

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

#### Features

- High power
  - $P_{1dB} = 33.5$  dBm at 9.5 GHz to 10.5 GHz
- High gain
  - $G_{1dB} = 7.5$  dB at 9.5 GHz to 10.5 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	$P_{1dB}$	$V_{DS} = 9V$ $f = 9.5 - 10.5$ GHz	dBm	32.5	33.5	–
Power Gain at 1dB Compression Point	$G_{1dB}$		dB	6.5	7.5	–
Drain Current	$I_{DS}$		A	–	0.85	1.1
Power Added Efficiency	$\eta_{add}$		%	–	24	–
Channel-Temperature Rise	$\Delta T_{ch}$	$V_{DS} \times I_{DS} \times R_{th(c-c)}$	$^\circ\text{C}$	–	–	60

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

Characteristic	Symbol	Condition	Unit	Min.	Typ.	Max.
Transconductance	gm	$V_{DS} = 3V$ $I_{DS} = 1.0A$	mS	–	600	–
Pinch-off Voltage	$V_{GSoff}$	$V_{DS} = 3V$ $I_{DS} = 30$ mA	V	-2	-3.5	-5
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 3V$ $V_{GS} = 0V$	A	–	2.0	2.6
Gate-Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -30$ $\mu\text{A}$	V	-5	–	–
Thermal Resistance	$R_{th(c-c)}$	Channel to Case	$^\circ\text{C/W}$	–	5	6

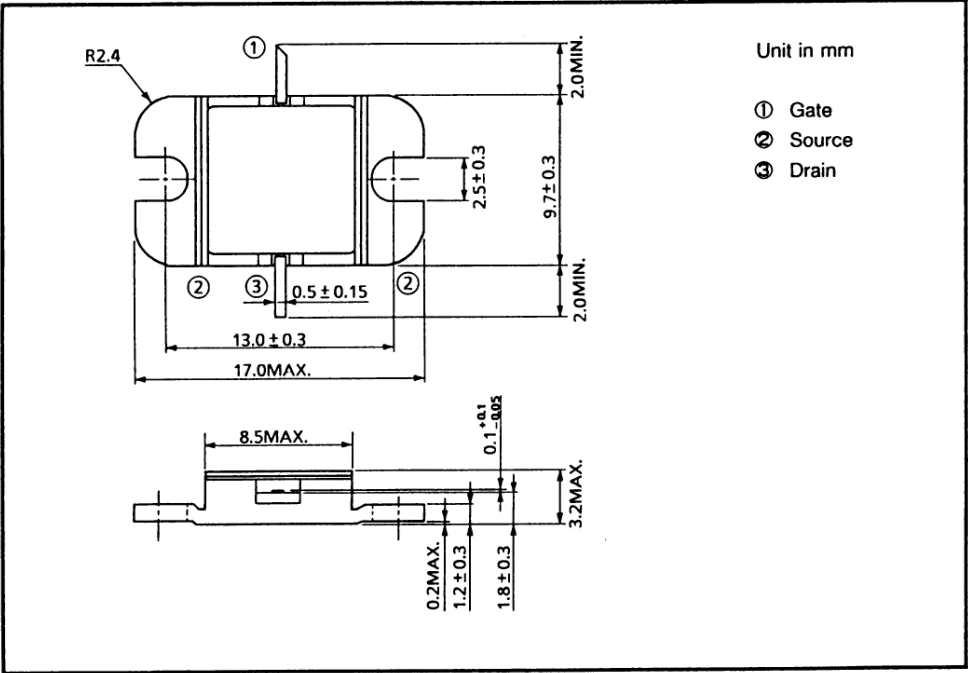
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Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

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>D</sub>	A	2.6
Total Power Dissipation (T <sub>c</sub> = 25°C)	P <sub>T</sub>	W	15
Channel Temperature	T <sub>ch</sub>	°C	175
Storage Temperature	T <sub>stg</sub>	°C	-65 ~ 175

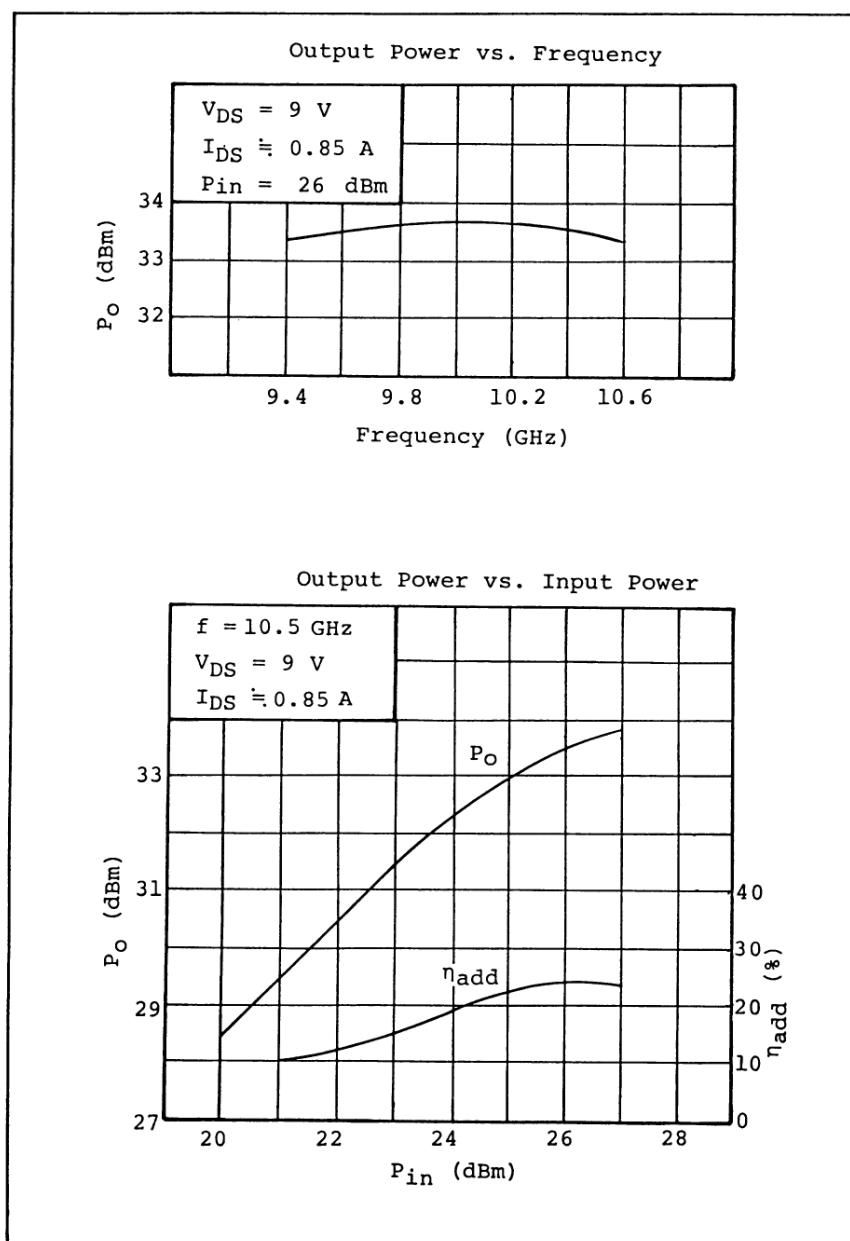
Package Outline (2-9D1B)



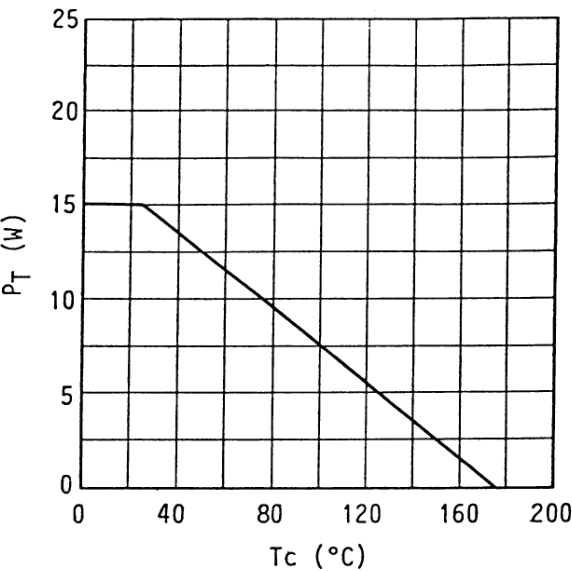
Handling Precautions for Packaged Type

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

## RF Performances



Power Dissipation vs. Case Temperature



## TIM0910-2 S-Parameters (Magn. and Angles)

$$V_{DS}=9V, I_{DS}=0.85A$$

