

Key Technical Indicators

Frequency: 14~18GHz

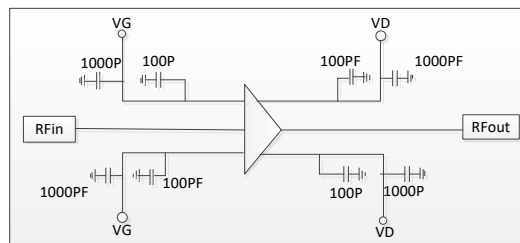
Typical small signal gain: 29dB

Typical output power: 46.5dBm@28V

Typical added efficiency: 30%

Bias: 28V, -2V (Typ.)

Dimensions: 15.25mm×15.25mm×3.5 mm

Functional Diagram**Product Introduction**

The HXN20031-F1 is a high-gain power amplifier module. The module uses positive and negative power supplies, drain voltage $V_{ds} = 28V$, gate voltage $V_{gs} = -2V$, and can provide 46.5dBm output power in 14-18GHz, power gain 21.5dB, and power added efficiency 30%. The module uses a 15.25mm×15.25mm×3.5 mm metal ceramic case package, which is suitable for high-temperature welding processes.

Absolute Maximum Ratings ($T_A = 25^\circ C$)¹

Symbol	Parameter	Value	Note
Vd	Drain voltage	32V	
Vg	Gate voltage	-10V	
Ig	Gate current	100mA	
Pin	Input signal power	30dBm	
Output VSWR	Output standing wave	5:1	
Operating Temperature range	Operating temperature	200℃	
Tstg	Storage temperature	-55~125℃	
ESD Sensitivity, Human Body Model	Anti-static grade	Class A	

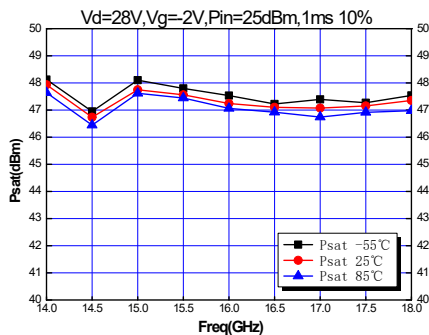
【1】 Exceeding any of these maximum limits may cause permanent damage.

Electrical Characteristics ($T_A = 25^\circ C$)

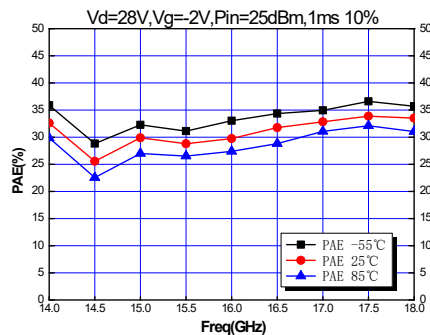
Symble	Parameter	Test conditions	Value			Unit
			Min	Typ	Max	
G	Small signal gain	Vd=28V, Vg=-2V, F: 14~18GHz tw=100us,D=10%	-	29	-	dB
Gp	Power gain (Pin=25dBm)		-	21.5	-	dB
Pout	Saturated output power (Pin=25dBm)		-	46.5	-	dBm
PAE	Power added efficiency (Pin=25dBm)		-	30	-	%

Typical Test Curve

Output power three-temperature curve

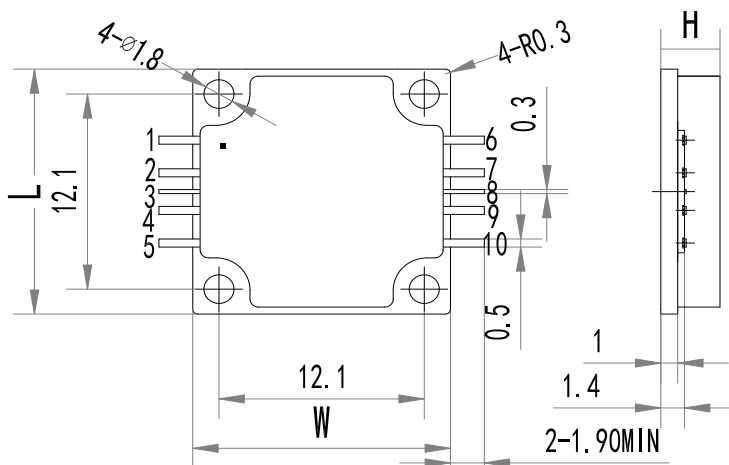


Additional efficiency three-temperature curve



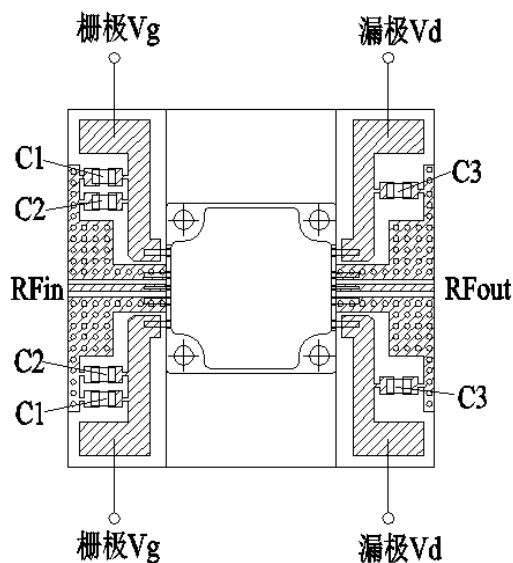
Dimensions (mm)

Symble	Value		
	Min	Typ	Max
H	3. 3	3. 50	3. 7
L	15. 1	15. 25	15. 4
W	15. 1	15. 25	15. 4



Pin Definition

Pin number	Function	Pin number	Function
1	Gate (V_G)	6	Drain (V_D)
2	Ground (GND)	7	Ground (GND)
3	RF input (RF_{in})	8	RF output (RF_{out})
4	Ground (GND)	9	Ground (GND)
5	Gate (V_G)	10	Drain (V_D)

Note:

Recommended peripheral feeding diagram

Marking number	Recommended capacitance
C1	10uF
C2	1uF
C3	1000pF

1. When using the product, the RF input and output terminals must adopt the transmission line structure shown in the figure;
2. The voltage during power-on should meet the recommended operation voltage in the manual;
3. When the module is in continuous wave working mode, please follow the peripheral feeding diagram and install a μ -level filter capacitor near the Vd port;
4. If the module feeding circuit needs to use a voltage regulator for voltage conversion, please ensure that the selected voltage regulator has an overcurrent capacity greater than the recommended working current of the module;
5. Pay attention to the timing of negative power first and then positive power during the power-on process;
6. Pay attention to the current limiting protection during use;
7. Pay attention to good grounding when using;
8. Take effective anti-static measures during use, storage and transportation;
9. The working temperature must be strictly controlled within the temperature range recommended in the manual;
10. If there is a problem with the product, it should be sent back to the original manufacturer for repair and the cover must not be opened by yourself.