

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

Features

- High power
 - $P_{1dB} = 37.5$ dBm at 10.7 GHz to 11.7 GHz
- High gain
 - $G_{1dB} = 7.0$ dB at 10.7 GHz to 11.7 GHz
- Broadband internally matched
- Hermetically sealed package

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

Characteristic	Symbol	Condition	Unit	Min.	Typ.	Max
Output Power at 1dB Compression Point	P_{1dB}	$V_{DS} = 9V$ $f = 10.7 - 11.7$ GHz	dBm	37.0	37.5	–
Power Gain at 1dB Compression Point	G_{1dB}		dB	6.0	7.0	–
Drain Current	I_{DS}		A	–	2.0	2.5
Power Added Efficiency	η_{add}		%	–	20	–
Channel-Temperature Rise	ΔT_{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.
Transconductance	gm	$V_{DS} = 3V$ $I_{DS} = 2.4A$	mS	–	1400	–
Pinch-off Voltage	V_{GSoff}	$V_{DS} = 3V$ $I_{DS} = 72$ mA	V	-2	-3.5	-5
Saturated Drain Current	I_{DSS}	$V_{DS} = 3V$ $V_{GS} = 0V$	A	–	5.0	5.7
Gate-Source Breakdown Voltage	V_{GSO}	$I_{GS} = -72$ μA	V	-5	–	–
Thermal Resistance	$R_{th(c-c)}$	Channel to Case	$^\circ\text{C/W}$	–	3.0	3.7

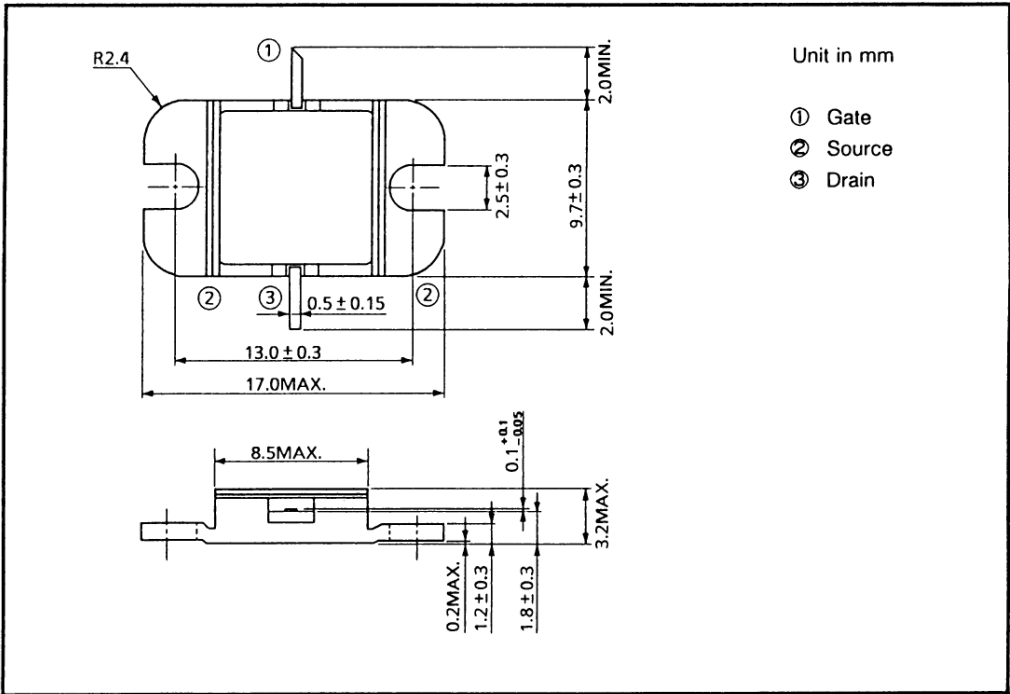
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Absolute Maximum Ratings (T_a = 25°C)

Characteristic	Symbol	Unit	Rating
Drain-Source Voltage	V _{DS}	V	15
Gate-Source Voltage	V _{GS}	V	-5
Drain Current	I _D	A	5.7
Total Power Dissipation (T _c = 25°C)	P _T	W	30
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65 ~ 175

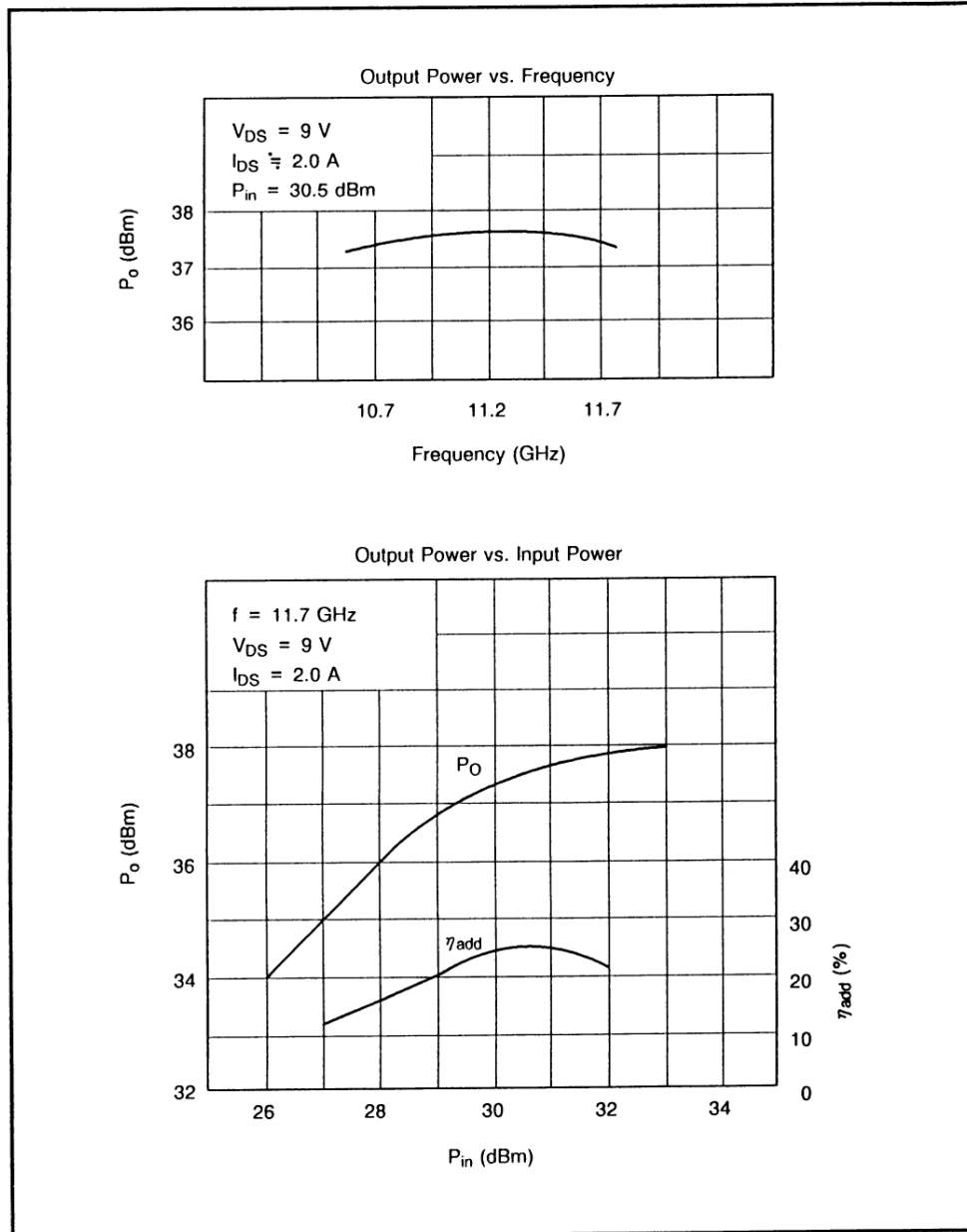
Package Outline (2-9D1B)



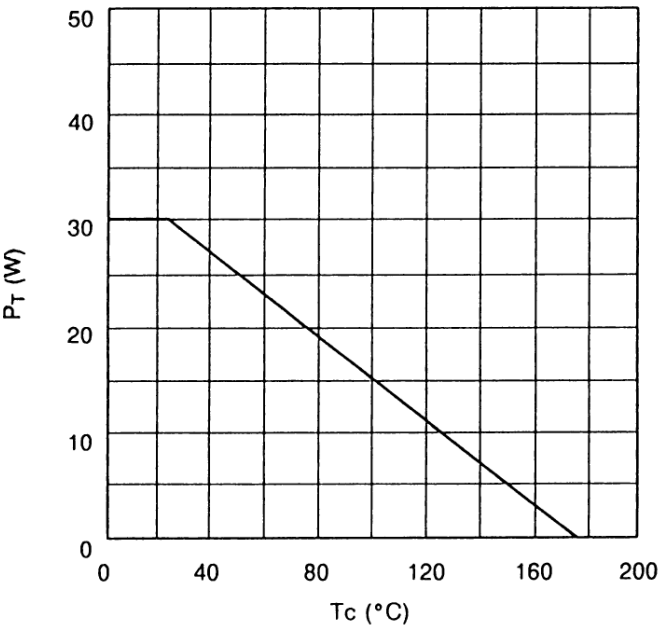
Handling Precautions for Packaged Type

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

RF Performances



Power Dissipation vs. Case Temperature



TIM1011-5 S-Parameters (Magn. and Angles)

 $V_{DS} = 9V$, $I_{DS} = 2.0A$ $f = 10.2-12.2GHz$ 