

NGN9396H1S-M120 is Gallium Nitride RF power transistor internally matched to 50Ω. It is developed primarily for use in high power pulsed radar amplifiers at 9.3-9.6GHz. This transistor has a hermetically sealed package to enable use in applications with high reliability requirements.

Features

- 120W typical peak power
- 10dB power gain
- 50Ω input and output impedance
- 38% peak efficiency



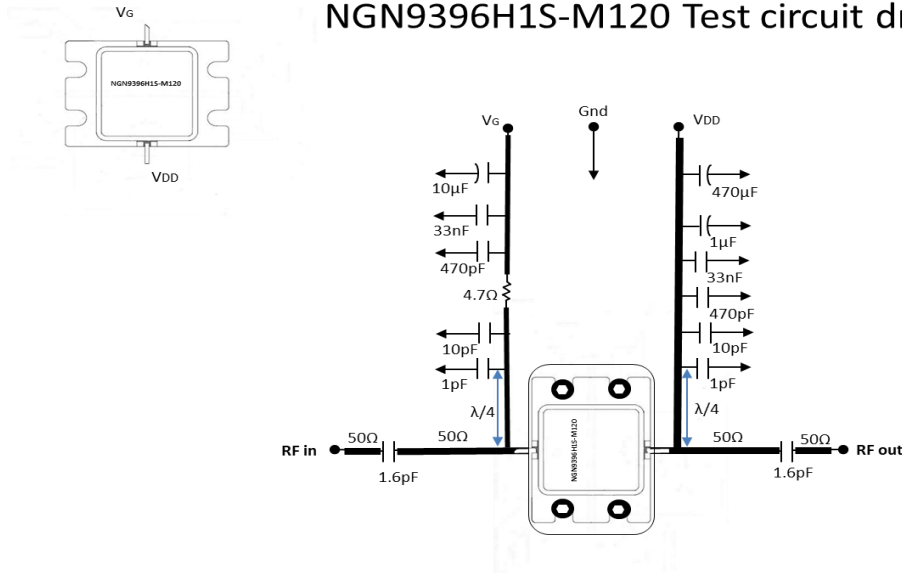
Characteristics	Symbol	Min.	Typ.	Max.	Units	Conditions
DC Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$		-3.0		V _{DC}	$V_{DS} = 10\text{ V}, I_D = 20.8\text{ mA}$
Gate Quiescent Voltage	$V_{GS(Q)}$		-2.7		V _{DC}	$V_{DS} = 50\text{ V}, I_D = 200\text{ mA}$
Saturated Drain Current	I_{DS}		20.8		A	$V_{DS} = 6.0\text{ V}, V_{GS} = 2.0\text{ V}$
Drain-Source Breakdown Voltage	V_{BR}	150			V _{DC}	$V_{GS} = -8\text{ V}, I_D = 5\text{ mA}$
RF Characteristics ($V_{DD} = 50\text{ V}, T_c = 25^\circ\text{C}, F = 9.3\text{-}9.6\text{ GHz}, 10\% \text{ duty cycle}, 200\mu\text{s}, I_{DQ} = 200\text{ mA}$)						
Power Gain	S21		10		dB	$P_{in} = 41\text{ dBm}$
Output Power	P_{SAT}		120		W	$P_{in} = 41\text{ dBm}$
Output Return Loss	S22		-10		dB	
Input Return Loss	S11		-10		dB	$P_{in} = 10\text{ dBm}$
Drain Efficiency	η		38		%	$P_{in} = 41\text{ dBm}$
Output Mismatch	VSWR			5:1	ψ	

Maximum Ratings	Symbol	Rating	Units	Conditions
Parameter				
Drain-Source Voltage	V_{DSS}	150	V _{DC}	25°C
Gate-Source Voltage	V_{GS}	-10, +2	V _{DC}	25°C
Storage temperature	T_{STG}	150	°C	
Operating Junction Temperature	T_J	225	°C	
Maximum Drain Current	I_{DMAX}	12.8	A	25°C
Maximum Forward Gate Current	I_{GMAX}	20.8	mA	25°C
Operating Case Temperature	T_{MAX}	-40 - +85	°C	
Pulse Width	PW	1	ms	
Duty cycle	DC	10	%	

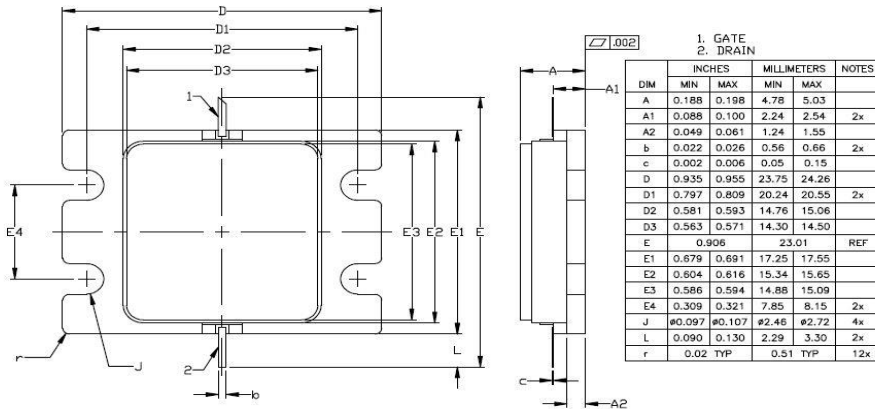
Subject to change without notice.

Drawings

NGN9396H1S-M120 Test circuit drawing



Package outline



Subject to change without notice.