



**4W, L-S BAND POWER
GaAs MESFET**

NE1069L-4B

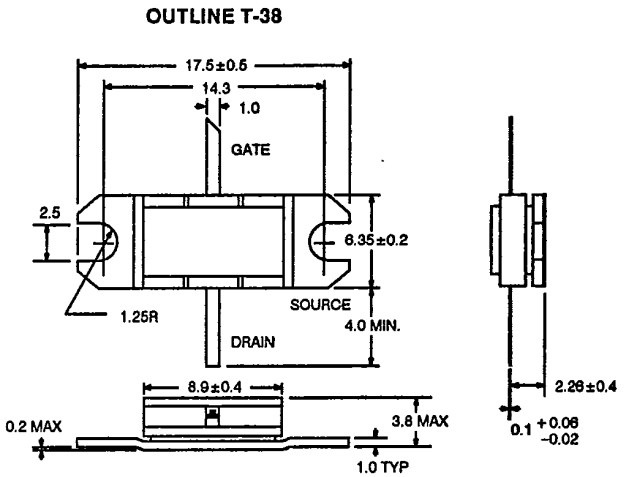
FEATURES

- CLASS A OPERATION
- HIGH POWER OUTPUT
- HIGH GAIN
- HIGH POWER ADDED EFFICIENCY
- HIGH RELIABILITY
- AVAILABILITY: Hermetic Package

DESCRIPTION

The NE1069L-4B is an unmatched N-channel power GaAs MESFET which offers high output power, high gain and high efficiency in L to S-band. The device incorporates Ti-Au metalization and silicon dioxide glassivation. The WSi (Tungsten silicide) gate is incorporated for high reliability. The gate length is 0.8 μ m for increased linear gain. To reduce thermal resistance, the devices have a PHS (Plated Heat Sink). NEC's stringent quality assurance and test procedures assure the highest reliability and performance.

OUTLINE DIMENSIONS (Units in mm)



Flange Material: Copper
Flange Plating: Ni, Au

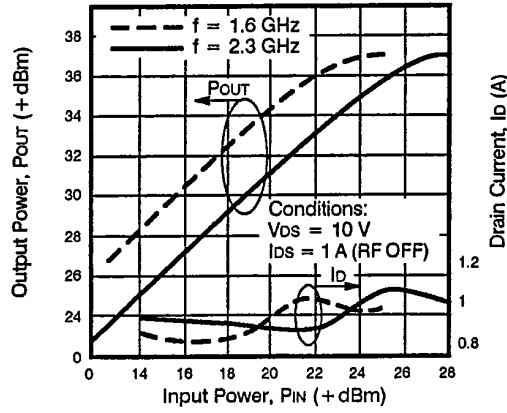
Lead Material: Kovar
Lead Plating: Ni, Au

ELECTRICAL CHARACTERISTICS (TA = 25°C)

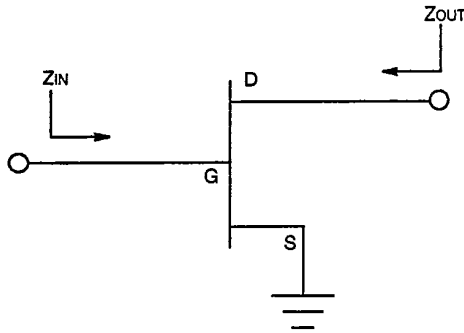
PART NUMBER			NE1069L-4B		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I _{DSS}	Saturated Drain Current, V _{DS} = 2.5 V, V _{GS} = 0	A	2.2	2.7	3.5
V _P	Pinch-off Voltage, V _{DS} = 2.5 V, I _D = 14 mA	V	-5	-3.5	-2
g _m	Transconductance, V _{DS} = 2.5 V, I _D = 10 A	mS		1000	
R _{TH}	Thermal Resistance (channel to case, T _{CH} = 125°C)	°C/W		5	6
P _{1dB}	Output Power at 1 dB G.C.P.	V _{DS} = 10 V, f = 2.3 GHz I _D = 1 A (RF OFF)	35.5 10 A mA % 37 36.5 dB	36.5 11 1.1 40 37 36.5 14.5	
G _L	Linear Power Gain				
I _D	Drain Current				
I _G	Gate Current				
η_{ADD}	Power Added Efficiency				
P _{OUT}	Output Power, P _{IN} = 27 dBm				
P _{1dB}	Output Power at 1 dB G.C.P.	V _{DS} = 10 V, f = 1.6 GHz, I _D = 1 A (RF OFF)	dBm dB	36.5 14.5	
G _L	Linear Gain				

TYPICAL PERFORMANCE CHARACTERISTICS (TA = 25°C)

OUTPUT POWER AND DRAIN CURRENT vs. INPUT POWER



INPUT AND OUTPUT DYNAMIC IMPEDANCE



PART NUMBER	f = 1.6 GHz		f = 2.3 GHz	
	Z _{IN} (Ω)	Z _{OUT} (Ω)	Z _{IN} (Ω)	Z _{OUT} (Ω)
NE1069L-4B	3.1 + j2.0	10.7 + j3.2	3.5 + j4.7	6.7 + j6.2