

### Internally Matched Power GaAs FETs (C-Band)

#### Features

- High power
  - $P_{1dB} = 36.0$  dBm at 4.9 GHz to 5.1 GHz
- High gain
  - $G_{1dB} = 10.0$  dB at 4.9 GHz to 5.10 GHz
- Broad band internally matched
- Hermetically sealed package

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

Characteristics	Symbol	Condition	Unit	Min.	Typ.	Max
Output Power at 1dB Compression Point	$P_{1dB}$	$V_{DS} = 10V$ $f = 4.9 \sim 5.1$ GHz	dBm	35.0	36.0	–
Power Gain at 1dB Compression Point	$G_{1dB}$		dB	9.0	10.0	–
Drain Current	$I_{DS}$		A	–	1.1	1.5
Power Added Efficiency	$\eta_{add}$		%	–	33	–
Channel-Temperature Rise	$\Delta T_{ch}$	$V_{DS} \times I_{DS} \times R_{th(c-c)}$	$^\circ\text{C}$	–	–	80

#### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Condition	Unit	Min.	Typ.	Max
Trans-conductance	gm	$V_{DS} = 3V$ $I_{DS} = 1.5A$	mS	–	900	–
Pinch-off Voltage	$V_{GSoff}$	$V_{DS} = 3V$ $I_{DS} = 20mA$	V	-2	-3.5	-5
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 3V$ $V_{GS} = 0V$	A	–	2.9	3.8
Gate to Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -60 \mu A$	V	-5	–	–
Thermal Resistance	$R_{th(c-c)}$	Channel to case	$^\circ\text{C/W}$	–	4.0	6.0

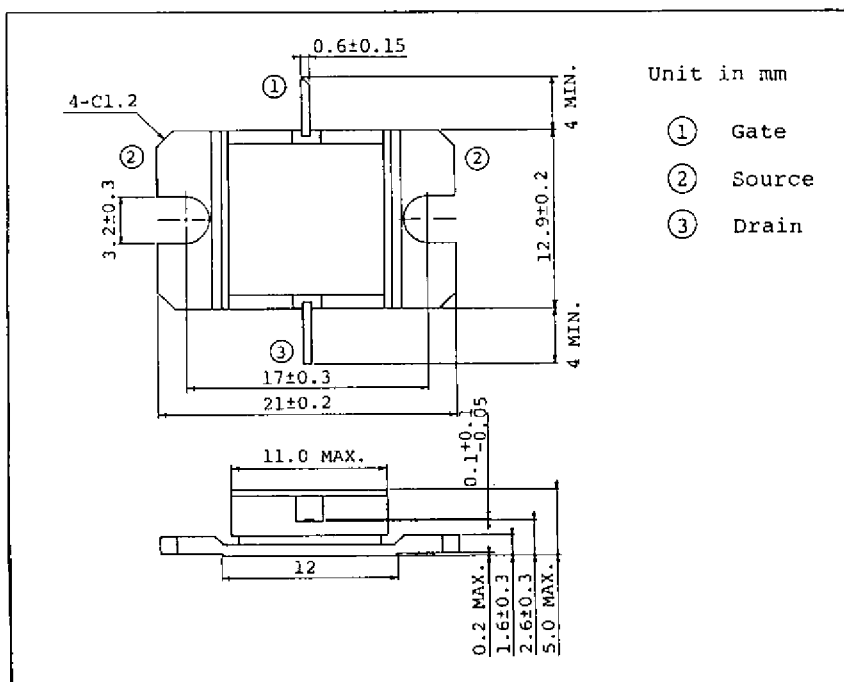
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Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Unit	Rating
Drain Source Voltage	$V_{DS}$	V	15
Gate Source Voltage	$V_{GS}$	V	-5
Drain Current	$I_D$	A	4
Total Power Dissipation ( $T_c = 25^\circ\text{C}$ )	$P_T$	W	20
Channel Temperature	$T_{ch}$	$^\circ\text{C}$	175
Storage Temperature	$T_{stg}$	$^\circ\text{C}$	-65~175

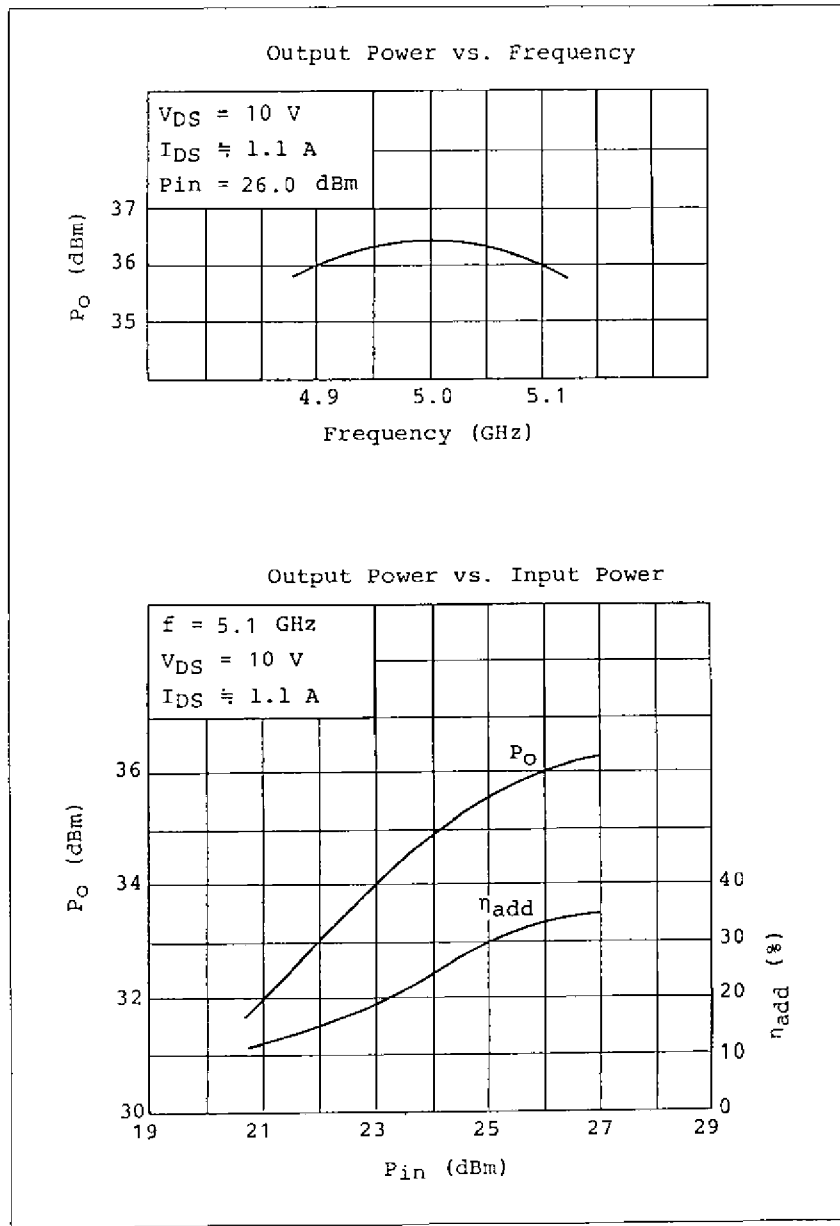
## Package Outline (2-11D1B)



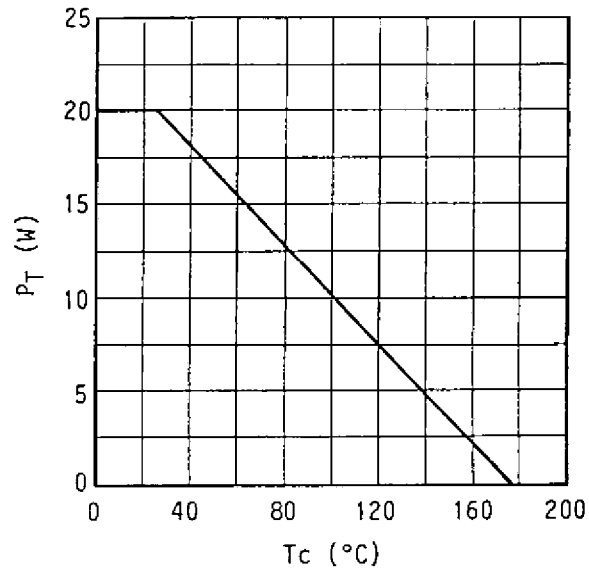
## Handling Precautions for Packaged Type

Soldering iron should be grounded and the operating time should not exceed 10 seconds at  $260^\circ\text{C}$ .

RF Performances

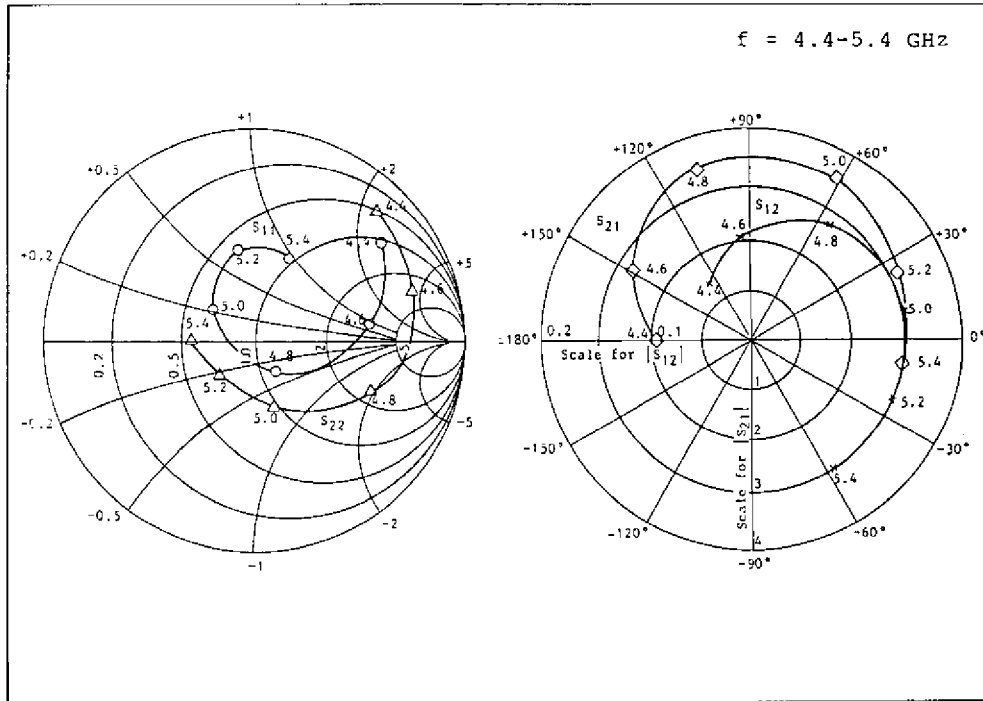


Power Dissipation vs. Case Temperature



**TIM4951-4 S-Parameters  
(MAGN. and ANGLES)**

$V_{DS} = 10 \text{ V}, I_{DS} = 1.0 \text{ A}$



FREQUENCY (GHz)	S <sub>11</sub>		S <sub>12</sub>		S <sub>21</sub>		S <sub>22</sub>	
4.4	0.77	37	0.067	128	2.00	-180	0.85	46
4.6	0.56	9	0.103	96	2.77	149	0.79	18
4.8	0.17	-54	0.144	55	3.59	107	0.60	-23
5.0	0.29	141	0.158	10	3.60	61	0.33	-75
5.2	0.45	100	0.153	-25	3.25	24	0.23	-139
5.4	0.43	68	0.150	-58	3.01	-10	0.31	178