

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

#### Features

- High power
  - $P_{1dB} = 42.0$  dBm at 14.0 GHz to 14.5 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 ( $T_a = 25^\circ \text{C}$ )

Characteristics	Symbol	Condition	Unit	Min.	Typ.	Max
Output Power at 1dB Compression Point	$P_{1dB}$	$V_{DS} = 9V$ $f = 14.0 \sim 14.5\text{GHz}$	dBm	41.0	42.0	—
Power Gain at 1dB Compression Point	$G_{1dB}$		dB	5.0	6.0	—
Drain Current	$I_{DS}$		A	—	4.5	5.5
Power Added Efficiency	$\eta_{add}$		%	—	29	—
Channel-Temperature Rise	$\Delta T_{ch}$	$V_{DS} \times I_{DS} \times R_{th(c-c)}$	$^\circ\text{C}$	—	—	100

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

Characteristic	Symbol	Condition	Unit	Min.	Typ.	Max
Trans-conductance	gm	$V_{DS}=3V$ $I_{DS}=4.8 \text{ A}$	mS	—	3000	—
Pinch-off Voltage	$V_{GSoff}$	$V_{DS}=3V$ $I_{DS}=145\text{mA}$	V	-1.5	-3.0	4.5
Saturated Drain Current	$I_{DSS}$	$V_{DS}=3V$ $V_{GS}=0V$	A	—	10.0	11.5
Gate to Source Breakdown Voltage	$V_{GSO}$	$I_{GS}=-145 \mu\text{A}$	V	-5	—	—
Thermal Resistance	$R_{th(c-c)}$	Channel to case	$^\circ\text{C/W}$	—	2.0	2.5

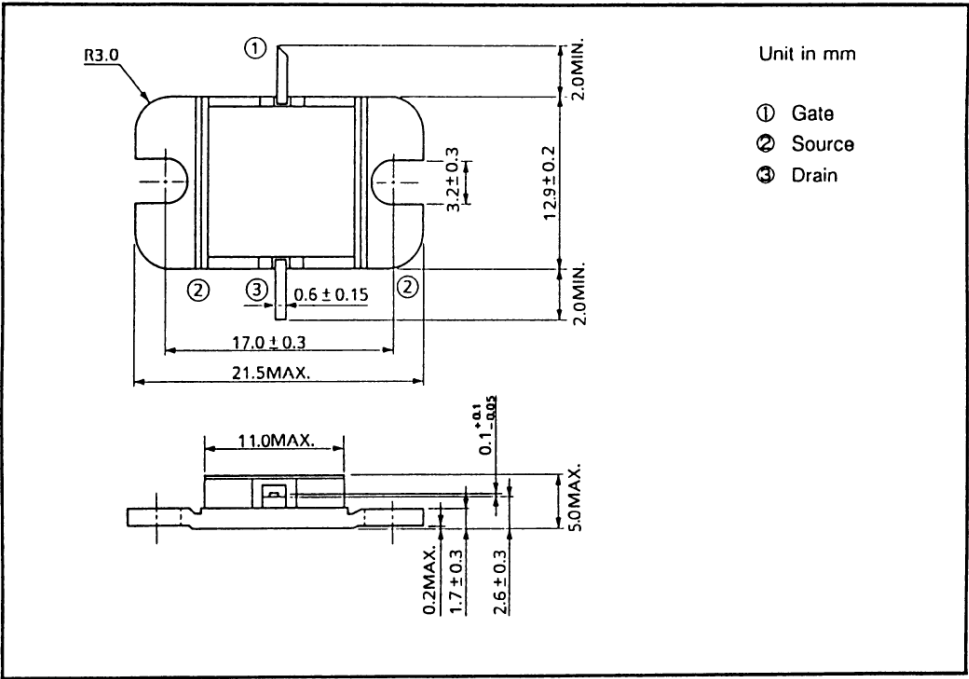
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Absolute Maximum Ratings (T<sub>a</sub> = 25° C)

Characteristic	Symbol	Unit	Rating
Drain Source Voltage	V <sub>DS</sub>	V	15
Gate Source Voltage	V <sub>GS</sub>	V	-5
Drain Current	I <sub>DS</sub>	A	11.5
Total Power Dissipation (T <sub>c</sub> = 25°C)	P <sub>T</sub>	W	60
Channel Temperature	T <sub>ch</sub>	°C	175
Storage Temperature	T <sub>stg</sub>	°C	-65~175

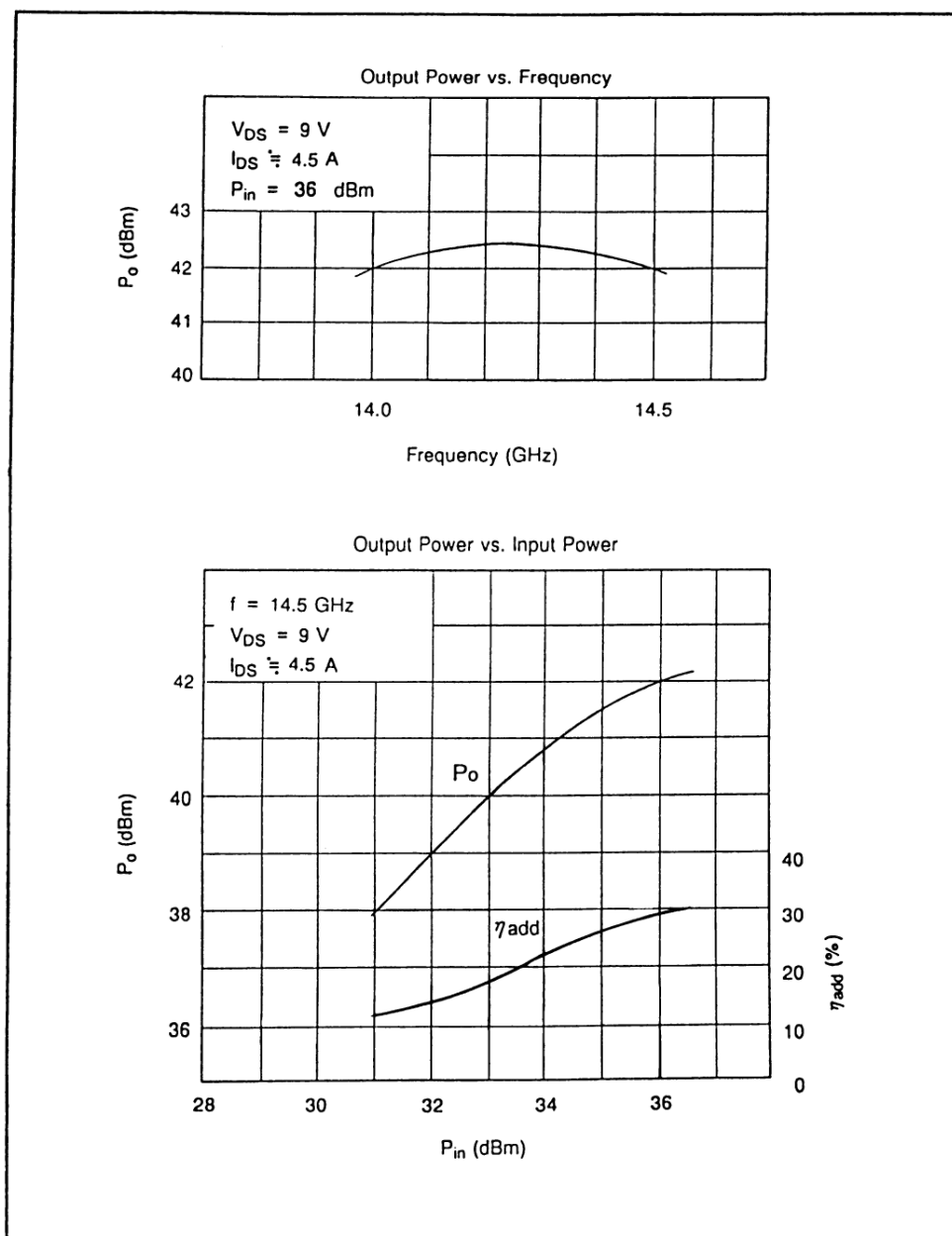
Package Outline (2-11C1B)



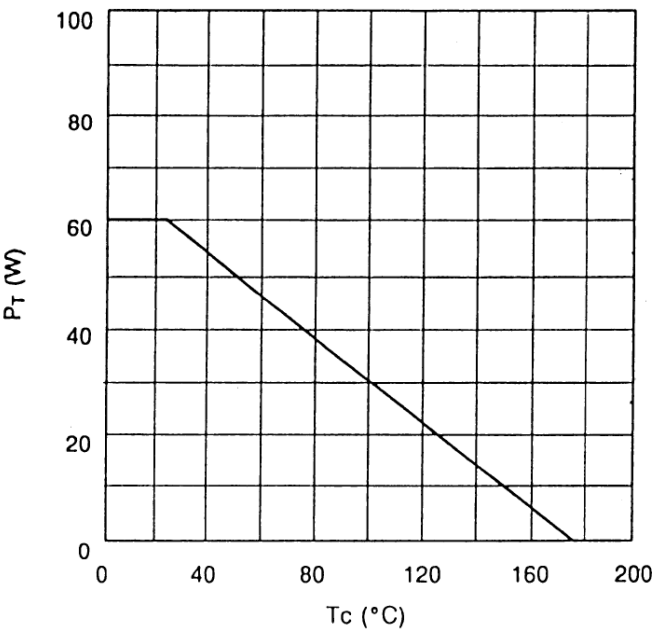
Handling Precautions for Packaged Type

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

## RF Performances



Power Dissipation vs. Case Temperature



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

$V_{DS} = 9V, I_{DS} = 4.5A$

