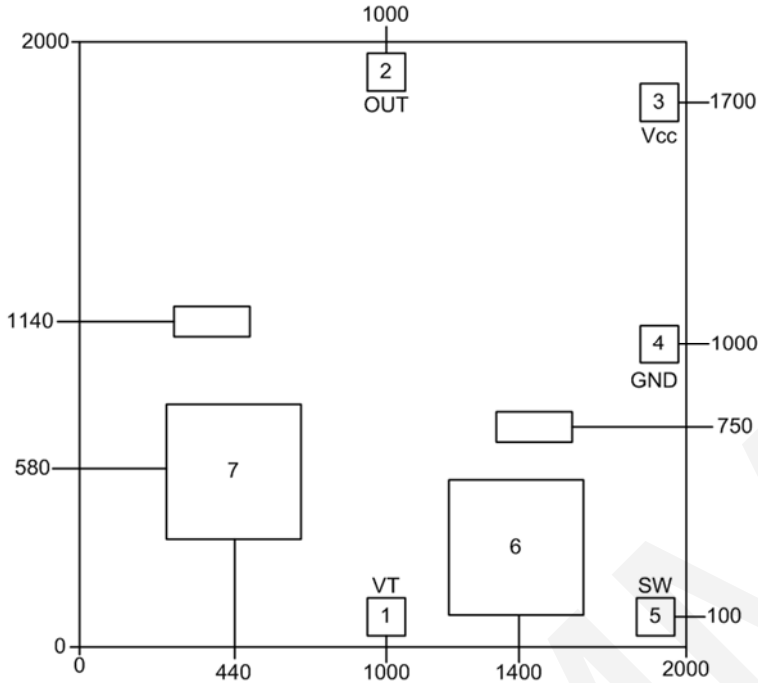


Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}\text{C}$



GaAs MMIC Voltage Controlled Oscillator Chip, 9-18GHz

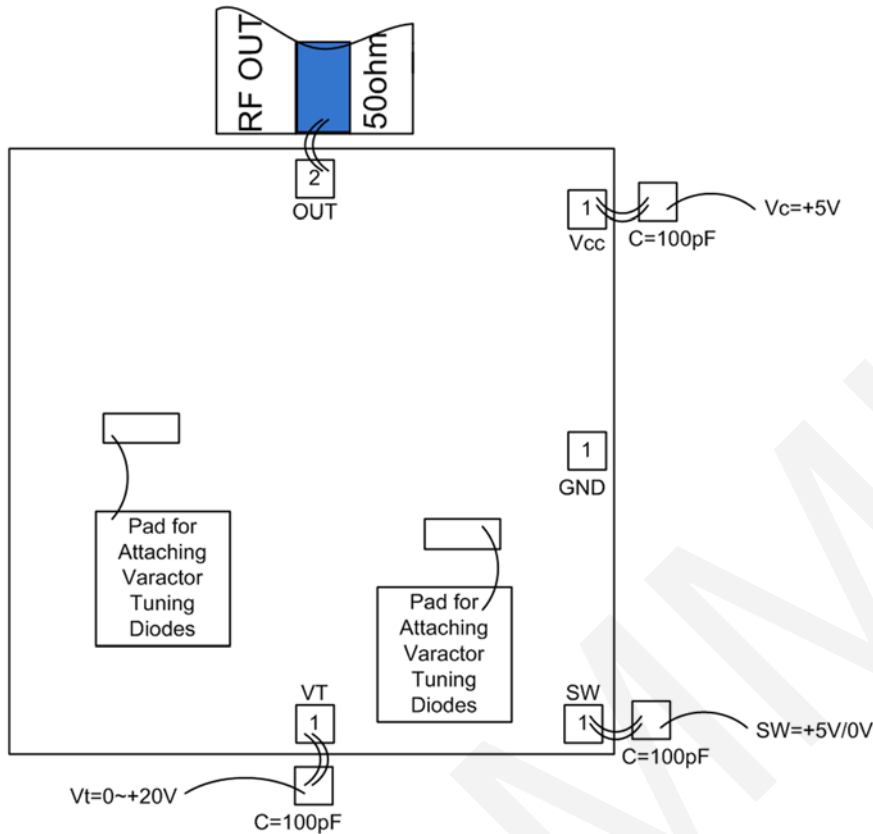
outline drawing



【2】 The figures are in microns

Pad description

Pad number	Functional symbols	Functional description
1	VT	Voltage tuning port
2	RF OUT	RF output port (internal blocking capacitor)
3	Vcc	Voltage supply port
4	GND	Ground
5	SW	Low frequency, high frequency switching voltage tuning terminal
6,7	-	Varactor diodes are bonded
bottom	GND	Ground

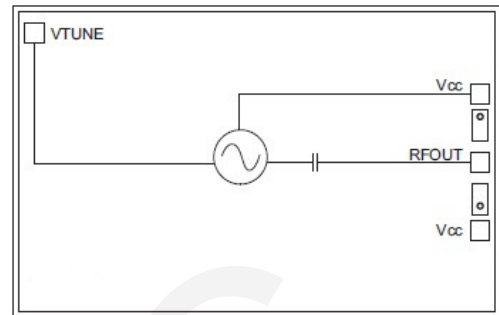
GaAs MMIC Voltage Controlled Oscillator Chip, 9-18GHz
Recommended assembly drawing

Notes

- The chips should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 °C. Do not allow the chip to exceed 20 seconds at temperatures above 320 °C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 11-15GHz

Features:

- Frequency range: 11GHz ~ 15GHz
- Single sideband phase noise: -88dBc / Hz @ 100KHz
- Output power: 9dBm
- Power supply: + 5V / 65mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.5 x 1.8 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-1115 is a broadband voltage-controlled oscillator chip, covering 11GHz ~ 15GHz frequency range, single-sideband phase noise -88dBc / Hz @ 100KHz, output power + 9dBm. The MYO-1115 operates on a single + 5V supply. MYO-1115 is available in DIE and 4x4mmQFN standard case packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	25 V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

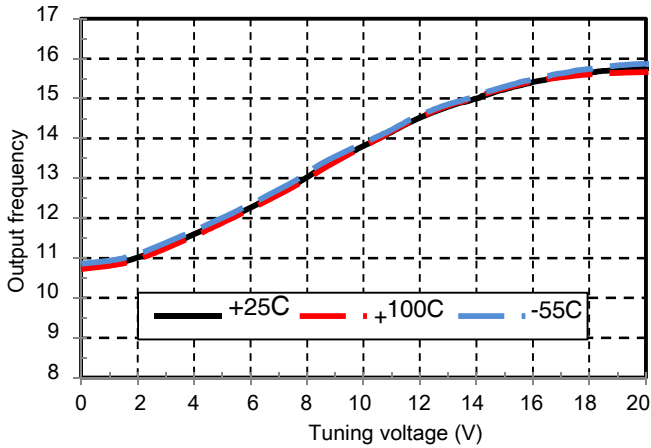
【1】 Exceeding any one of the above limits may result in permanent damage.

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

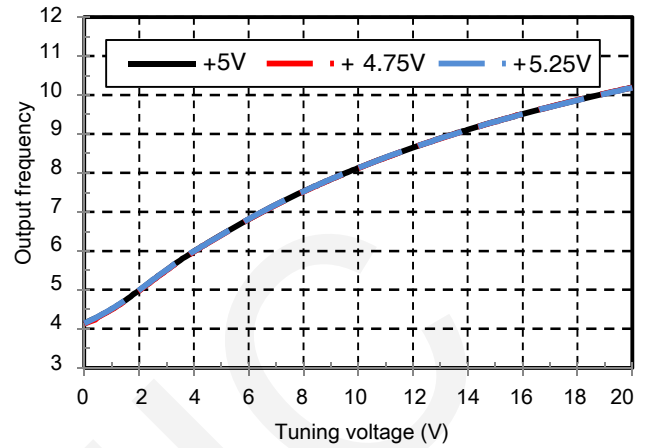
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	11-15			GHz
Output Power		9		dBm
Phase noise @ 100kHz		-88		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		65		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 11-15GHz

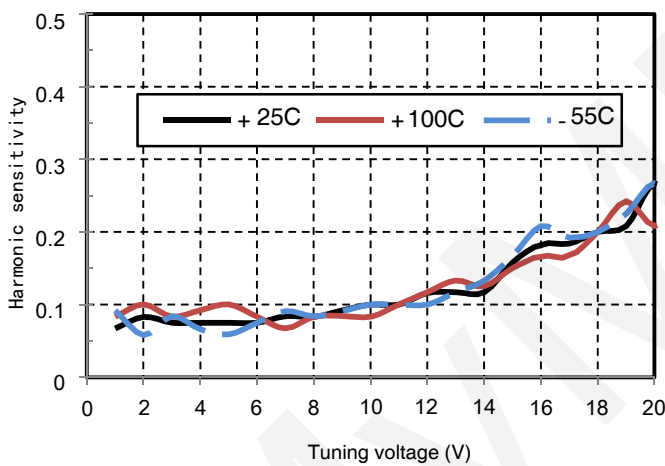
Tuning Voltage vs. Frequency $V_{cc} = +5V$



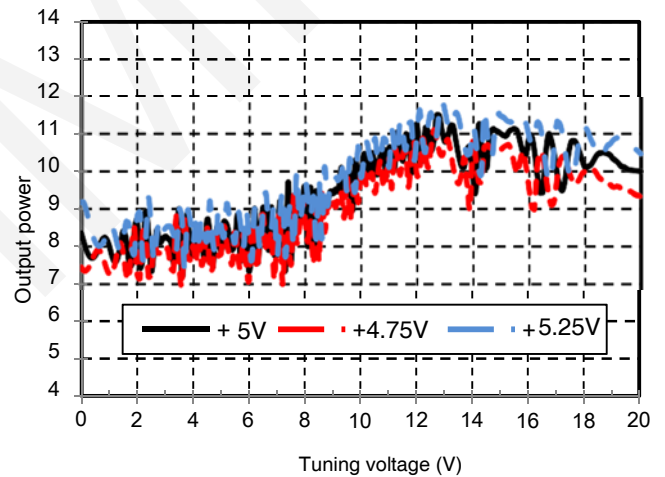
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



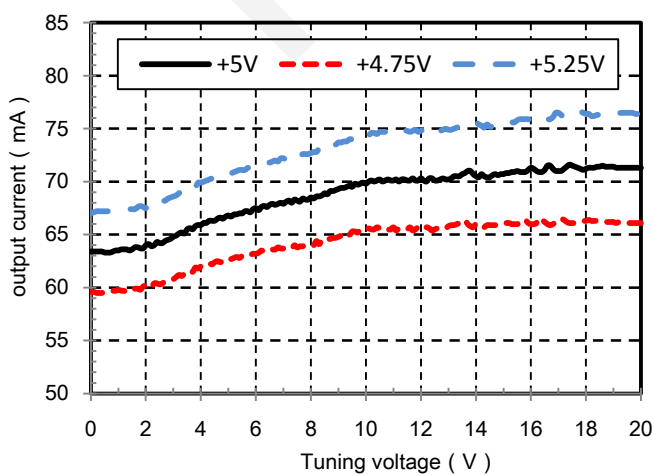
Tuning Voltage vs. Temperature $V_{cc} = +5V$



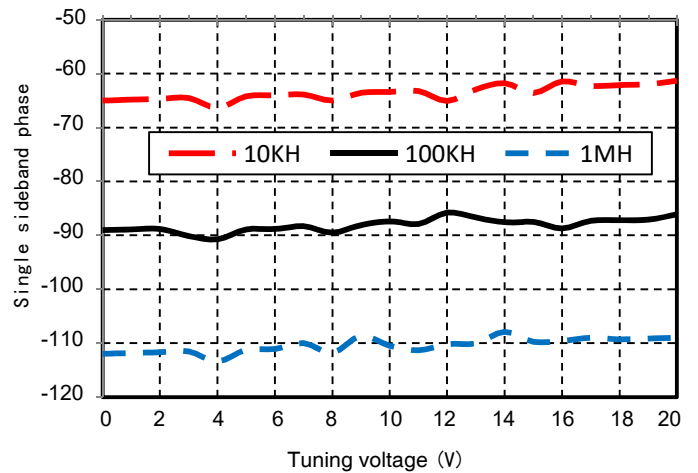
Output Power vs. Tuning Voltage



Output current vs. voltage

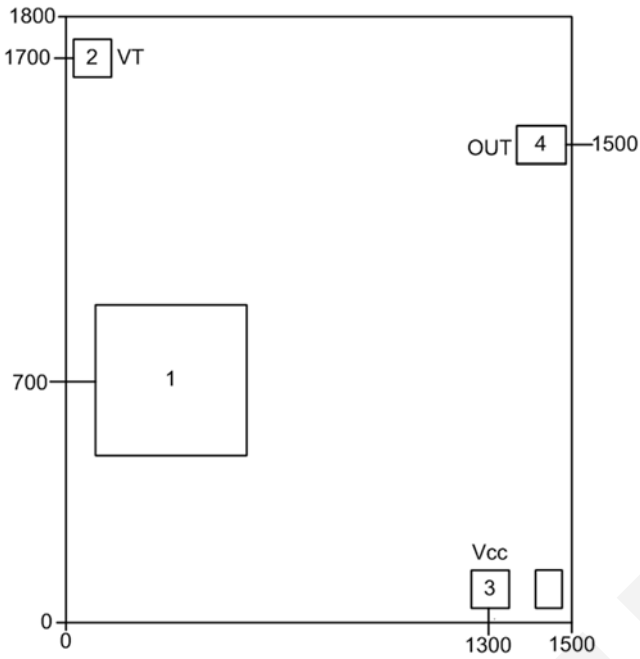


Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}C$



GaAs MMIC Voltage Controlled Oscillator Chip, 11-15GHz

Outline drawing



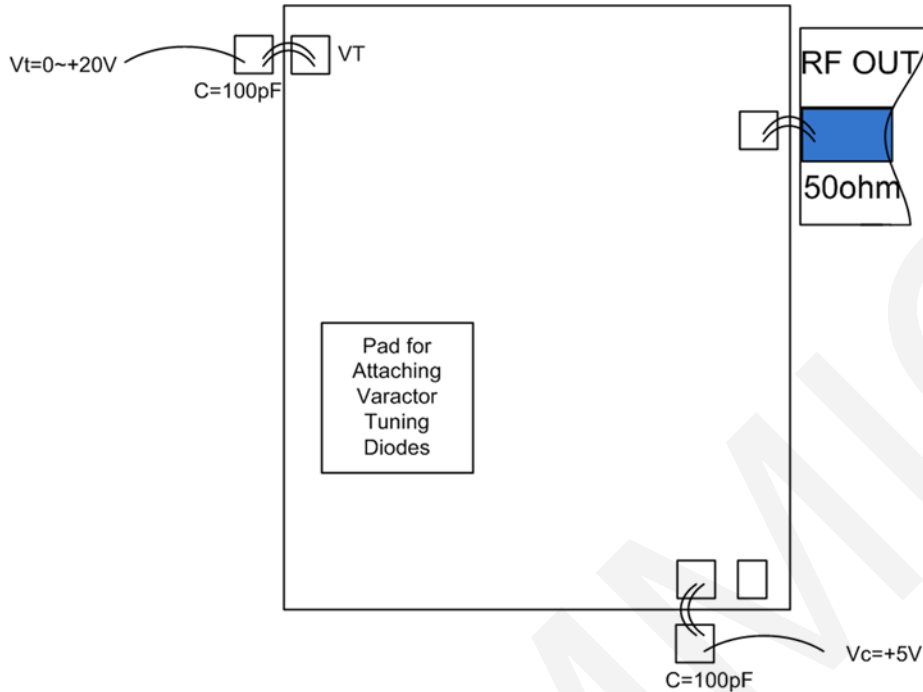
【2】 The figures are in microns

Pad description(DIE)

Pad number	Functional symbols	Functional description
1	-	Varactor diodes are bonded
2	VT	Voltage tuning port
3	Vcc	Voltage supply port
4	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 11-15GHz

Recommended assembly drawing



Notes

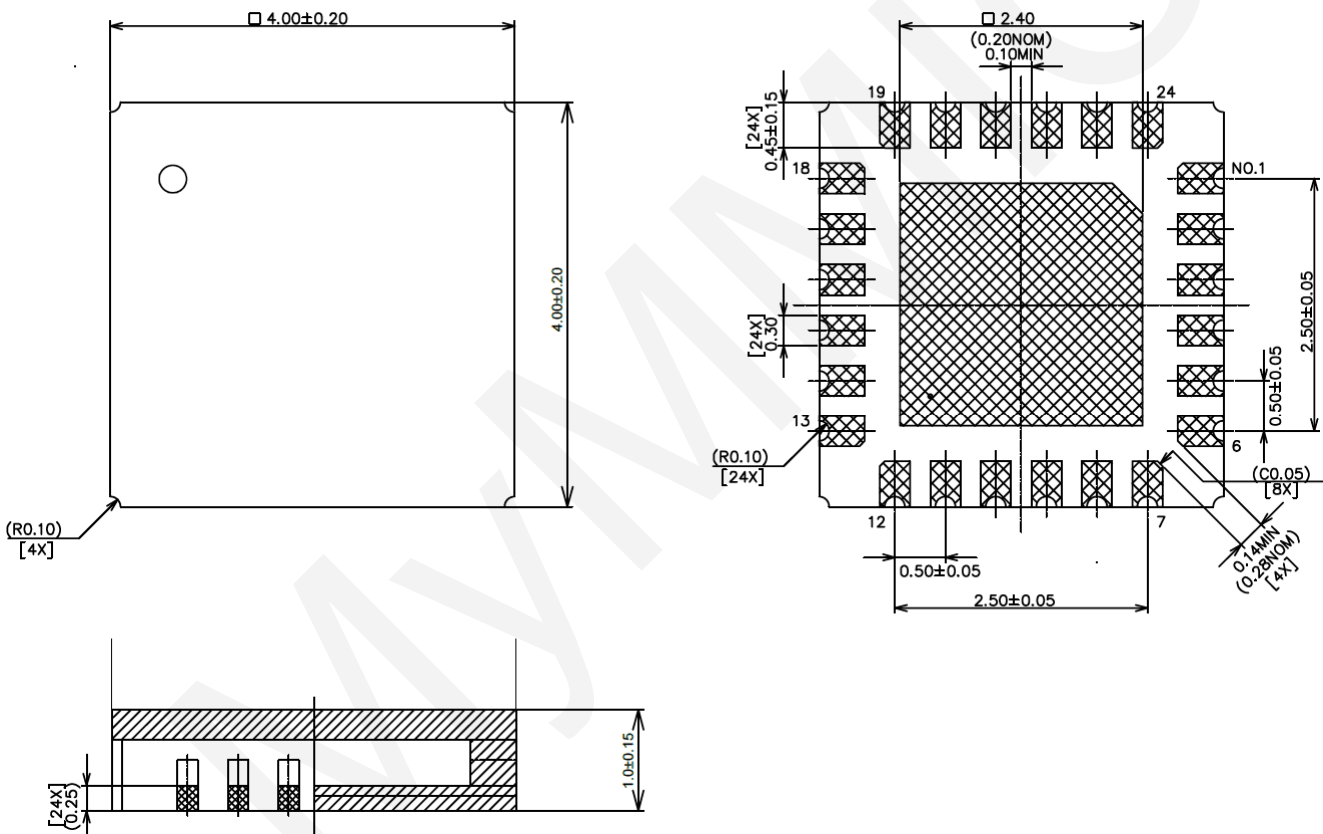
- The Dies should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 ° C. Do not allow the chip to exceed 20 seconds at temperatures above 320 ° C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 11-15GHz

Pin Definition (QFN)

Pin number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

Outline drawing(QFN)



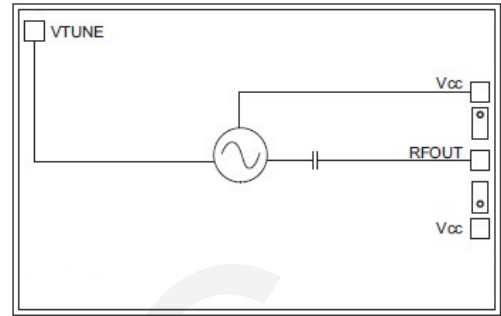
Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than 1.5 μ m.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 12-18GHz

Features:

- Frequency range: 12GHz ~ 18GHz
- Single sideband phase noise: -90dBc / Hz @ 100KHz
- Output power: 0dBm
- Power supply: + 5V / 60mA
- 50Ohm input / output
- 100% on-chip test
- Chip size: 1.5 x 1.8 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-1218 is a broadband voltage-controlled oscillator chip, the frequency range covers 12GHz ~ 18GHz, single-sideband phase noise -90dBc / Hz @ 100KHz, output power +5 dBm. The MYO-1218 operates on a single + 5V supply.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	-0.5V ~ 25V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

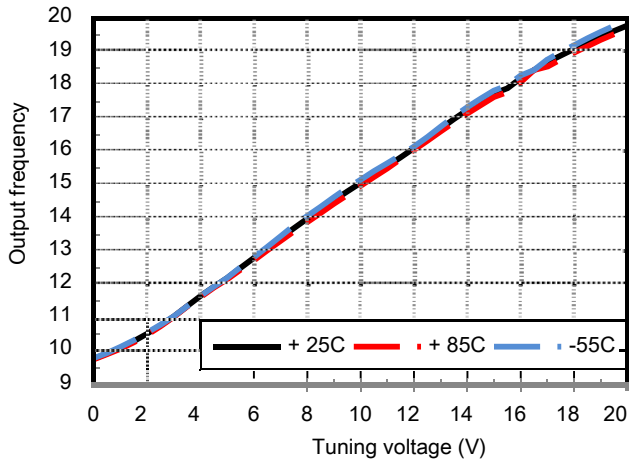
【1】 Exceeding any one of the above limits may result in permanent damage.

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

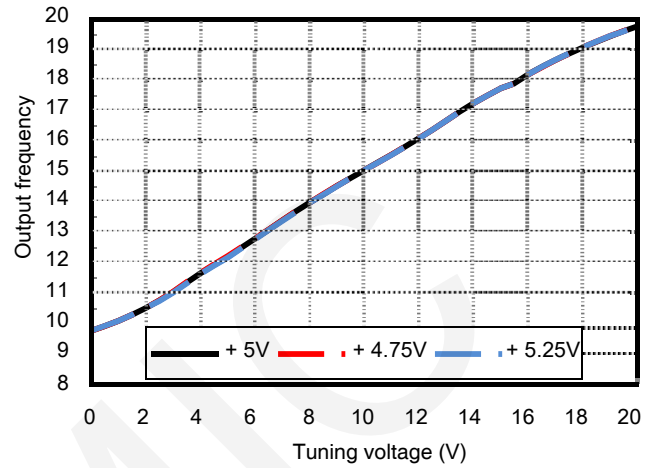
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	12-18			GHz
Output Power		3		dBm
Phase noise @ 100kHz		-90		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		60		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-12		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 12-18GHz

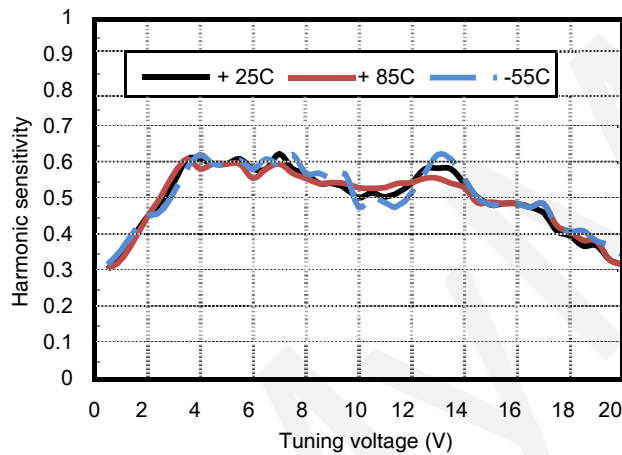
Tuning Voltage vs. Frequency $V_{cc} = +5V$



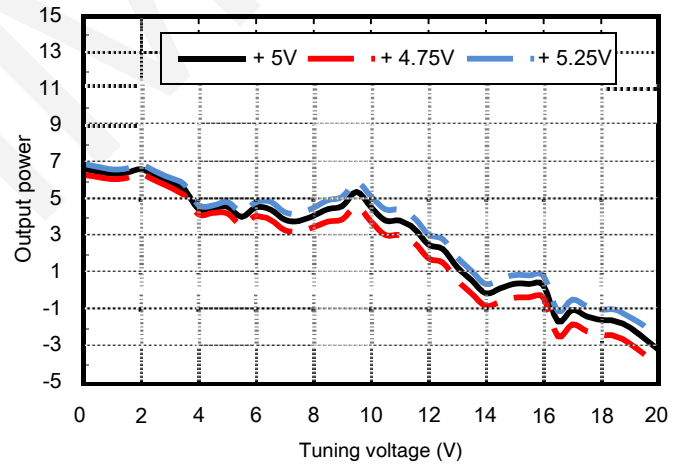
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



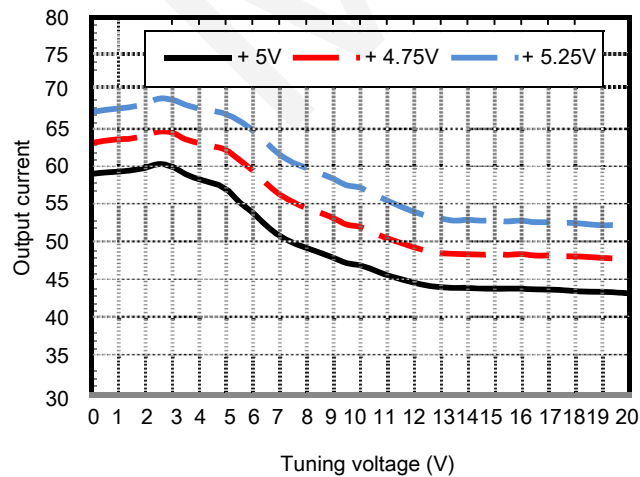
Tuning Voltage vs. Temperature $V_{cc} = +5V$



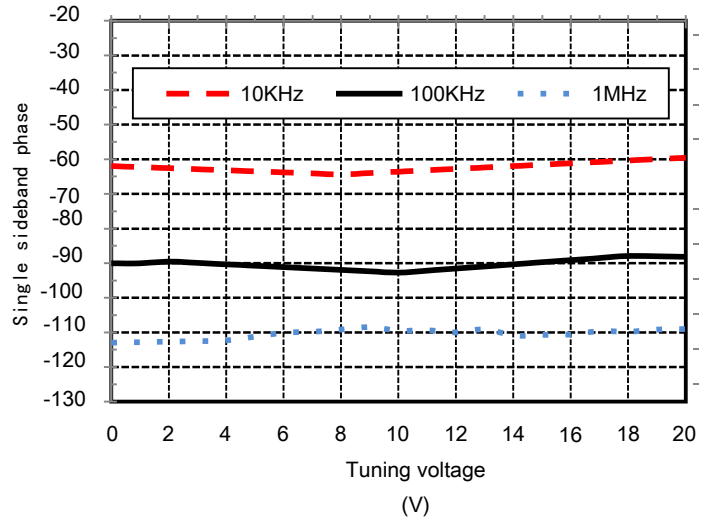
Output Power vs. Tuning Voltage



Output current vs. tuning voltage $T = +25^{\circ}C$

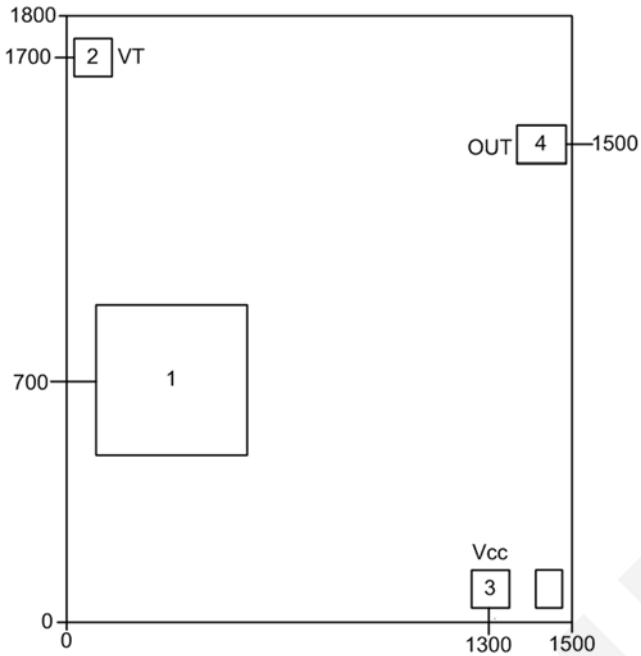


Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}C$



GaAs MMIC Voltage Controlled Oscillator Chip, 12-18GHz

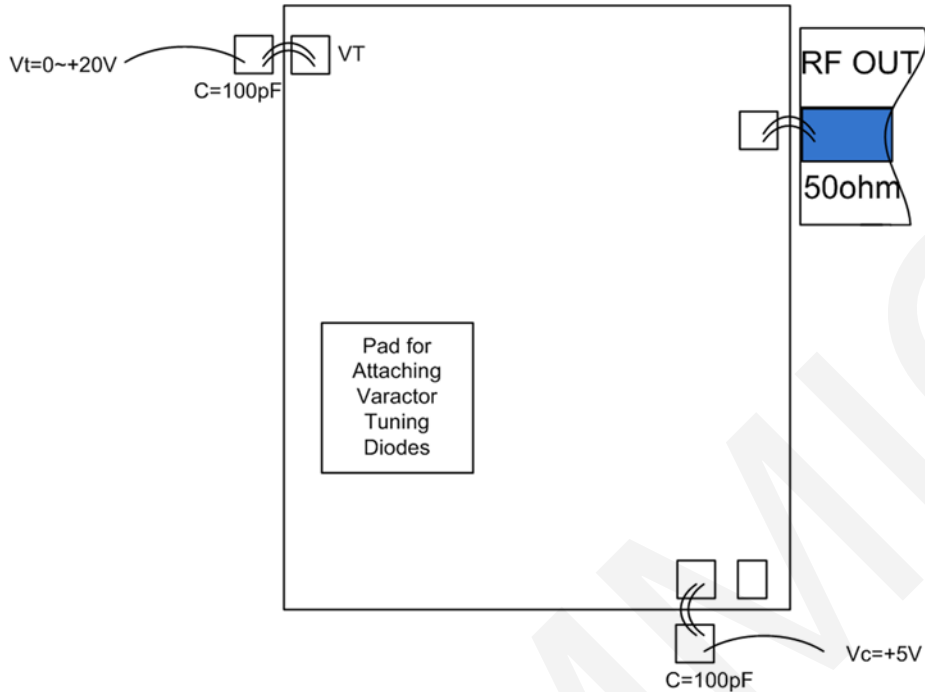
outline drawing



【2】 The figures are in microns

Pad description

Pad number	Functional symbols	Functional description
1	-	Varactor diodes are bonded
2	VT	Voltage tuning port
3	Vcc	Voltage supply port
4	RF OUT	RF output port
bottom	GND	Ground

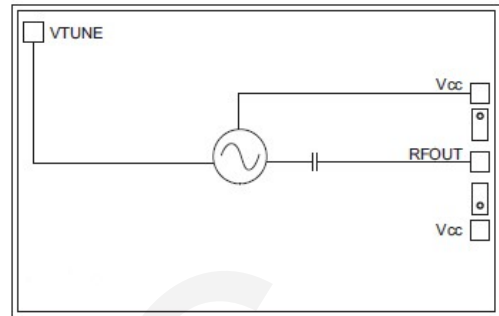
GaAs MMIC Voltage Controlled Oscillator Chip, 12-18GHz
Recommended assembly drawing

Notes

- The chips should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 ° C. Do not allow the chip to exceed 20 seconds at temperatures above 320 ° C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 10-20GHz

Features:

- Frequency range: 10GHz ~ 20GHz
- Single sideband phase noise: -90dBc / Hz @ 100KHz
- Output power: 4.5dBm
- Power supply: + 5V / 70mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 2.0 x 2.0 x 0.1mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-1020 is a broadband voltage-controlled oscillator chip, the frequency range covers 10GHz ~ 20GHz, single-sideband phase noise -90dBc / Hz @ 100KHz, output power +4.6 dBm. MYO-1020 use 0V / + 5V level switch to achieve full-band 10 ~ 20GHz work. The MYO-1020 operates from a single + 5V supply. The MYO-1020 is available in both DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	-0.5V ~ 25V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

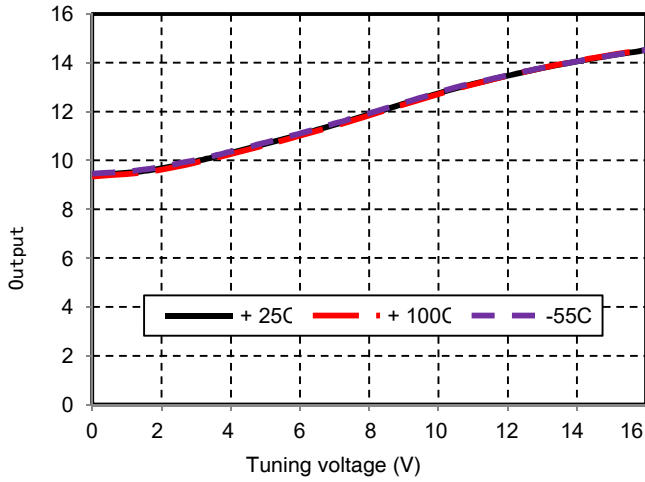
【1】 Exceeding any one of the above limits may result in permanent damage.

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

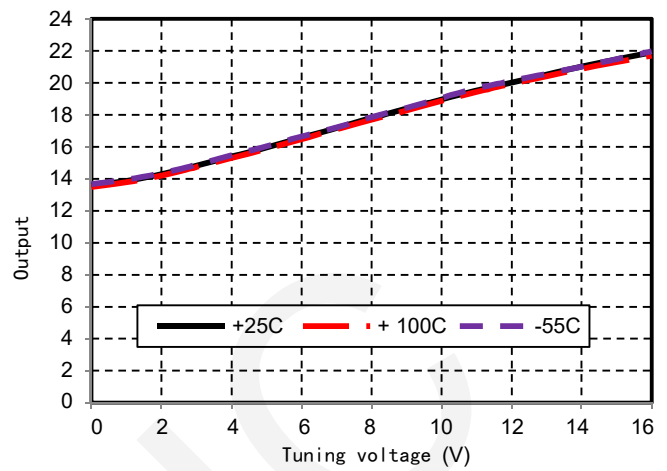
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	10-20			GHz
Output Power		4.5		dBm
Phase noise @ 100kHz		-90		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		70		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-12		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 10-20GHz

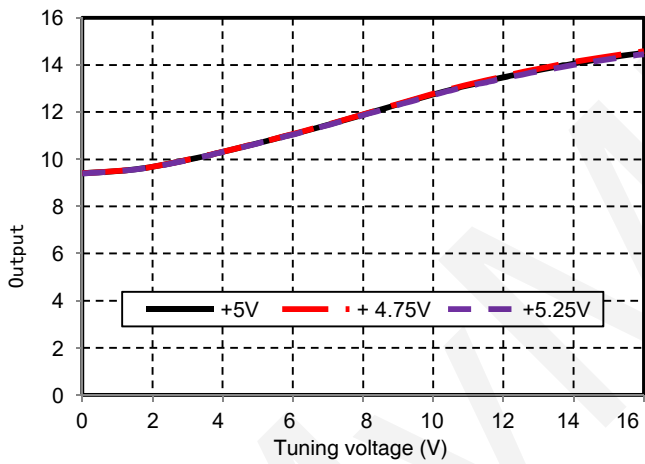
Tuning Voltage vs. Frequency $V_{cc} = +5V$ ($SW = 0V$)



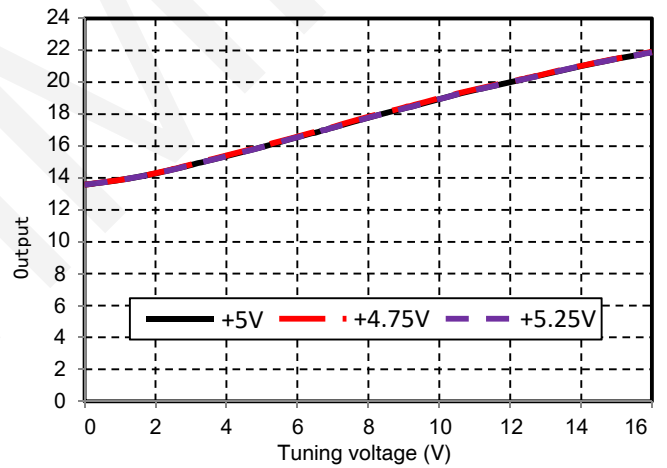
Tuning Voltage vs. Frequency $V_{cc} = +5V$ ($SW = 5V$)



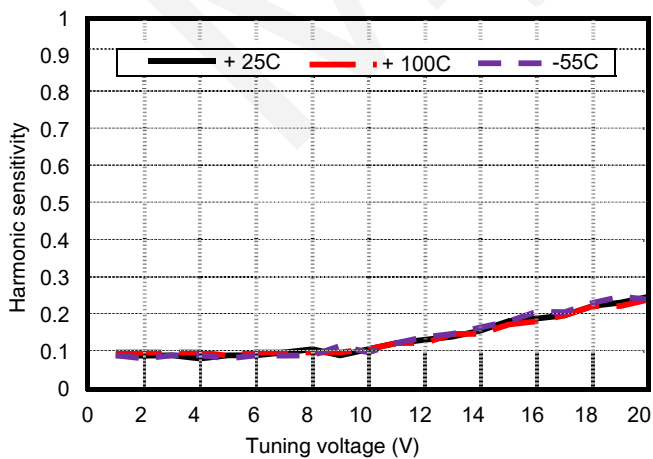
Tune voltage vs. frequency $T = +25^{\circ}C$ ($SW = 0V$)



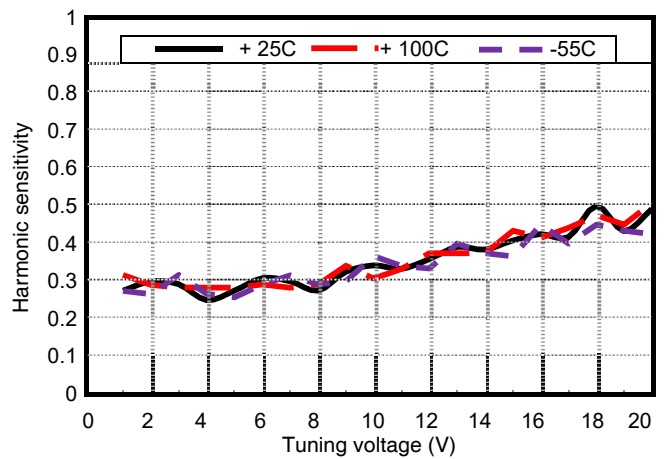
Tune voltage vs. frequency $T = +25^{\circ}C$ ($SW = 5V$)



Tuning Voltage vs. Temperature $V_{cc} = +5V$ ($SW = 0V$)

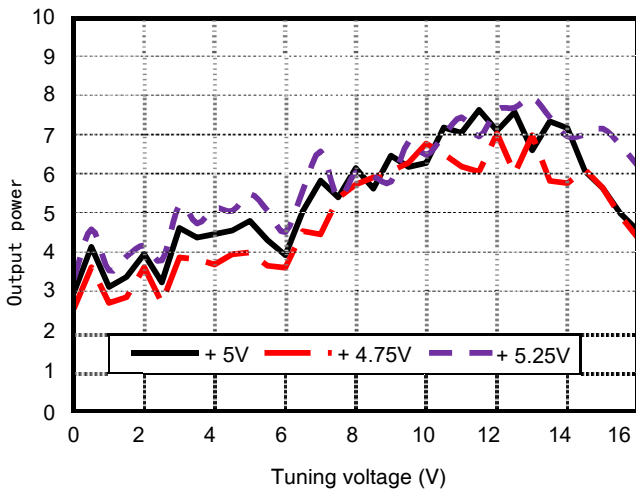


Tuning Voltage vs. Temperature $V_{cc} = +5V$ ($SW = 5V$)

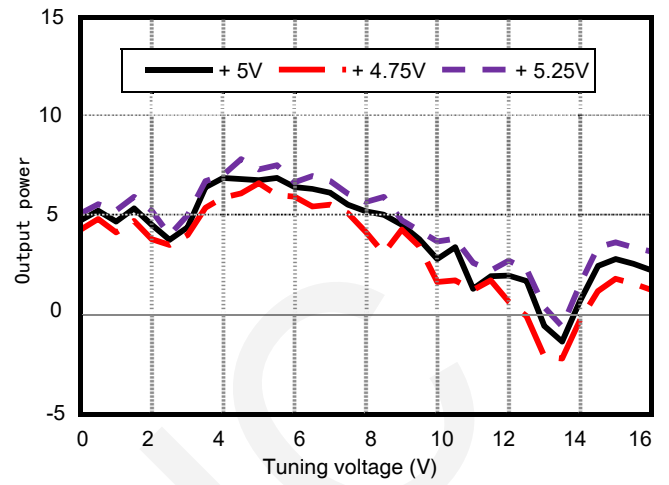


GaAs MMIC Voltage Controlled Oscillator Chip, 10-20GHz

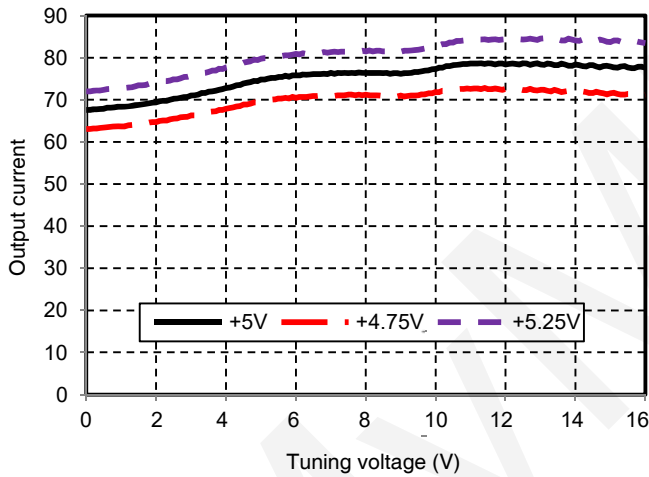
Output Power vs. Tuning Voltage (SW = 0V)



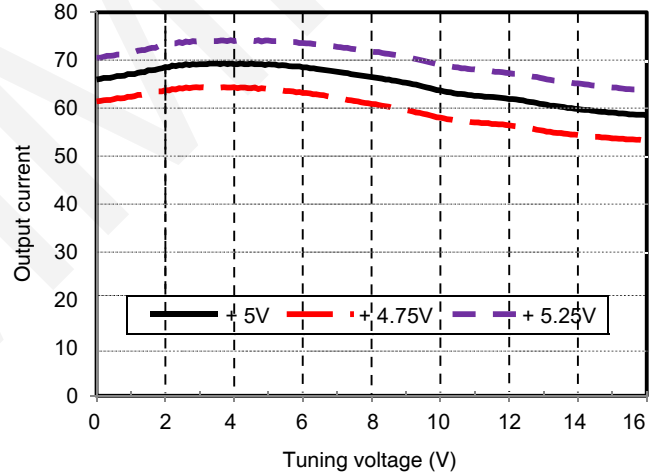
Output Power vs. Tuning Voltage (SW = 5V)



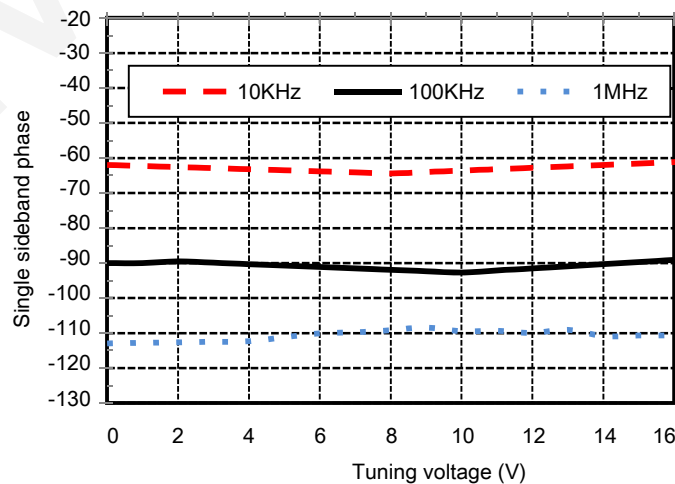
Output Current vs. Voltage (SW = 0V)



Output Current vs. Voltage (SW = 5V)

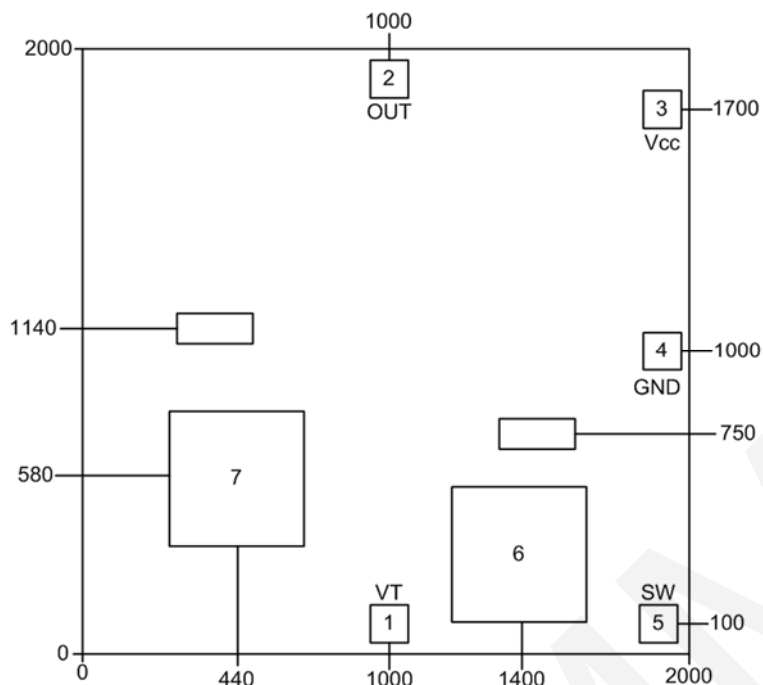


Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}\text{C}$



GaAs MMIC Voltage Controlled Oscillator Chip, 10-20GHz

Outline drawing



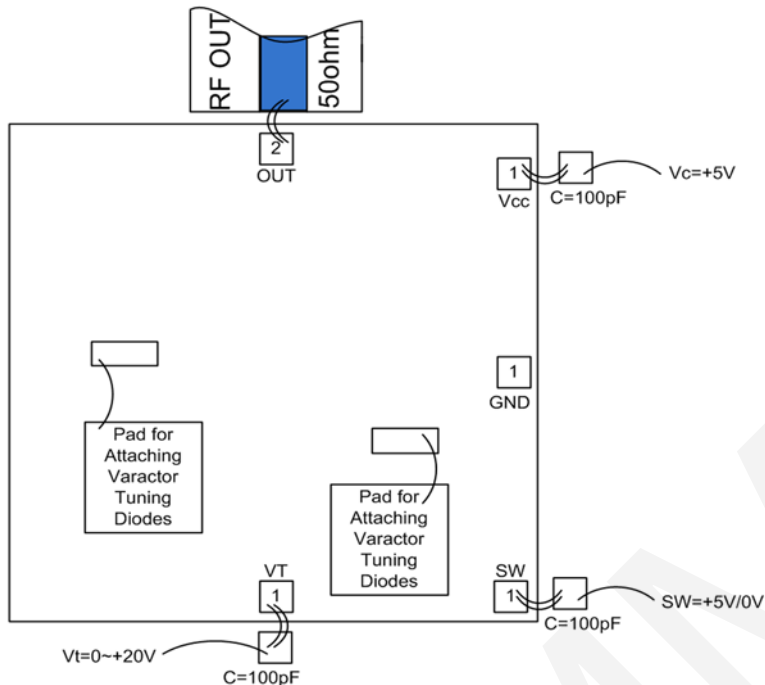
【2】 The figures are in microns

Pad description

Pad number	Functional symbols	Functional description
1	VT	Voltage tuning port
2	RF OUT	RF output port (internal blocking capacitor)
3	Vcc	Voltage supply port
4	GND	Ground
5	SW	Low frequency, high frequency switching voltage tuning terminal
6,7	-	Varactor diodes are bonded
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 10-20GHz

Recommended assembly drawing



Notes

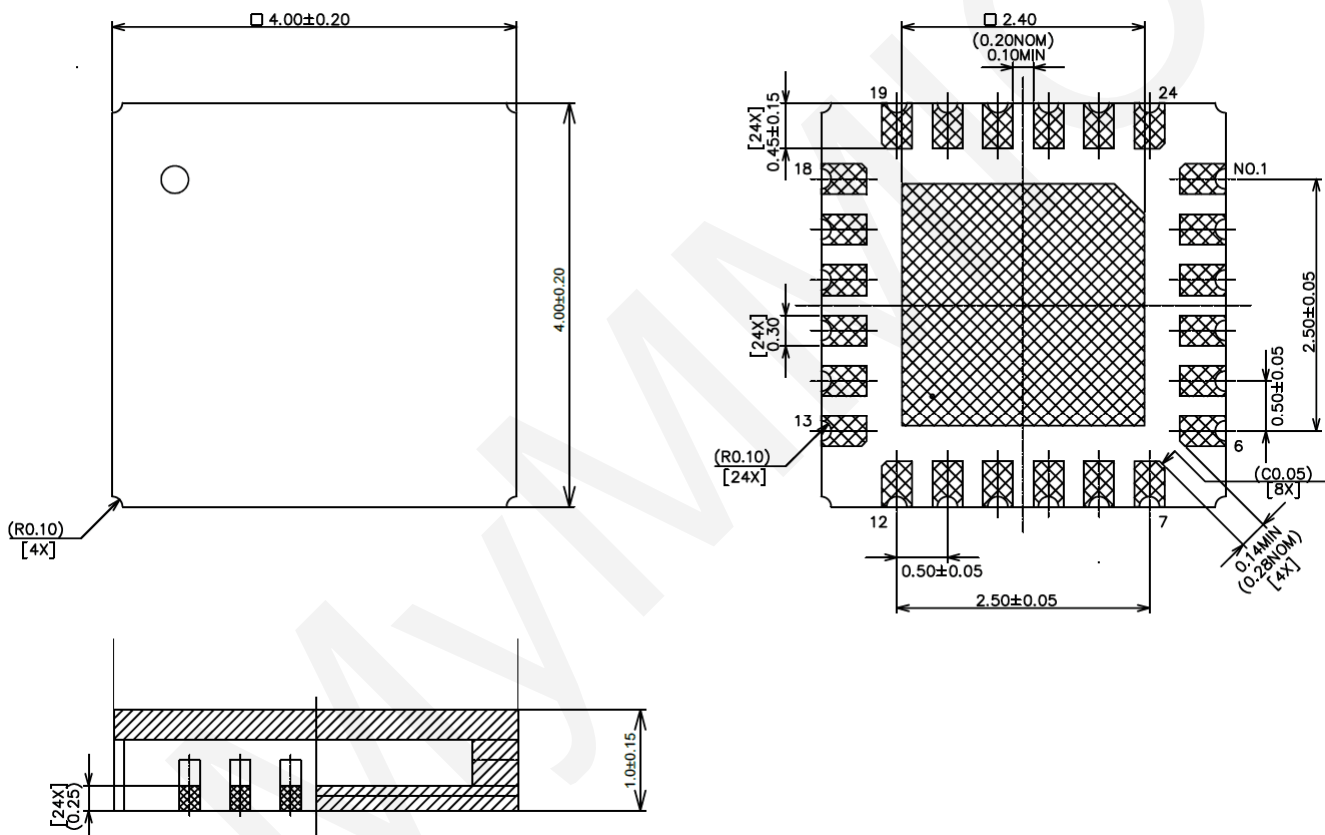
- The chips should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 °C. Do not allow the chip to exceed 20 seconds at temperatures above 320 °C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 10-20GHz

Pin description(QFN)

Pad number	Functional symbols	Functional description
4	VTUNE	Tuning voltage terminal
7	SW	SW = 0V low frequency band; SW = + 5V high frequency band
12	Vcc	Power supply side, + 5V
15	RFOUT	RF signal output (internal DC blocking capacitor)
other	GND	Ground pins and large pads on the bottom surface of the package should be

Outline drawing(QFN)



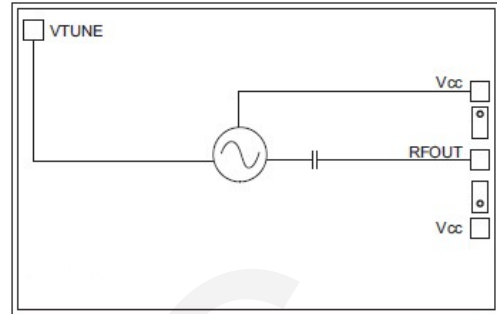
Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than 1.5um.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 17.5-21GHz

Features:

- Frequency range: 17.5GHz ~ 21GHz
- Single sideband phase noise: -86dBc / Hz @ 100KHz
- Output power: 2dBm
- Power supply: + 5V / 50mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.5 x 1.8 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-1721 is a broadband voltage-controlled oscillator chip, the frequency range covers 17GHz ~ 21GHz, single-sideband phase noise -86dBc / Hz @ 100KHz, output power + 1dBm. The MYO-1721 operates from a single + 5V supply. The MYO-1824 is available in DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	25 V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

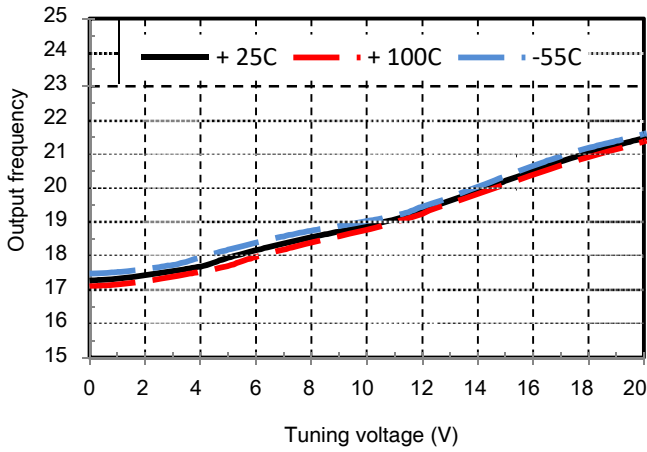
【1】 Exceeding any one of the above limits may result in permanent damage.

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

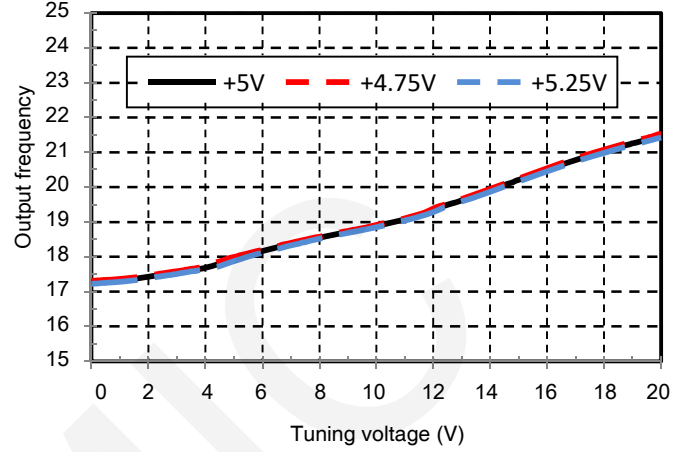
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	17.5-21			GHz
Output Power		1		dBm
Phase noise @ 100kHz		-81		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		50		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 17.5-21GHz

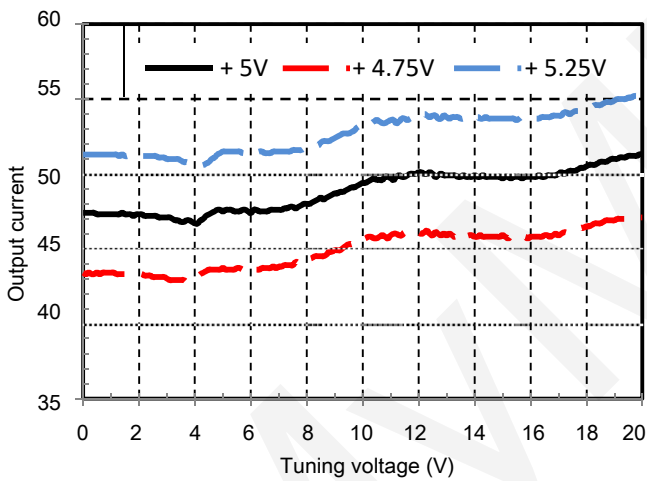
Tuning Voltage vs. Frequency $V_{cc} = +5V$



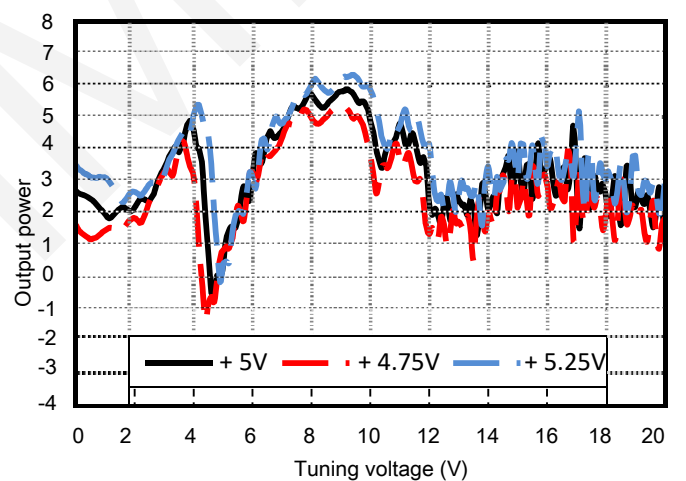
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



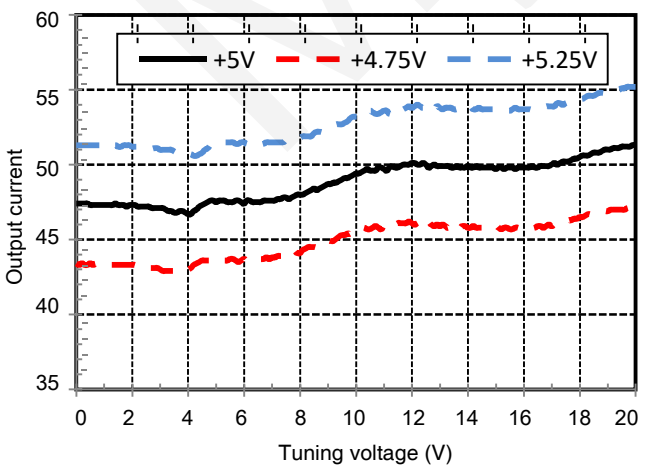
Tuning Voltage vs. Temperature $V_{cc} = +5V$



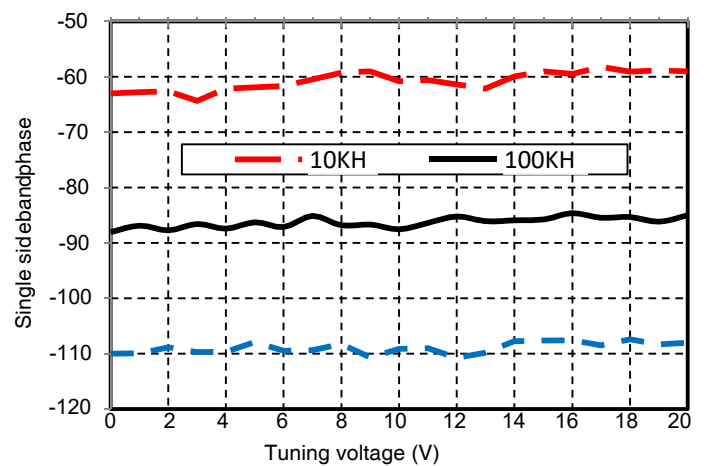
Output Power vs. Tuning Voltage



Output current vs. voltage

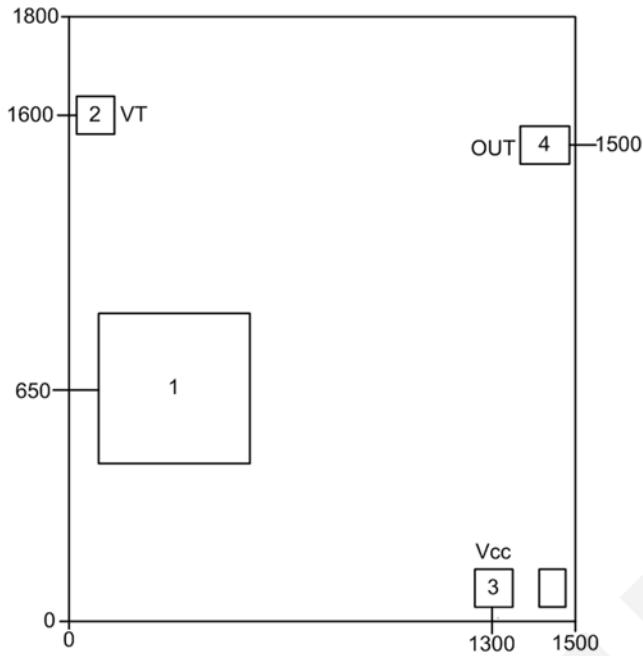


Tuning voltage vs. single-sideband phase noise $T = +25^{\circ}C$



GaAs MMIC Voltage Controlled Oscillator Chip, 17.5-21GHz

Outline drawing



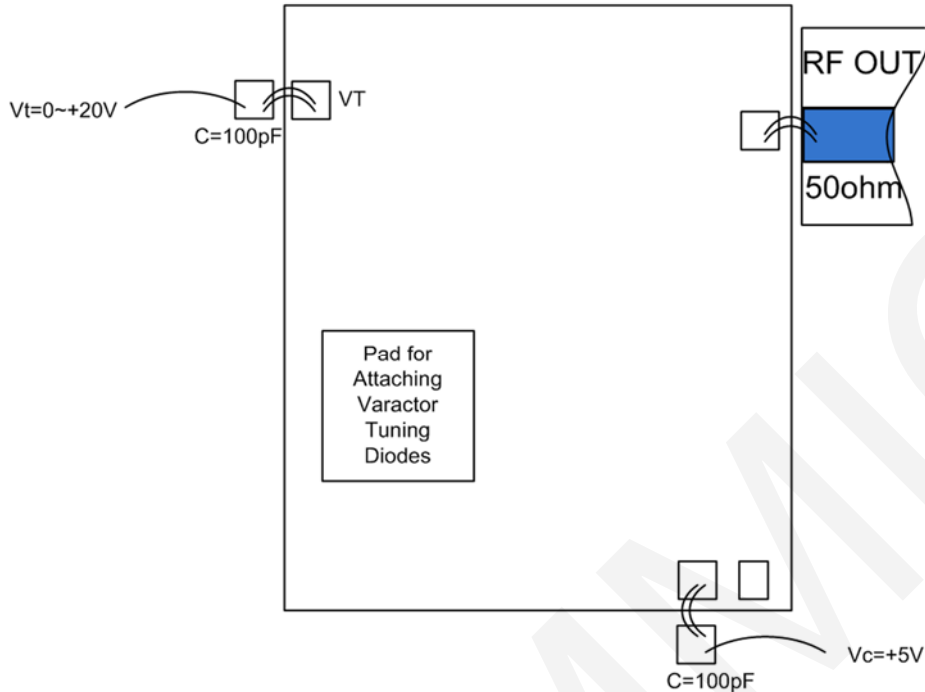
【2】 The figures are in microns

Pad description(DIE)

Pad number	Functional symbols	Functional description
1	-	Varactor diodes are bonded
2	VT	Voltage tuning port
3	Vcc	Voltage supply port
4	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 17.5-21GHz

Recommended assembly drawing



Notes

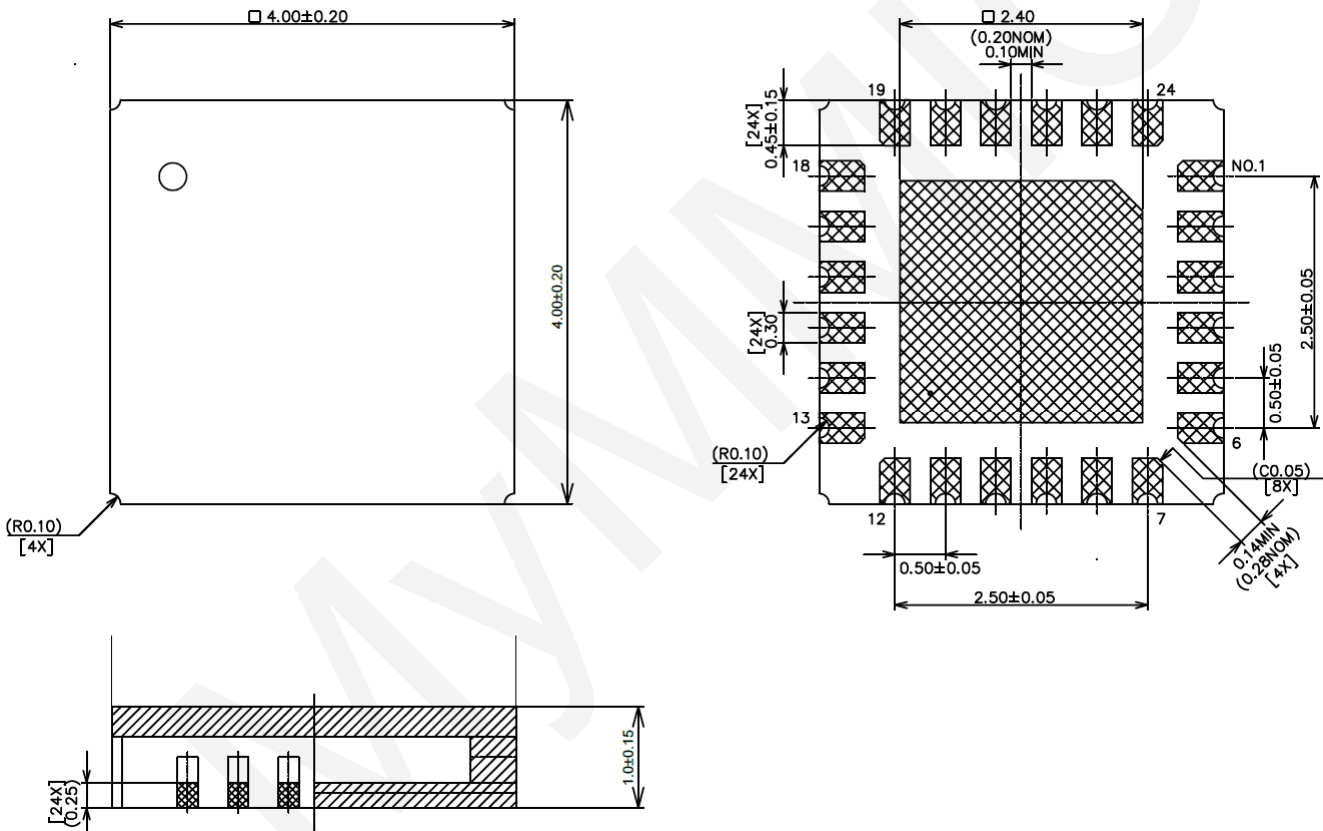
- The chips should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 ° C. Do not allow the chip to exceed 20 seconds at temperatures above 320 ° C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 17.5-21GHz

Pin Definition (QFN)

Pin number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

Outline drawing(QFN)



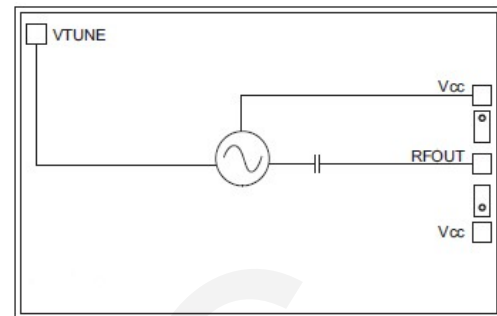
Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than 1.5um.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 18.5-24GHz

Features:

- Frequency range: 18.5GHz ~ 24GHz
- Single sideband phase noise: -81dBc / Hz @ 100KHz
- Output power: 1dBm
- Power supply: + 5V / 50mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.5 x 1.8 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

The MYO-1824 is a wideband voltage controlled oscillator IC with a frequency range of 18.5GHz to 24GHz and single sideband phase noise of -81dBc / Hz @ 100KHz and output power of + 1dBm. The MYO-1824 operates on a single + 5V supply. The MYO-1824 is available in DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	25 V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

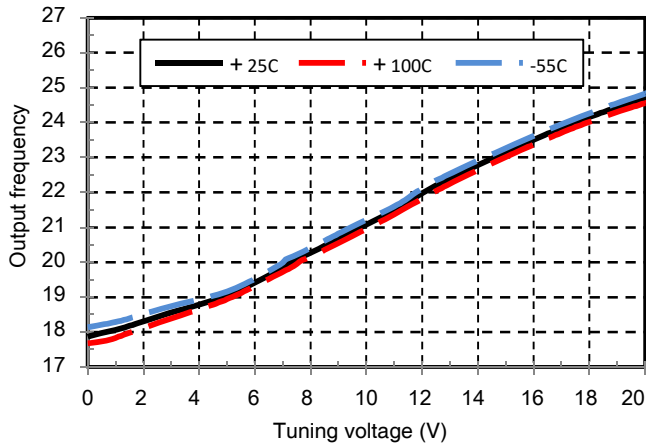
【1】 Exceeding any one of the above limits may result in permanent damage.

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

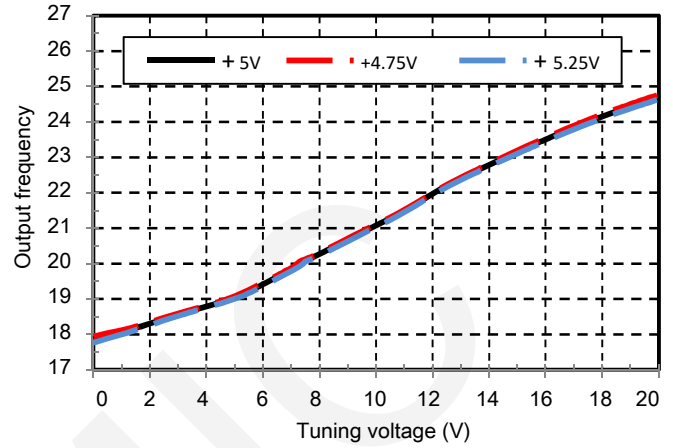
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	18.5-24			GHz
Output Power		1		dBm
Phase noise @ 100kHz		-81		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		50		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 18.5-24GHz

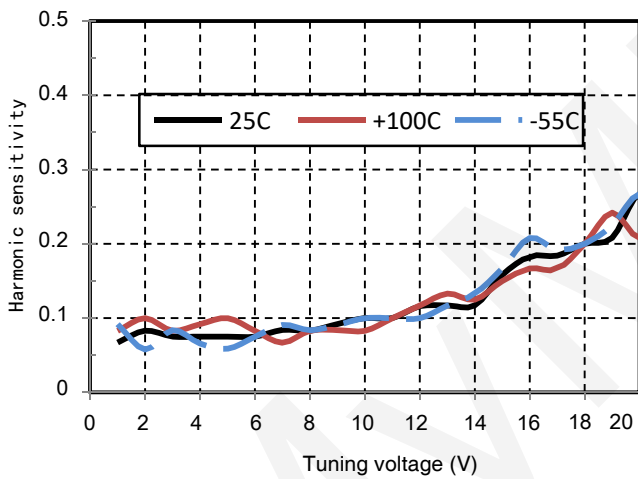
Tuning Voltage vs. Frequency $V_{cc} = +5V$



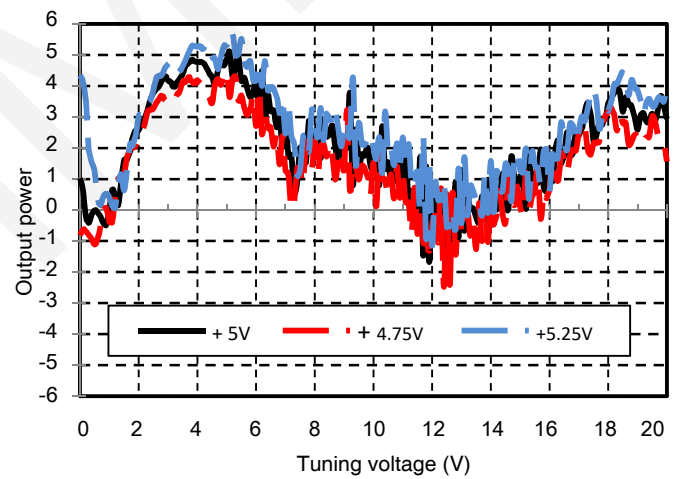
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



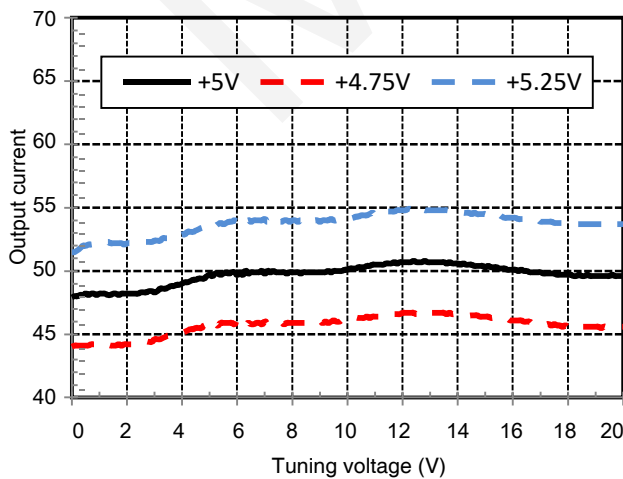
Tuning Voltage vs. Temperature $V_{cc} = +5V$



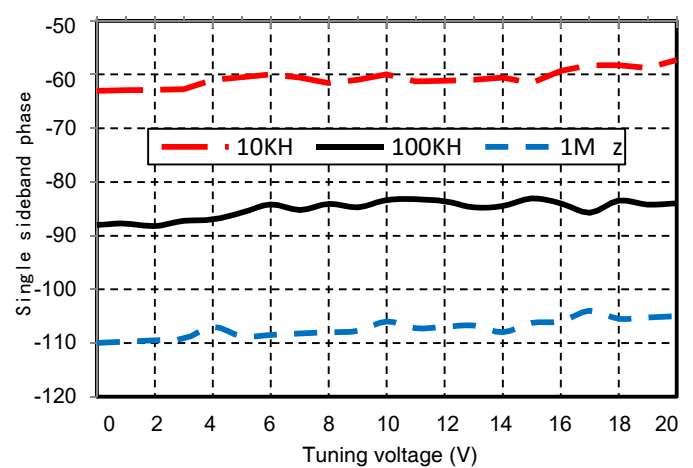
Output Power vs. Tuning Voltage



Output current vs. voltage

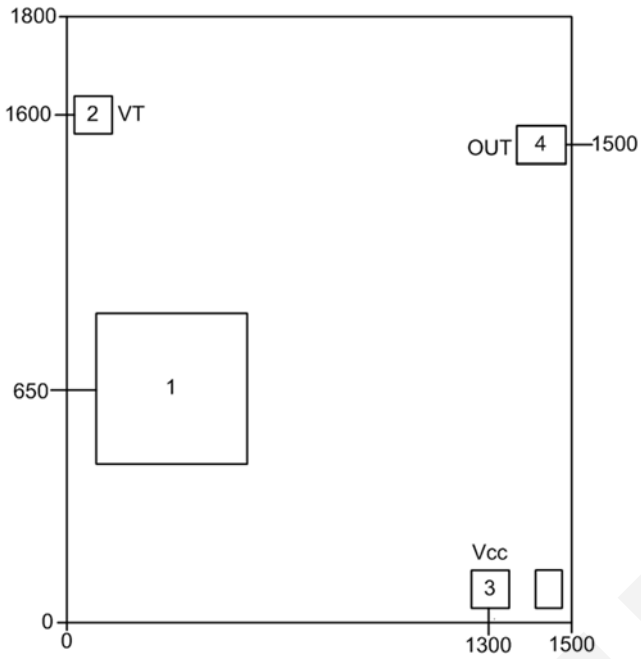


Tuning voltage vs. single sideband phase noise $T = +25^{\circ}C$



GaAs MMIC Voltage Controlled Oscillator Chip, 18.5-24GHz

Outline drawing



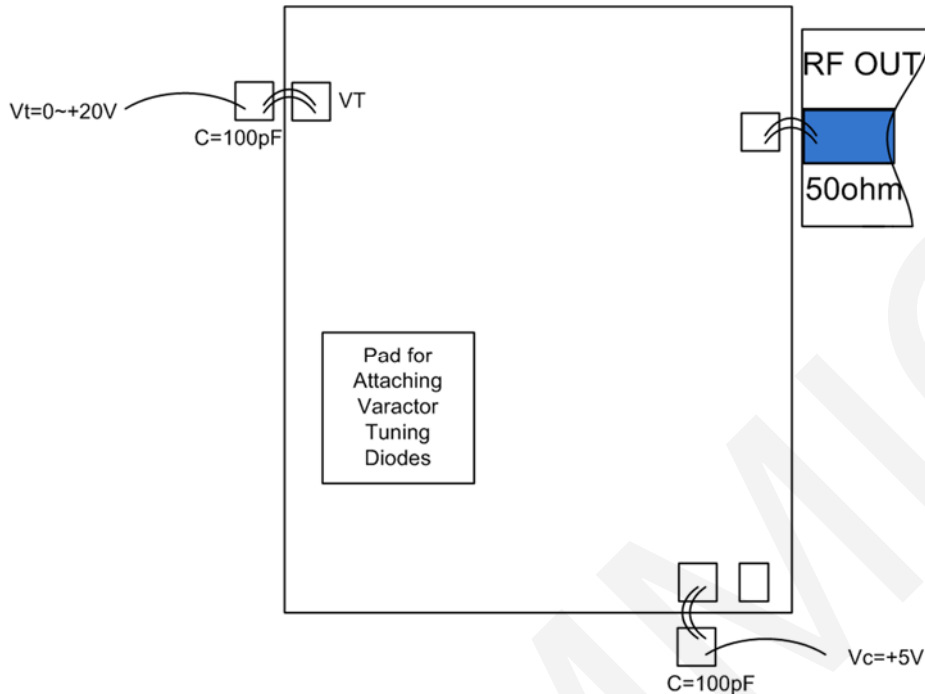
【2】 The figures are in microns

Pad description(DIE)

Pad number	Functional symbols	Functional description
1	-	Varactor diodes are bonded
2	VT	Voltage tuning port
3	Vcc	Voltage supply port
4	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 18.5-24GHz

Recommended assembly drawing

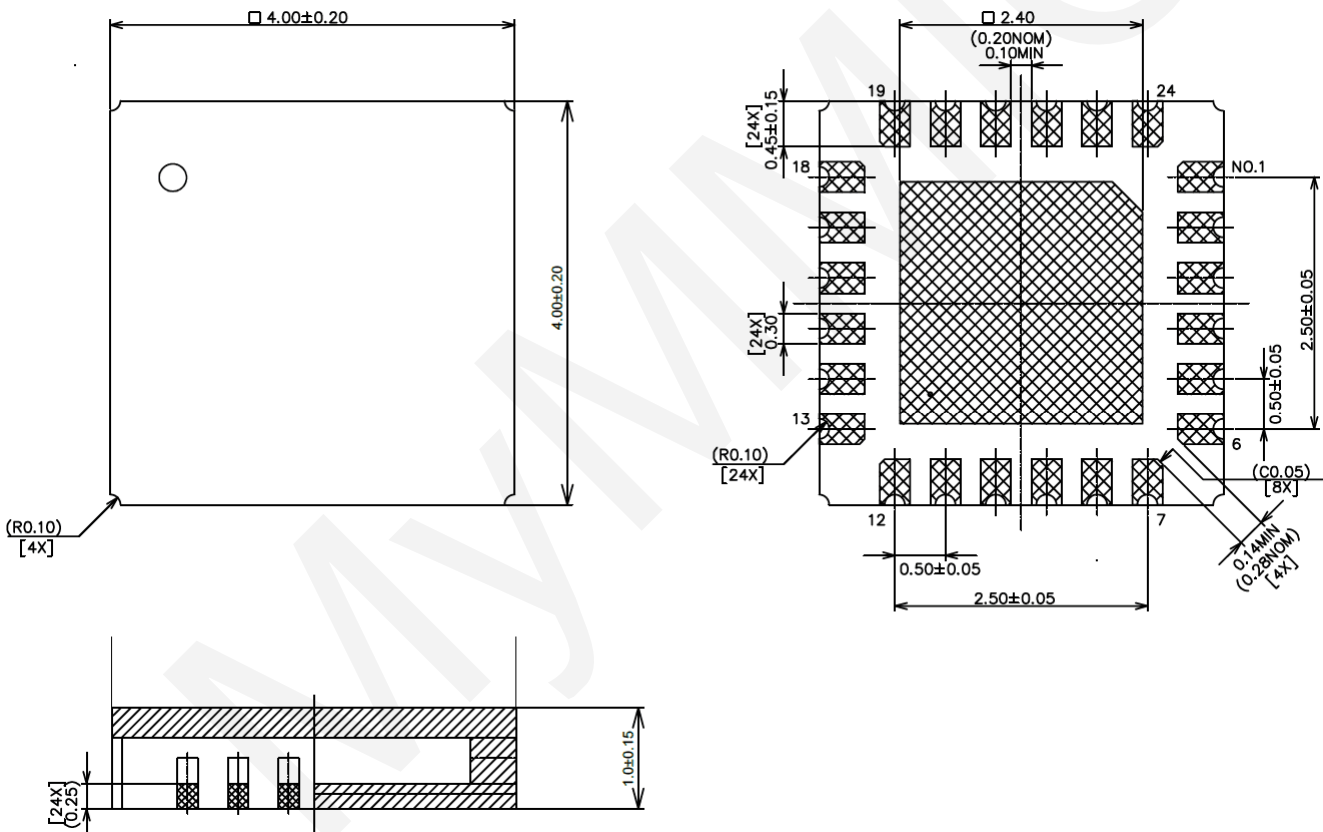


Notes

- The chips should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
- Rack mounting recommendations: Bare chip mounting can be AuSn solder eutectic sintering or conductive adhesive bonding process. The mounting surface must be clean and flat.
- Sintering Process: AuSn solder paste with a gold / tin ratio of 80/20 is recommended. Face temperature reached 255 °C, tool (vacuum chuck) temperature reached 265 °C. When the hot gas mixture (nitrogen / hydrogen ratio 90/10) is blown onto the chip, the temperature at the top of the tool is raised to 290 ° C. Do not allow the chip to exceed 20 seconds at temperatures above 320 ° C. Friction time should not exceed 3 seconds.
- Bonding process: The amount of conductive plastic adhesive to minimize, the chip placed in the mounting position, around the vaguely visible conductive adhesive, curing conditions, please follow the conductive plastic manufacturers to provide information.
- Bonding operation recommendations: spherical or wedge-type bonding are used $\Phi 0.025\text{mm}$ (1mil) gold. Thermosonic bonding temperature 150 °C. Ball bond pressure 40 ~ 50gf, wedge bond pressure 18 ~ 22gf. Use as little ultrasonic energy as possible. The bond starts at the chip's bond point and ends at the package (or substrate).

GaAs MMIC Voltage Controlled Oscillator Chip, 18.5-24GHz
Pin Definition (QFN)

Pin number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

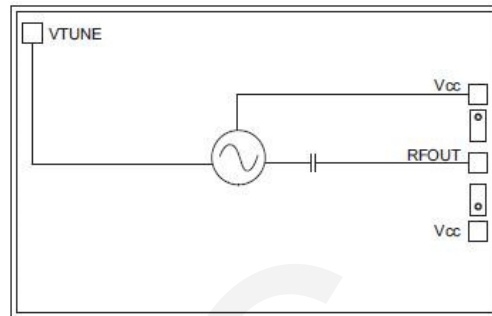
Outline drawing(QFN)

Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than $1.5\mu\text{m}$.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.

GaAs MMIC Voltage Controlled Oscillator Chip, 19-26GHz

Features:

- Frequency range: 19GHz ~ 26GHz
- Single sideband phase noise: -88dBc / Hz @ 100KHz
- Output power: + 1dBm
- Power supply: + 5V / 50mA
- 50Ohm DC output
- 100% on-chip test
- Chip size: 1.5 x 1.8 x 0.01mm / 4 x 4 x 1mm
- Package: DIE / QFN



Product Description:

MYO-1926 is a broadband voltage-controlled oscillator chip, the frequency range covers 19GHz ~ 26GHz, single sideband phase noise -88dBc / Hz @ 100KHz, output power + 1dBm. The MYO-1926 operates on a single + 5V supply. The MYO-1926 is available in DIE and 4x4mmQFN standard packages.

Absolute Max. Ratings

Maximum supply voltage	5.5 V.
The maximum ESC voltage	-0.5V ~ 25V
Operating temperature	-55 °C ~ +125 °C
storage temperature	-65 °C ~ + 150 °C

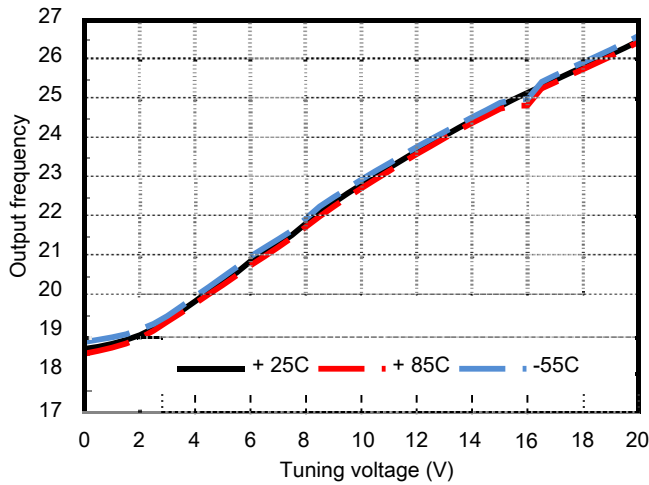
[1] Exceeding any one of the above limits may result in permanent damage.

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

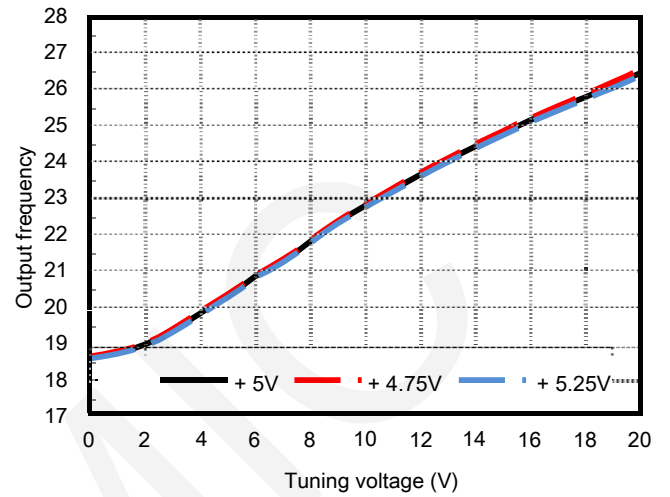
Parameter	Minimum	Typical value	Maximum	unit
Frequency Range	19-26			GHz
Output Power		1		dBm
Phase noise @ 100kHz		-88		dBc / Hz
Tuning voltage	0	-	20	V
Supply current		50		mA
Tuning terminal leakage current		25		uA
2nd harmonic suppression		-15		dBc

GaAs MMIC Voltage Controlled Oscillator Chip, 19-26GHz

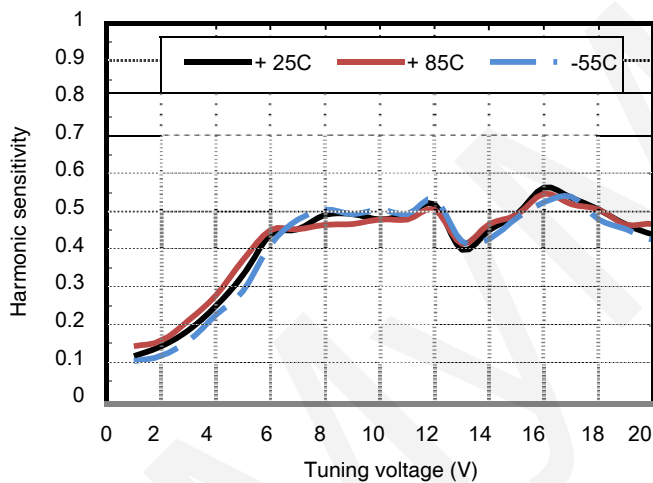
Tuning Voltage vs. Frequency $V_{cc} = +5V$



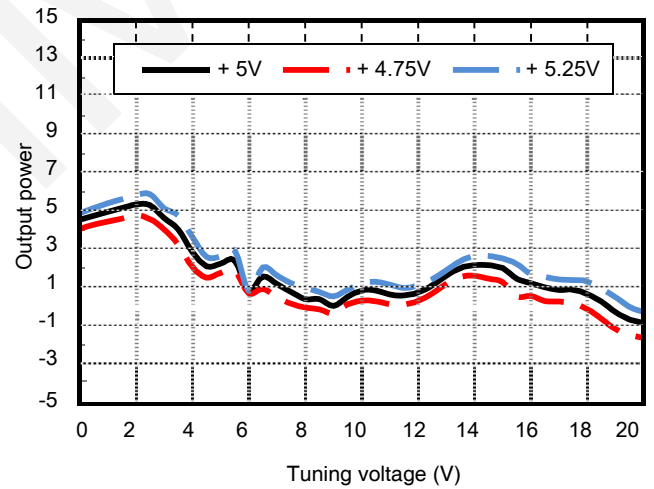
Tuning Voltage vs. Frequency $T = +25^{\circ}C$



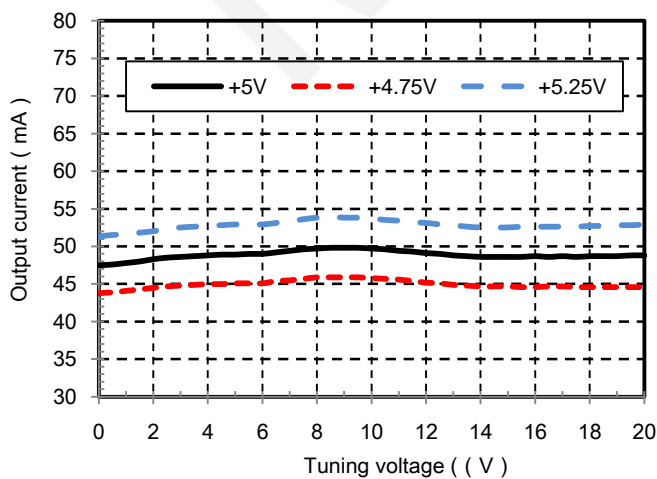
ESC sensitivity vs. tuning voltage, $V_{cc} = +5V$



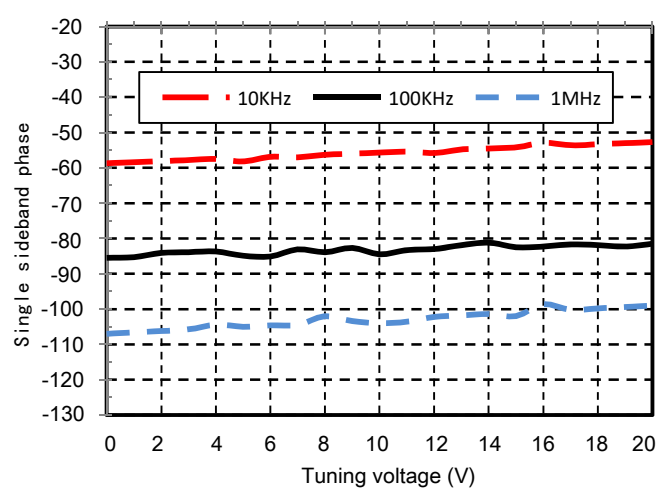
Tuning voltage versus power



Output Current vs. Tuning Voltage

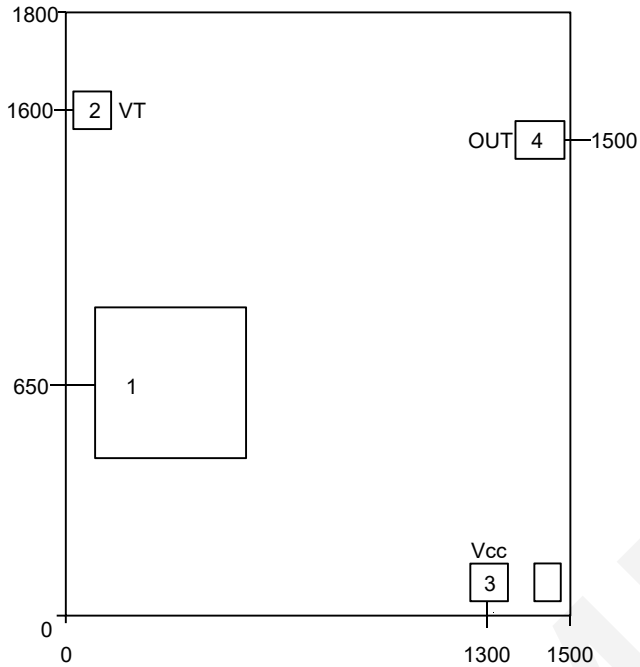


Tuning Voltage vs. Single Sideband Phase Noise $T = +25^{\circ}C$



GaAs MMIC Voltage Controlled Oscillator Chip, 19-26GHz

Outline Drawing



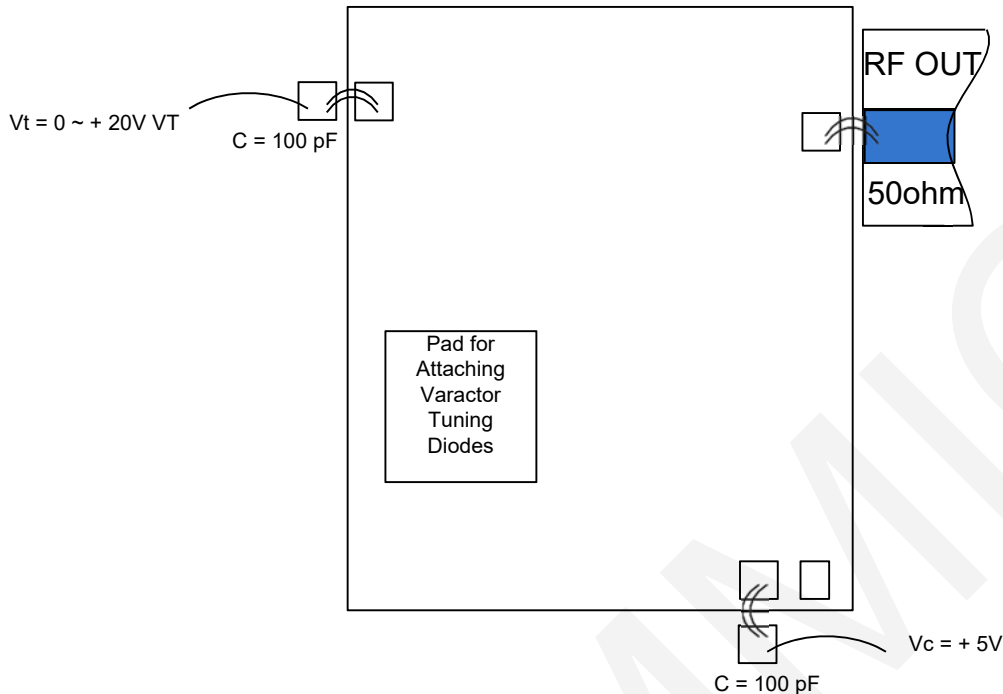
【2】 The figures are in microns

Pad description

Pad number	Functional symbols	Functional description
1	-	Varactor diodes are bonded
2	VT	Voltage tuning port
3	Vcc	Voltage supply port
4	RF OUT	RF output port
bottom	GND	Ground

GaAs MMIC Voltage Controlled Oscillator Chip, 19-26GHz

Recommended assembly drawing



Notes

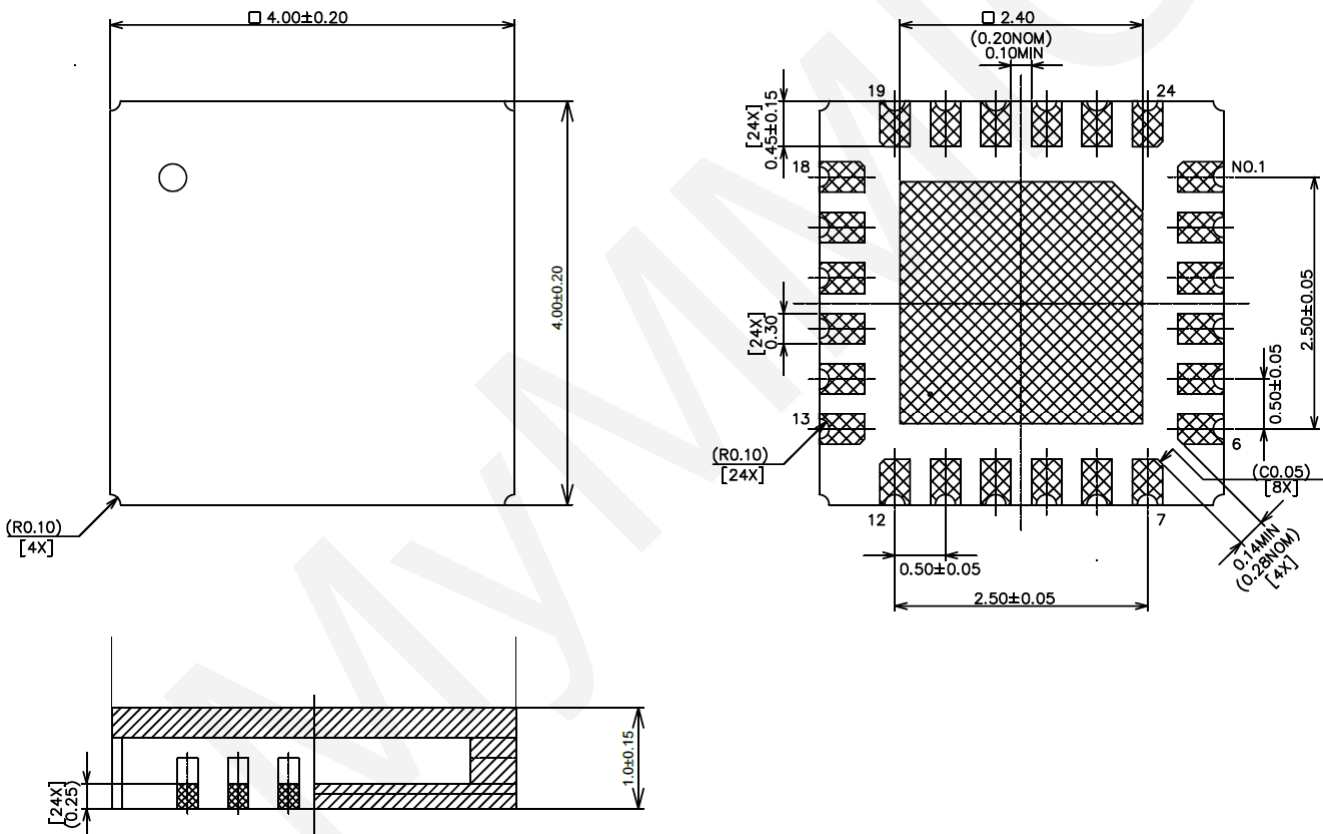
- The Dies should be stored in antistatic containers and stored under nitrogen.
- Do not attempt to clean the bare chip surface wet chemical methods.
- Please strictly comply with ESD protection requirements, to avoid damage to the bare chip static electricity.
- Routine Operation: Use precision tip tweezers to pick up the bare chip. Avoid tools or fingers touching the surface of the chip during operation.
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GaAs MMIC Voltage Controlled Oscillator Chip, GHz

Pin description(QFN)

Pad number	Functional symbols	Functional description
1 - 3, 5 - 11, 13, 17 - 24	NC	Dangling pin, can be grounded
15	RFOUT	RF signal output (internal DC blocking capacitor)
12	Vcc	Power supply side, + 5V
4	VTUNE	Tuning voltage terminal
14, 16	GND	Ground pins and large pads on the bottom surface of the package should be

Outline drawing(QFN)



Notes

- Shell Description:
- Unit: mm.
- Shell material: alumina ceramic.
- Pin surface coating: nickel gold, gold layer thickness greater than $1.5\mu\text{m}$.
- Bottom GND PAD and NC pins for heat sink are connected.
- The package is suitable for reflow soldering process.