MICROWAVE POWER GaAs FET

Internally Matched Power GaAs FETs (X, Ku-Band)

Features

- High power
 - P_{1dB} =42.0 dBm at 14.0 GHz to14.5 GHz
- High gain
- G_{1dB} = 6.0 dB at 14.0 GHz to 14.5 GHz
 Broad Band Internally Matched
- · Hermetically sealed package

RF Performance Specifications ($T_a = 25^{\circ} C$)

Characteristics	Symbol	Condition	Unit	Min.	Тур.	Max
Output Power at 1dB Compression Point	P _{1dB}		dBm	41.0	42.0	-
Power Gain at 1dB Compression Point	G _{1dB}	V _{DS} = 9V f = 14.0 ~ 14.5GHz	dB	5.0	6.0	_
Drain Current	I _{DS}		Α	_	4.5	5.5
Power Added Efficiency	η _{add}		%	_	29	-
Channel-Temperature Rise	ΔT_{ch}	V _{DS} X I _{DS} X R _{th(c-c)}	°C	_	_	100

Electrical Characteristics (T_a = 25° C)

Characteristic	Symbol	Condition	Unit	Min.	Тур.	Max
Trans-conductance	gm	V _{DS} =3V I _{DS} =4.8 A	mS	_	3000	_
Pinch-off Voltage	V _{GSoff}	V _{DS} =3V I _{DS} =145mA	V	-1.5	-3.0	4.5
Saturated Drain Current	I _{DSS}	V _{DS} =3V V _{GS} =0V	А	_	10.0	11.5
Gate to Source Breakdown Voltage	V _{GSO}	I _{GS} =-145 μA	V	-5	_	_
Thermal Resistance	R _{th (c-c)}	Channel to case	°C/W	_	2.0	2.5

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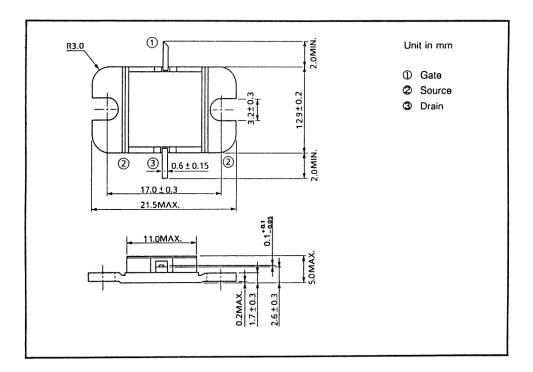
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The information contained here is subject to change without notice.

Absolute Maximum Ratings ($T_a = 25^{\circ} C$)

Characteristic	Symbol	Unit	Rating
Drain Source Voltage	V _{DS}	V	15
Gate Source Voltage	V _{GS}	V	-5
Drain Current	I _{DS}	А	11.5
Total Power Dissipation (Tc = 25°C)	P _T	W	60
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65~175

Package Outline (2-11C1B)



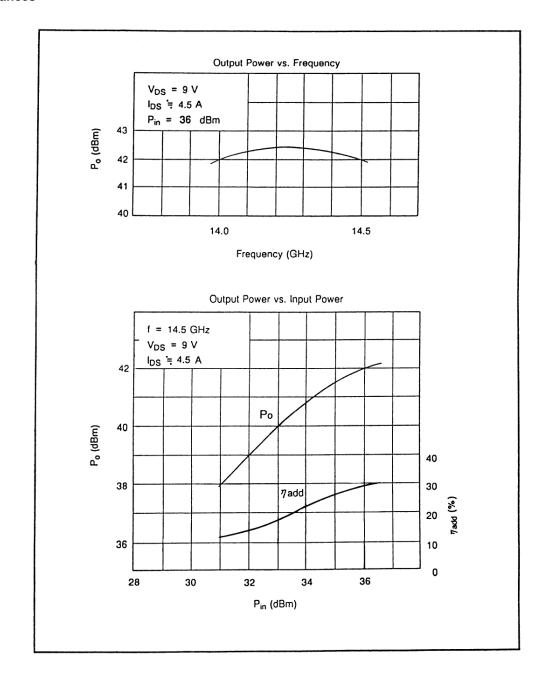
Handling Precautions for Packaged Type

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

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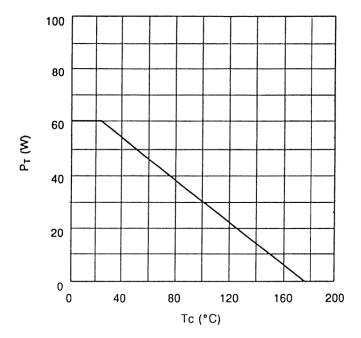
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RF Performances



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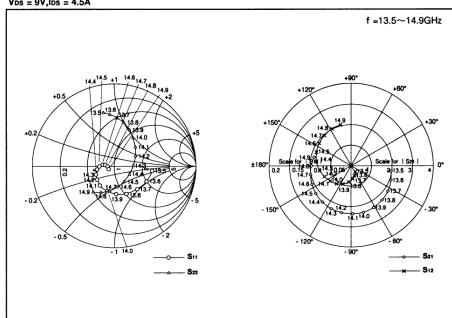
Power Dissipation vs. Case Temperature



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Tim1414-15S-Parameters (MAGN. and ANGLES)

Vos = 9V,los = 4.5A



FREQUENCY (MHz)	MAG	S ₁₁ ANG	MAG	S ₁₂ ANG	MAG	S21 ANG	MAG	S22 ANG
13.5	0.475	-6.2	0.017	-56.5	1.962	-7.6	0.669	102.1
13.6	0.435	-24.8	0.024	-71.9	2.070	-20.5	0.634	94.7
13.7	0.397	-44.8	0.031	-86.9	2.172	-33.9	0.592	86.8
13.8	0.364	-65.6	0.039	-101.7	2.247	-47.5	0.541	78.1
13.9	0.335	-86.5	0.048	-116.5	2.298	-61.3	0.482	68.3
14.0	0.310	-107.0	0.056	-131.3	2.325	-75.1	0.419	57.0
14.1	0.289	-126.1	0.064	-145.7	2.329	-88.9	0.355	43.5
14.2	0.267	-143.3	0.072	-159.8	2.316	-102.3	0.293	26.8
14.3	0.243	-158.5	0.079	-173.9	2.285	-115.8	0.241	4.6
14.4	0.215	-171.2	0.086	172.3	2.245	-129.1	0.212	-24.1
14.5	0.183	178.1	0.092	158.6	2.190	-142.3	0.216	-55.1
14.6	0.147	171.3	0.096	145.0	2.123	-155.3	0.249	-81.5
14.7	0.112	169.9	0.100	131.7	2.046	-168.1	0.299	-102.0
14.8	0.084	178.9	0.102	118.8	1.963	179.5	0.353	-117.9
14.9	0.074	-161.1	0.103	106.2	1.875	167.2	0.404	-130.7

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