

NEC**MICROWAVE GaAs POWER FET****NEZ SERIES-2A, 4A, 6A****DATA SHEET****FEATURES**

- INTERNALLY MATCHED 50Ω INPUT/OUTPUT IMPEDANCE
- HIGH POWER OUTPUT
- CLASS A OPERATION
- X AND Ku-BAND FREQUENCIES
- AVAILABLE IN 2, 4, AND 6W

DESCRIPTION AND APPLICATIONS

The NEZ Series-2A, 4A, 6A, are 50Ω GaAs power FET modules that are part of NEC's complete line of matched standard communication band devices. Providing high gain, high efficiency, and high output power, the modules' internal matching enables guaranteed performance to be achieved with only a 50Ω external circuit. These space qualified devices incorporate Ti-Pt-Au metallization and silicon dioxide glassivation. NEC's stringent quality assurance and test procedures assure the highest reliability and performance.

SELECTION CHART

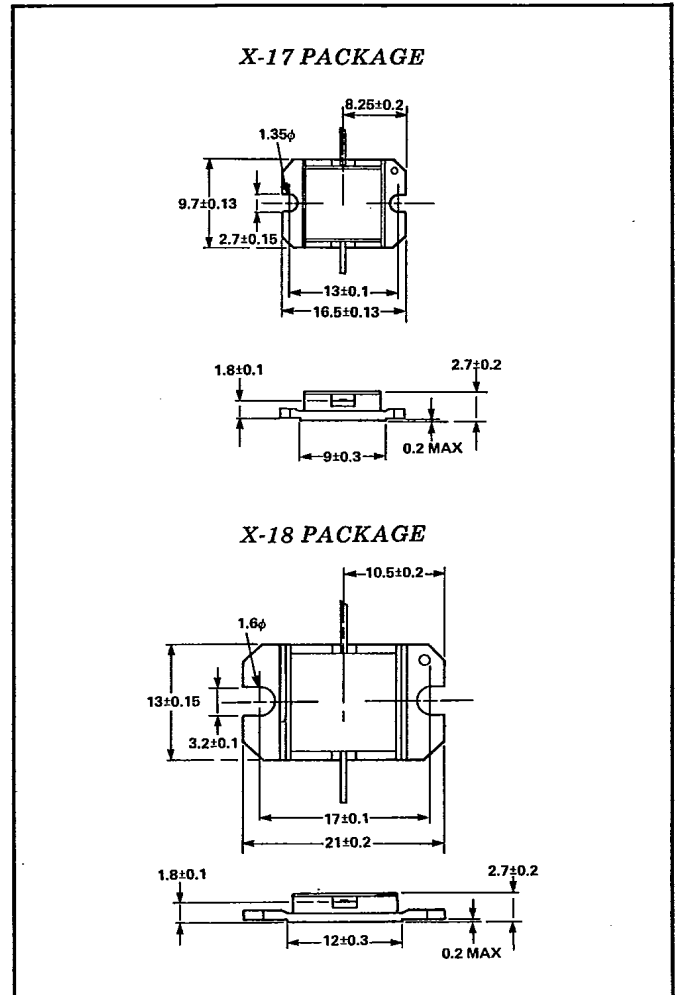
NEZ PART NUMBER	FREQUENCY BAND (GHz)
NEZ1011-2A NEZ1414-2A	10.7~11.7 14.0~14.5
NEZ0910-4A NEZ1011-4A NEZ1112-4A NEZ1414-4A	9.5~10.0 10.7~11.7 11.4~12.4 14.0~14.5
NEZ0909-6A NEZ0910-6A NEZ1011-6A NEZ1112-6A	9.0~9.5 9.5~10.0 10.7~11.7 11.4~12.4

*For information on frequencies not listed, contact CEL.

PERFORMANCE SPECIFICATIONS

NEZ PART NUMBER	FREQUENCY BAND (GHz)	P _{1dB} (dBm) ¹		G _L (dB) ²		P _{out} (dBm) ³	P _{in} (dBm) ³	V _{DS} (V)	I _D (A)	η _{add} (%)	f (GHz)	PACKAGE STYLE
		MIN	TYP	MIN	TYP							
NEZ1011-2A NEZ1414-2A	10.7~11.7 14.0~14.5	31.5	32.0	7.0	8.0	34.0	28	8	0.9	25	11.2	X-17
		31.5	32.0	5.0	6.0	33.5	29	8	0.9	22	14.25	X-17
NEZ0910-4A NEZ1011-4A NEZ1112-4A NEZ1414-4A	9.5~10.0 10.7~11.7 11.4~12.4 14.0~14.5	35.5	36.0	7.5	8.0	37.0	31	9	2.3	23	9.75	X-17
		35.5	36.0	6.0	6.5	37.0	32	9	2.3	19	11.2	X-17
		35.5	36.0	5.5	6.0	37.0	32	9	2.3	17	11.9	X-17
		34.5	35.0	4.5	5.0	36.5	33	9	2.3	12	14.25	X-17
NEZ0909-6A NEZ0910-6A NEZ1011-6A NEZ1112-6A	9.0~9.5 9.5~10.0 10.7~11.7 11.4~12.4	36.5	37.0	7.0	7.5	38.5	33	9	3.1	22	9.25	X-18
		36.5	37.0	7.0	7.5	38.5	33	9	3.1	22	9.75	X-18
		36.0	37.0	5.5	6.0	38.5	34	9	3.1	17	11.2	X-18
		36.0	37.0	5.0	5.5	38.0	34	9	3.1	15	11.9	X-18

SEE NOTES ON BACK PAGE.

PHYSICAL DIMENSIONS (Units in mm).

NEC Corporation

NEZ SERIES -2A, 4A, 6A, MICROWAVE GaAs POWER FET

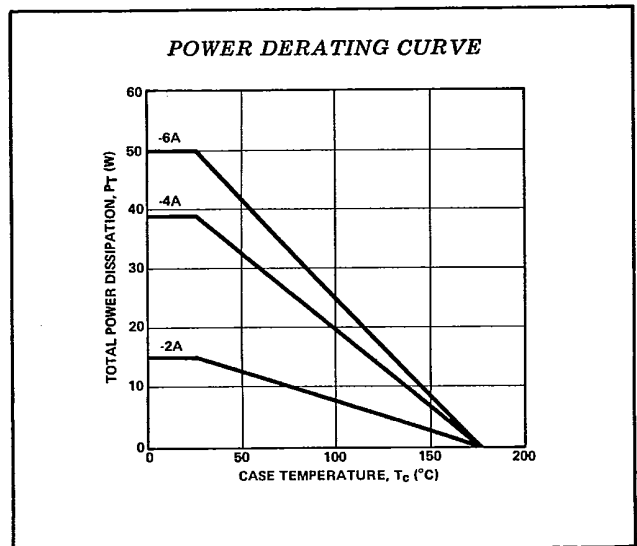
ELECTRICAL CHARACTERISTICS

NEZ PART NUMBER PACKAGE STYLE			NEZ SERIES-2A X-17			NEZ SERIES-4A X-17			NEZ SERIES-6A X-18		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
I _{DSS}	Saturated Drain Current at V _{DS} = 2.5V, V _{GS} = 0	A	1.2	1.8	2.4	3	4.5	6	4	6	8
V _p	Pinch-off Voltage at V _{DS} = 2.5V, I _D = 40mA I _D = 80mA I _D = 120mA	V V V	-2	-3.5	-5	-2	-3.5	-5	-2	-3.5	-5
g _m	Transconductance at V _{DS} = 2.5V, I _D = 0.6A I _D = 1.5A I _D = 2A	mS mS mS		400			1000			1300	
R _{th}	Thermal Resistance (channel-case)	°C/W			10			4			3
P _T	Total Power Dissipation (T _c = 25°C)	W			15			38			50

ABSOLUTE MAXIMUM RATINGS

SYMBOLS	PARAMETERS	UNITS	RATINGS
V _{DS}	Drain to Source Voltage	V	20
V _{GS}	Gate to Source Voltage	V	-9
I _D	Drain Current NEZ Series-2A NEZ Series-4A NEZ Series-6A	A A A	2.4 6 8
I _G	Gate Current NEZ Series-2A NEZ Series-4A NEZ Series-6A	mA mA mA	20 30 50
T _{ch}	Channel Temperature	°C	175
T _{stg}	Storage Temperature	°C	-65~+175

THERMAL CHARACTERISTICS



(T_a = 25°C for all data unless noted.)

NOTES:

- Z_S = Z_L = 50Ω (All devices)
- G_L: Gain at input power 10dB below the input power for P_{out}:
- Typical P_{out} at P_{in} listed. Some slight external tuning may improve performance.



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