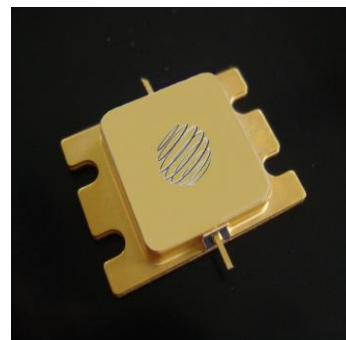


NGN4550L1S-M120 is a Gallium Nitride RF power transistor internally matched to 50Ω, developed for 4.5-5.0 GHz high power amplifiers and suitable for use in pulsed radar applications. This transistor has hermetically sealed package to enable use in applications with high reliability requirements.

Features

- 130W typical peak power
- 11dB power gain
- 50Ω input and output impedance
- 50% efficiency



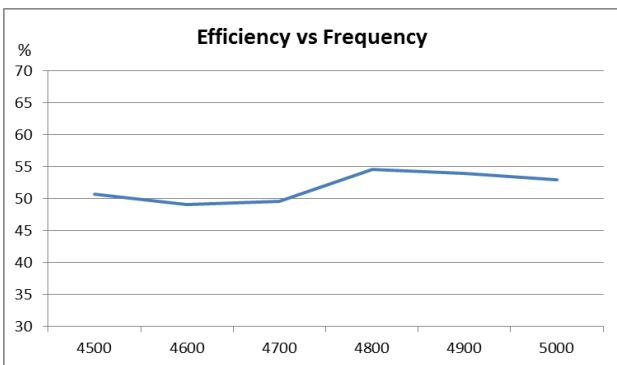
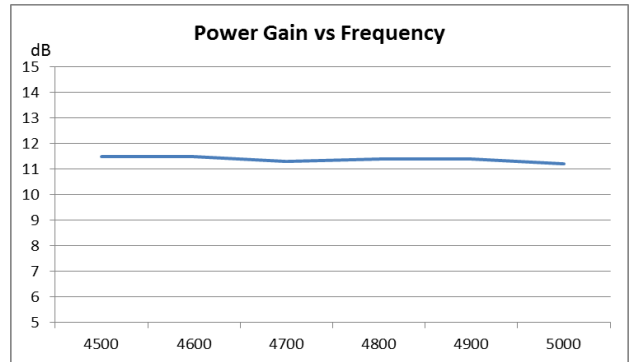
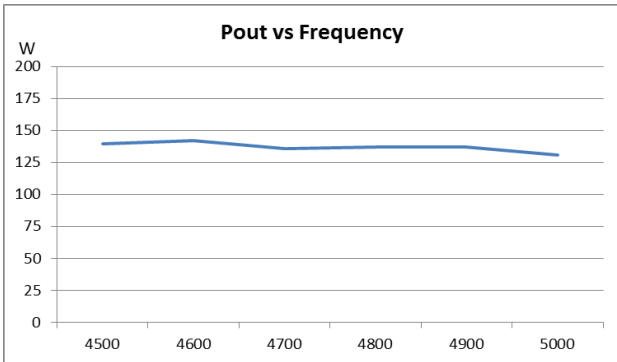
Characteristics	Symbol	Min.	Typ.	Max.	Units	Conditions
DC Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$		-3.0		V _{DC}	$V_{DS} = 10\text{ V}, I_D = 28.8\text{ mA}$
Gate Quiescent Voltage	$V_{GS(Q)}$		-2.7		V _{DC}	$V_{DS} = 32\text{ V}, I_D = 100\text{ mA}$
Drain Current	I_{DSS}		28		A	$V_{DS} = 6.0\text{ V}, V_{GS} = 2.0\text{ V}$
Drain-Source Breakdown Voltage	V_{BR}	100			V _{DC}	$V_{GS} = -8\text{ V}, I_D = 28.8\text{ mA}$
RF Characteristics ($V_{DD} = 32\text{ V}, T_c = 25^\circ\text{C}, F = 4.5\text{-}5.0\text{ GHz}, I_{DQ} = 100\text{ mA}, \text{Pulse} = 200\mu\text{s}, 10\%$)						
Power Gain	G_{LS}		11		dB	$P_{in} = 40\text{ dBm}$
Power Output	P_{SAT}		130		W	$P_{in} = 40\text{ dBm}$
Input Return Loss	S_{11}		-5		dB	$P_{in} = 10\text{ dBm}$
PAE	η	-	50	-	%	$P_{in} = 40\text{ dBm}$
Output Mismatch	VSWR			5:1	ψ	

Maximum Ratings	Symbol	Rating	Units	Conditions
Parameter				
Drain-Source Voltage	V_{DSS}	84	V _{DC}	25°C
Gate-Source Voltage	V_{GS}	-10, +2	V _{DC}	25°C
Storage temperature	T_{STG}	-65 - 150	°C	
Operating Junction Temperature	T_J	225	°C	
Maximum Drain Current	I_{DMAX}	12	A	25°C
Maximum Forward Gate Current	I_{GMAX}	28	mA	25°C
Thermal Resistance Junction to Case	$R_{\theta JC}$	1.3	°C/W	
Duty cycle	DC	10	%	

Subject to change without notice.

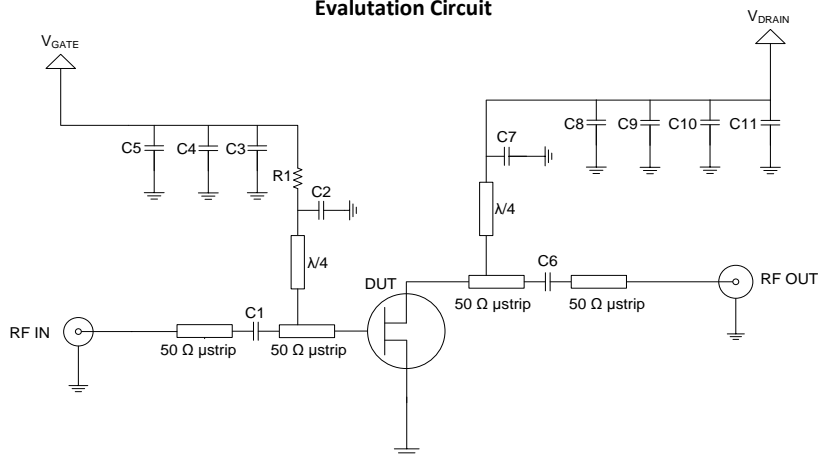
Typical Performance

Vdd=32V, Idq=100mA, T=25°C, Pin=40dBm, DC=10%/200µs

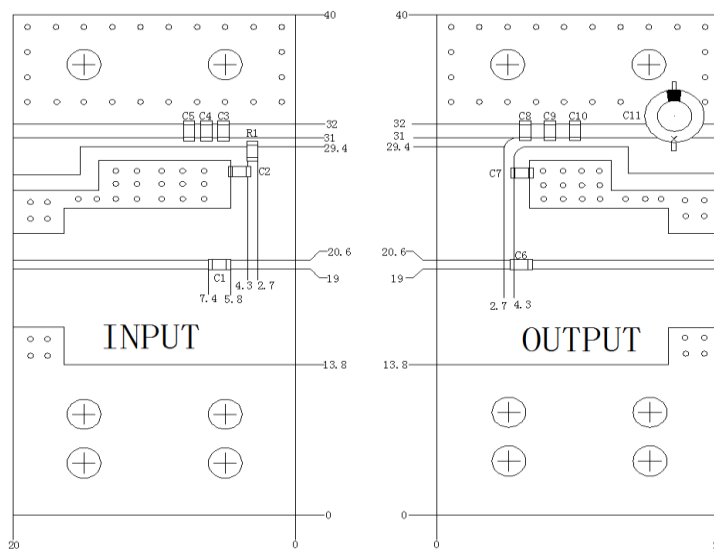


Subject to change without notice.

Evaluation Circuit

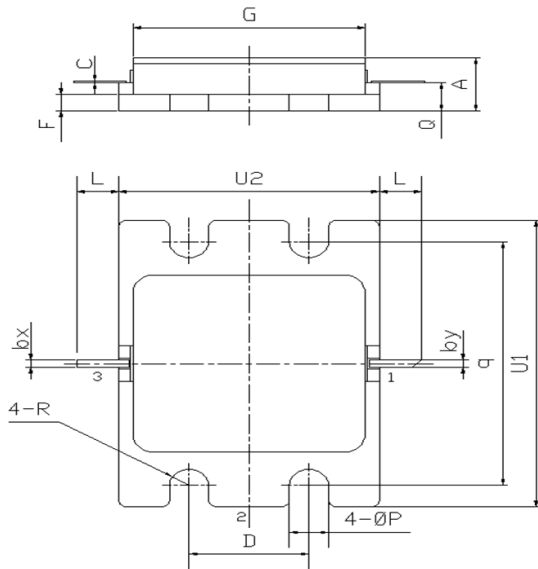


Pos.	Descr.
R	8.2Ω
C1,C2,C6,C7	1.8pF
C3,C8	20pF
C4, C9	1nF
C5, C10	1μF
C11	470 μF
PCB RO4350	$\epsilon_r=3.66$



Subject to change without notice.

Package Drawing



Item	Measure mm	
	Min	Max
A	4.05	4.5
bx	0.55	0.65
by	0.55	0.65
C	0.05	0.15
D	7.85	8.15
F	1.2	1.6
L	2.85	3.15
G	15.35	15.65
ØP	2.45	2.75
Q	2.25	2.55
q	20.2	20.6
R	1.15	1.45
U1	23.8	24.2

Subject to change without notice.