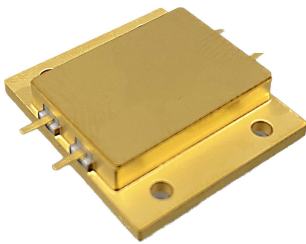
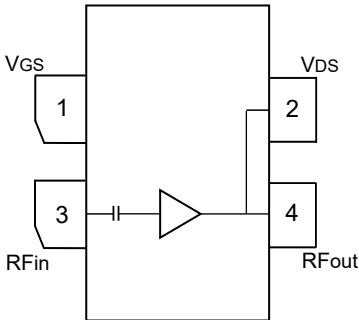


0.6-6GHz GaN RF Power Transistor



Features

- Frequency Range: 0.6 - 6.0 GHz
- 50 Ω impedance matching, easy for cascading
- Operating Voltage: 28 V (Typ.)
- 100% RF Test
- Excellent Thermal Stability
- RoHS Compliant



PIN Designation(Front view)

Notched corner indicates signal input
Input has built-in isolation

Overview

The HXN42024 is a high-power, internally matched GaN power transistor. It operates in the frequency range of 0.6 to 6.0 GHz and provides optimal power and gain performance in a 50 Ω system under continuous wave operation at saturation power.

Typical Performance¹

Operating Frequency Range (MHz)	Output Power ² (dBm)	Output Efficiency ² (%)	Power Gain ² (dB)
600	44.6	55.9	9.1
1000	45.2	58.2	9.7
1500	45.2	47.0	9.7
2000	45.9	56.7	10.4
2500	45.6	46.2	10.1
3000	45.1	41.3	9.6
3500	46.2	50.4	10.7
4000	45.7	45.4	10.2
4500	46.0	48.0	10.5
5000	45.8	45.7	10.3
5500	45.5	44.3	10.0
6000	45.4	42.0	9.9

¹ Based on test data from typical application schematics, for reference only.

² Test conditions: VDS = 28 V, IDQ = 400 mA, Continuous Wave, Input Power Pin = 35.5 dBm.

Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Breakdown Voltage	V_{DSS}	150	V
Gate-Source Voltage	V_{GS}	-10 ~ +2	V
Drain-Source Voltage	V_{DS}	0 ~ +28	V
Maximum Forward Gate Current	I_{GMAX}	8.3	mA
Storage Temperature	T_{STG}	-65 ~ +150	°C
Channel Temperature	T_{CH}	225	°C

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance	R_{thjc}	TBD	°C/W

Electrical Specifications (TA = 25°C)

DC Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Drain-Source Leakage Current ($V_{GS} = -10\text{ V}$, $V_{DS} = 150\text{ V}$)	I_{DSS}	-	-	8.3	mA
Drain-Source Breakdown Voltage ($V_{GS} = -10\text{ V}$, $I_D = 8.3\text{ mA}$)	$V_{(BR)\ DSS}$	150	-	-	V
Gate Threshold Voltage ($V_{DS} = 28\text{ V}$, $I_D = 8.3\text{ mA}$)	$V_{GS\ (TH)}$	-4.0	-2.9	-1.0	V
Gate Static Bias Voltage ($V_{DS} = 28\text{ V}$, $I_D = 400\text{ mA}$)	$V_{GS\ (Q)}$	-	-2.7	-	V

RF Characteristics (Typical performance @6000 MHz¹)

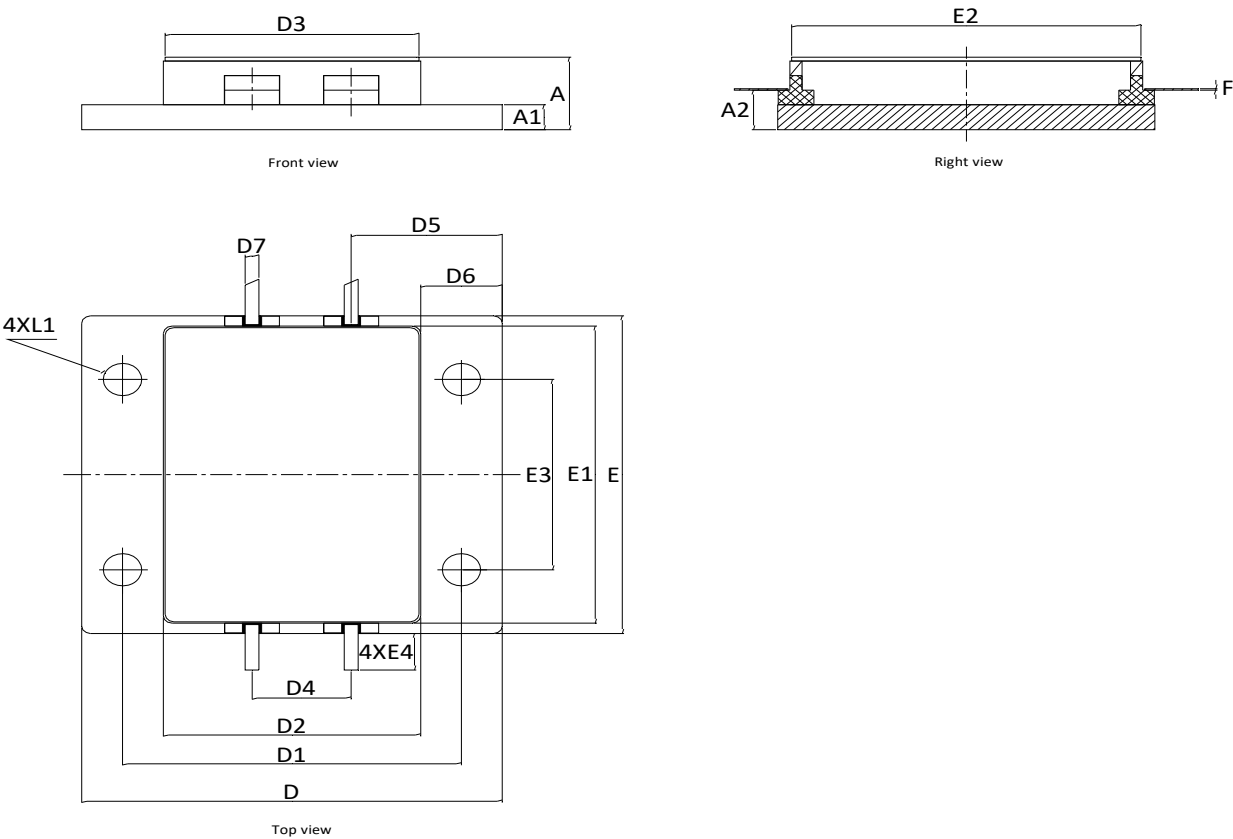
Parameter	Symbol	Min	Typ	Max	Unit
Peak Output Power	P_{sat}	-	TBD	-	dBm
Drain Efficiency	η_D	-	TBD	-	%
Power Gain	G_P	-	TBD	-	dB

¹ Based on HXN42024 test fixture, test conditions: $V_{DS} = 28\text{ V}$, $I_{DQ} = 400\text{ mA}$, Continuous Wave

Load Adaptability

Parameter	Result
VSWR 5:1 Operating Condition: $V_{DS} = 28\text{ V}$ 25 W Output Continuous Wave	TBD

Physical Dimensions



No.	Inch			Milimeter		
	Min	Typ	Max	Min	Typ	Max
A	0.19	0.19	0.20	4.73	4.95	5.17
A1	0.06	0.07	0.07	1.65	1.70	1.75
A2	0.10	0.11	0.11	2.57	2.70	2.83
D	0.95	0.95	0.96	24.07	24.20	24.33
D1	0.77	0.77	0.77	19.45	19.50	19.55
D2	0.58	0.58	0.59	14.67	14.80	14.93
D3	0.57	0.57	0.58	14.57	14.60	14.63
D4	0.22	0.22	0.23	5.57	5.70	5.83
D5	0.34	0.34	0.35	8.57	8.70	8.83
D6	0.18	0.19	0.19	4.60	4.70	4.80
D7	0.03	0.03	0.04	0.70	0.80	0.90
E	0.85	0.85	0.86	21.50	21.70	21.90
E1	0.79	0.80	0.80	20.17	20.30	20.43
E2	0.79	0.79	0.79	20.07	20.10	20.13
E3	0.51	0.51	0.51	12.95	13.00	13.05
E4	0.09	0.10	0.11	2.20	2.50	2.80
F	0.00	0.00	0.01	0.10	0.10	0.15
L1	0.08	0.09	0.09	2.15	2.20	2.25