Internally Matched Power GaAs FETs (C-Band)

Features

- High power
  - P_{1dB} = 39 dBm at 4.9 GHz to 5.10 GHz
- High gain
  - G_{1dB} = 9.5 dB at 4.9 GHz to 5.1 GHz
- Broad band internally matched
- Hermetically sealed package

RF Performance Specifications (T_a = 25° C)

Characteristics	Symbol	Condition	Unit	Min.	Typ.	Max
Output Power at 1dB Compression Point	P_{1dB}	V_{DS} = 10V f = 4.9 ~ 5.1 GHz	dBm	38.0	39.0	–
Power Gain at 1dB Compression Point	G_{1dB}		dB	8.5	9.5	–
Drain Current	I_{DS}		A	–	2.2	2.8
Power Added Efficiency	η_{add}		%	–	32	–
Channel-Temperature Rise	ΔT_{ch}	V_{DS}xI_{DS}xR_{th}(c-c)	°C	–	–	80

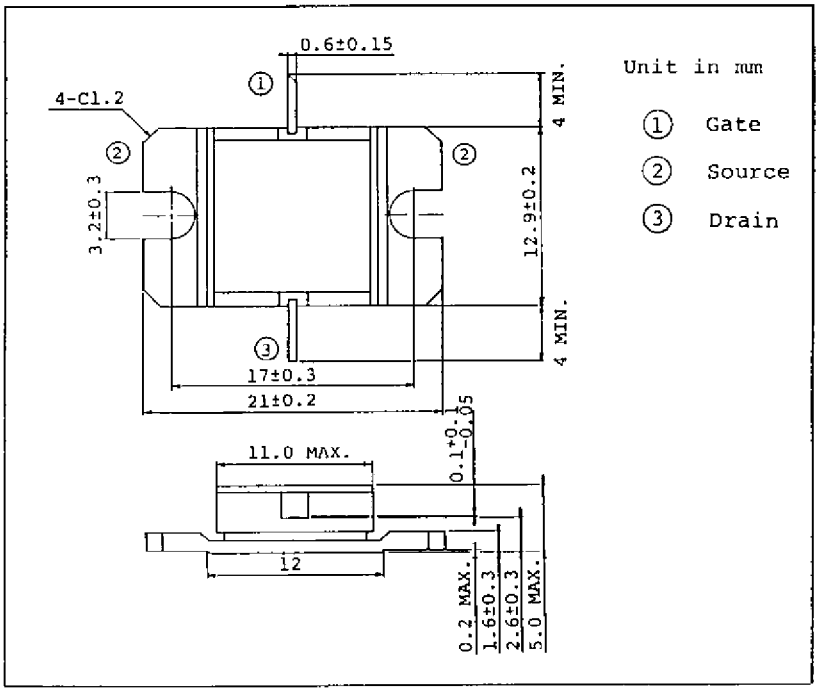
Electrical Characteristics (T_a = 25° C)

Characteristic	Symbol	Condition	Unit	Min.	Typ.	Max
Trans-conductance	gm	V_{DS} = 3V I_{DS} = 3.0 A	mS	–	1800	–
Pinch-off Voltage	V_{GSoff}	V_{DS} = 3V I_{DS} = 40mA	V	-2	-3.5	-5
Saturated Drain Current	I_{DSS}	V_{DS} = 3V V_{GS} = 0V	A	–	5.8	7.5
Gate to Source Breakdown Voltage	V_{GSO}	I_{GS} = -120 μA	V	-5	–	–
Thermal Resistance	$R_{th\ (c-c)}$	Channel to case	°C/W	–	2.3	3.5

Absolute Maximum Ratings (T_a = 25° C)

Characteristic	Symbol	Unit	Rating
Drain Source Voltage	V_{DS}	V	15
Gate Source Voltage	V_{GS}	V	-5
Drain Current	I_D	A	8
Total Power Dissipation (Tc = 25°C)	P_T	W	37.5
Channel Temperature	T_{ch}	°C	175
Storage Temperature	T_{stg}	°C	-65~175

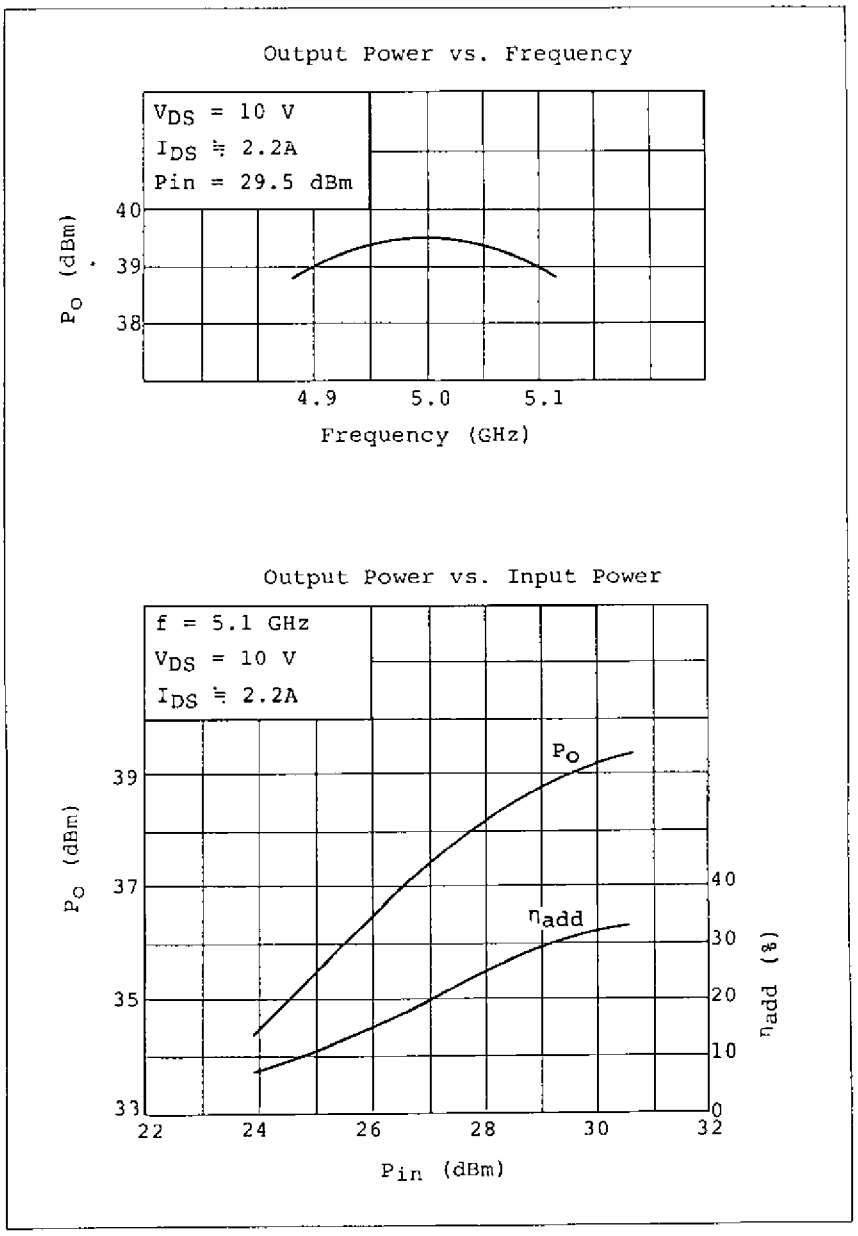
Package Outline (2-11D1B)



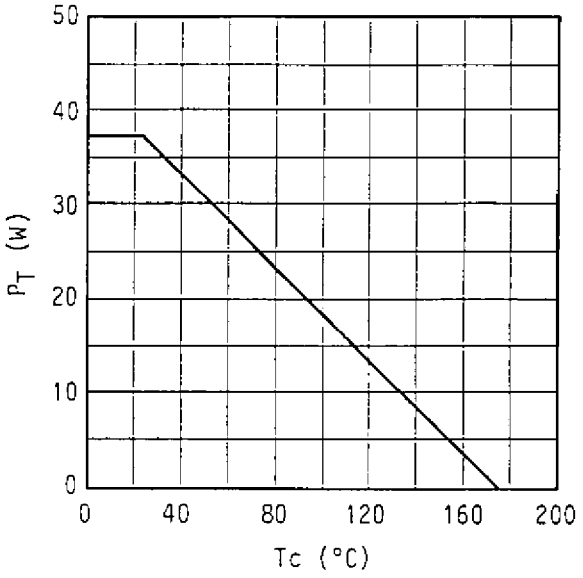
Handling Precautions for Packaged Type

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

RF Performances

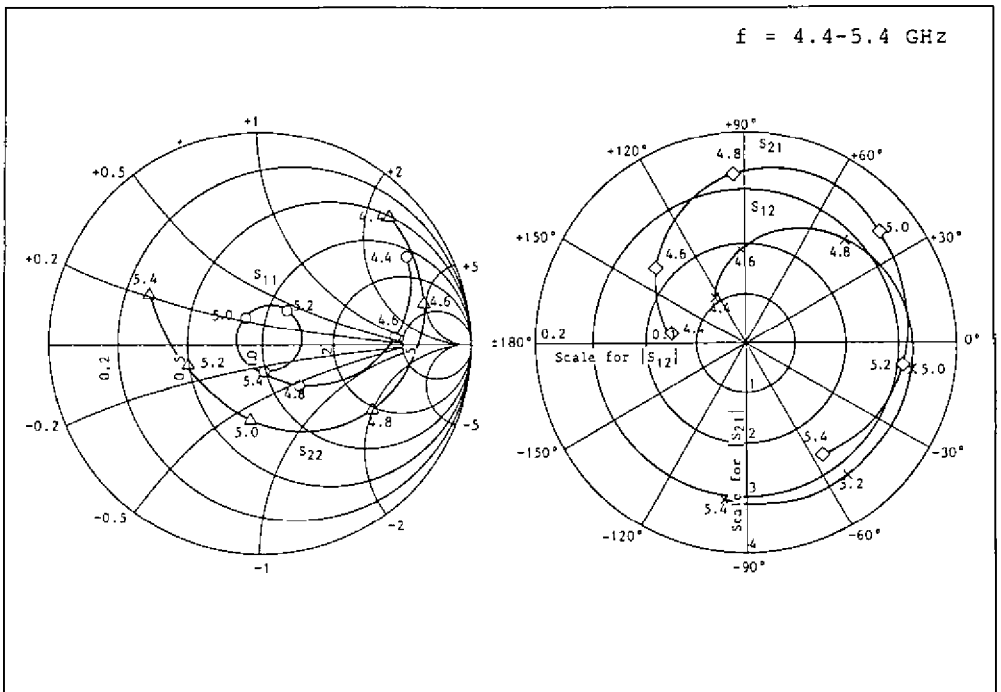


Power Dissipation vs. Case Temperature



TIM4951-8 S-Parameters
(MAGN. and ANGLES)

V_{DS} = 10 V, I_{DS} = 2.0 A



FREQUENCY (GHz)	S_{11}		S_{12}		S_{21}		S_{22}	
4.4	0.80	30	0.054	123	1.55	175	0.84	42
4.6	0.62	2	0.091	90	2.32	141	0.78	14
4.8	0.25	-46	0.146	44	3.32	96	0.60	-31
5.0	0.15	115	0.173	-6	3.54	39	0.34	-98
5.2	0.21	52	0.168	-52	3.19	-10	0.35	-162
5.4	0.15	-80	0.159	-95	2.78	-57	0.57	154