泰莱微波
Talent Microwave

Suzhou Talent Microwave,Inc
sales@talentmw.com
www.talentmw.com

D-Band X6 MMIC Multiplier

X6/110-170GHz/0dBm Output Power

Model: TLRDX-2319A

TLRDX-2319A is a D-band broadband sextupler chip which operates from 110GHz to 170 GHz.When the input power is 8dBm to 12dBm, the typical value of the in-band output power is 0dBm, and the typical value of the adjacent sub-harmonic suppression is 25dBc.

Features:

- Output Frequency Range: 110-170GHz
- Input Power: 8~12dBm
- Output Power: 0dBm Typ
- Harmonics: -25dBc
- Chip area: TBD

Electrical Characteristics:

Parameter		Min	Typ	Max	Units
Output Frequency		110		170	GHz
Output Power		-3	0	3	dBm
Input Frequency		18.3		28.3	GHz
Input Power		8	10	12	dBm
Multiply Factor			6		
Harmonics Suppression	5 x F0	25			dBc
	7 x F0	25			
Input Ruturn Loss			-10		dB
Output Ruturn Loss			-8		dB
Drain Voltage			3		V
Gate Voltage			-0.2		V
DC Power Consumption			280		mW

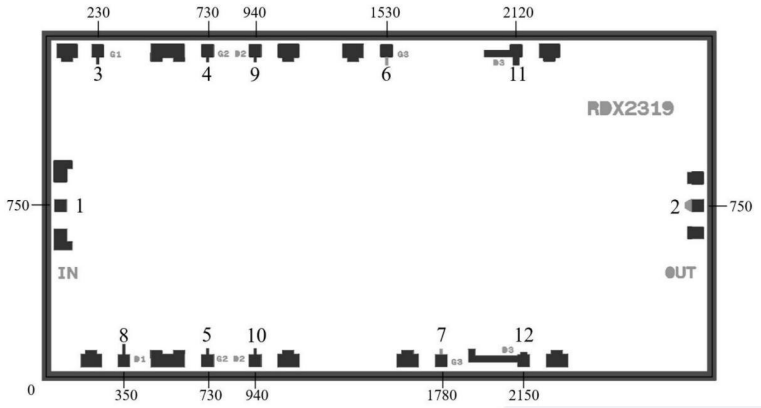
Suzhou Talent Microwave,Inc
sales@talentmw.com
www.talentmw.com

Absolute Maximum Ratings:

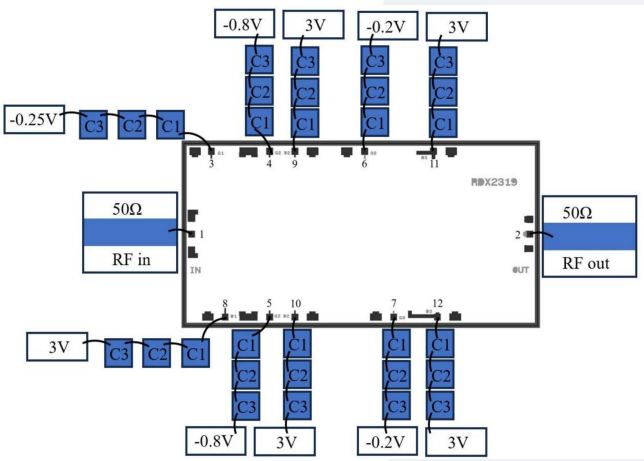
Parameter	Value
Input Power	14dBm
Positive Drain Voltage	4V
Negative Gate Voltage	-1V
Operating Temperature	-55℃ ~ +85℃
Non-operating Temperature	-65℃ ~ +150℃

Outline and Port size:

Unit: μm



Suggested Assembly Drawing:



Notes:
The capacitance value of peripheral capacitance C1 is 100 PF. C2 is 10000 pF and C3 is 1uF. C1 it is recommended to use a single-layer capacitor and try to be close to the bonding point of the chip.

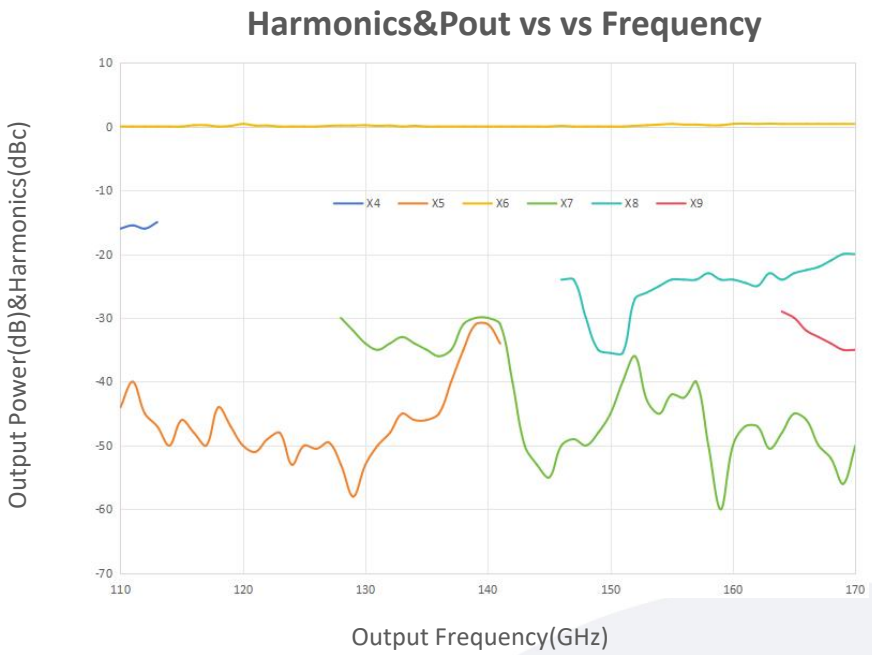
Suzhou Talent Microwave,Inc
sales@talentmw.com
www.talentmw.com

Definition of Bonding Point:

PAD	Symbol	Description	Dimension(μm²)	Opreating Voltage
1	RFin	50 Ohm, open circuit for DC	50x50	
2	RFout	50 Ohm, open circuit for DC	50x50	
3	VG1	Gate voltage,Need 100pF and 10000pF bypass capacitor.	50x50	-0.25V
4	VG2	Gate voltage,Need 100pF and 10000pF bypass capacitor.	50x50	-0.8V
5	VG2	Gate voltage,Need 100pF and 10000pF bypass capacitor.	50x50	-0.8V
6	VG3	Gate voltage,Need 100pF and 10000pF bypass capacitor.	50x50	-0.2V
7	VG3	Gate voltage,Need 100pF and 10000pF bypass capacitor.	50x50	-0.2V
8	VD1	Drain voltage,Need 100pF and 10000pF bypass capacitor.	50x50	3V/30mA
9	VD2	Drain voltage,Need 100pF and 10000pF bypass capacitor.	50x50	3V/1mA
10	VD2	Drain voltage,Need 100pF and 10000pF bypass capacitor.	50x50	3V/1mA
11	VD3	Drain voltage,Need 100pF and 10000pF bypass capacitor.	50x50	3V/95mA
12	VD3	Drain voltage,Need 100pF and 10000pF bypass capacitor.	50x50	3V/155mA

Suzhou Talent Microwave,Inc
sales@talentmw.com
www.talentmw.com

Typical Performance Data:



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Application Information:

1、 Storage: The chip must be placed in a container with electrostatic protection function and stored in nitrogen environment.
2、Cleaning: The bare chip must be operated and used in a purified environment. It is forbidden to use liquid detergent to clean the chip.
3、 Electrostatic protection: Please strictly comply with ESD protection requirements to avoid electrostatic damage.
4、 Routine operation: Please use vacuum chuck or precision pointed tweezers to take the chip. Avoid touching the chip surface with tools or fingers during operation.
5、 Power on sequence: when power on, apply gate voltage first and then Drain voltage; When de energizing, remove the Drain voltage first and then the gate voltage.
6、 Mounting operation: The chip can be installed by AuSn solder eutectic sintering or conductive adhesive bonding process. The installation surface must be clean and flat, and the gap between the chip and the input / output RF connecting line substrate shall be as small as possible.
Sintering process: 80 / 20 AuSn shall be used for sintering. The sintering temperature shall not exceed 300 ℃, the sintering time shall be as short as possible, not more than 20 seconds, and the friction time shall not exceed 3 seconds.
Bonding process: The dispensing amount of conductive adhesive shall be minimized during bonding, and the curing conditions shall refer to the data provided by the conductive adhesive manufacturer.
7、 Bonding operation:
Unless otherwise specified, two bonding wires (diameter 25um gold wire) are used for RF input and output, and the bonding wire shall be as short as possible.
The thermal ultrasonic bonding temperature is 150 ℃, and the ultrasonic energy is as small as possible. The pressure of spherical bonding cleaver is 40 ~ 50gf, and the pressure of wedge bonding cleaver is 18 ~ 22gf.
8、 If you have any questions, please contact the supplier.