

High Power GaAs FETs (L, S-Band)

Features

- High power
 - $P_{1dB} = 42.0$ dBm at 2.3 GHz
- High gain
 - $G_{1dB} = 12.0$ dB at 2.3 GHz
- Partially matched type
- 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}	$V_{DS} = 10V$ $f = 2.3$ GHz	dBm	41.0	42.0	–
Power Gain at 1dB Compression Point	G_{1dB}		dB	11.0	12.0	–
Drain Current	I_{DS}		A	–	4.0	5.0
Power Added Efficiency	N_{add}		%	–	37	–
Channel-Temperature Rise	ΔT_{ch}	NOTE 1	$^\circ\text{C}$	–	–	80

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

Characteristic	Symbol	Condition	Unit	Min.	Typ.	Max
Trans-conductance	gm	$V_{DS}=3V$ $I_{DS}=3.5A$	mS	–	3200	–
Pinch-off Voltage	V_{GSoff}	$V_{DS}=3V$ $I_{DS}=70mA$	V	-1.0	-3.0	-4.0
Saturated Drain Current	I_{DSS}	$V_{DS}=3V$ $V_{GS}=0V$	A	–	10	13
Gate to Source Breakdown Voltage	V_{GSO}	$I_{GS}=-210\ \mu A$	V	-5	–	–
Thermal Resistance	$R_{th(c-c)}$	Channel to case	$^\circ\text{C/W}$	–	1.9	2.5

NOTE 1: $\Delta T_{ch} = (V_{DS} \times I_{DS} + P_{in} - P_{1dB}) \times R_{th(c-c)}$

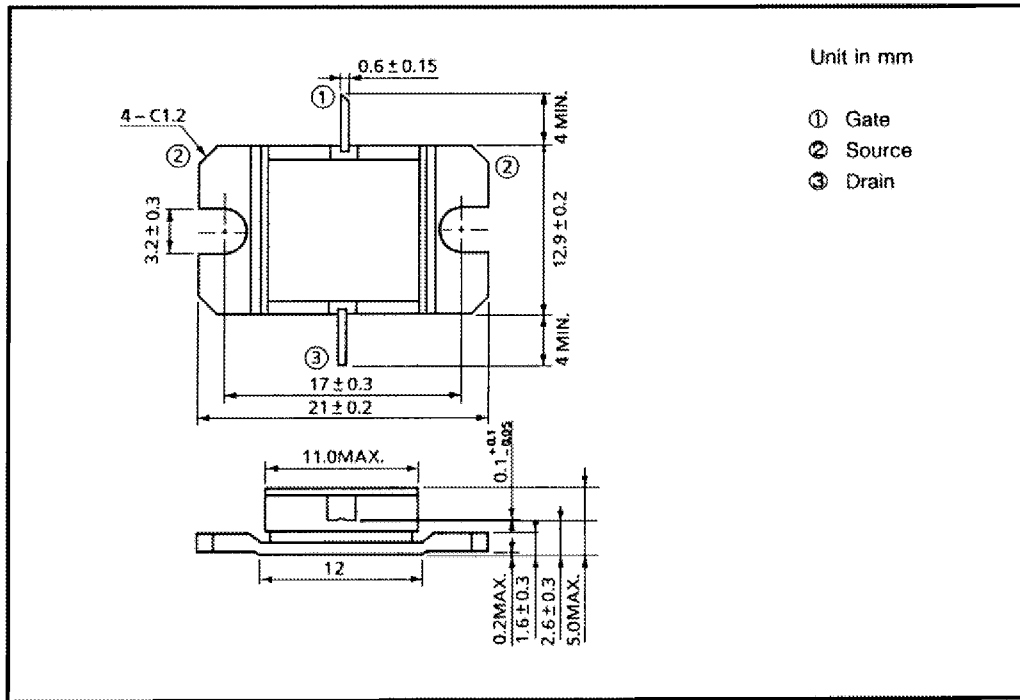
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Absolute Maximum Ratings (T_a = 25° C)

Characteristic	Symbol	Unit	Rating
Drain Source Voltage	V _{DS}	V	15
Gate Source Voltage	V _{GS}	V	-5
Drain Current	I _D	A	13
Total Power Dissipation (T _c = 25°C)	P _T	W	60
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65~175

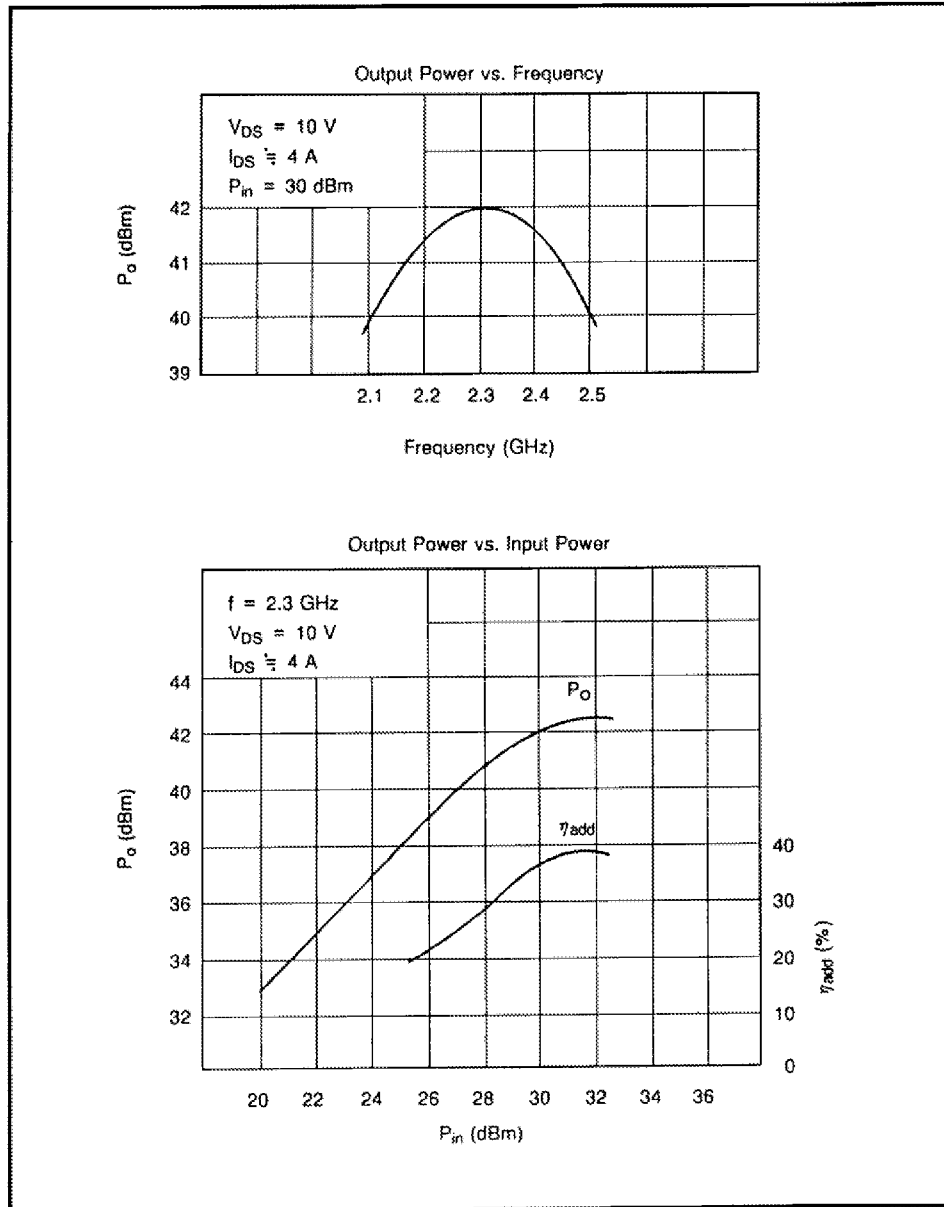
Package Outline (2-11D1B)



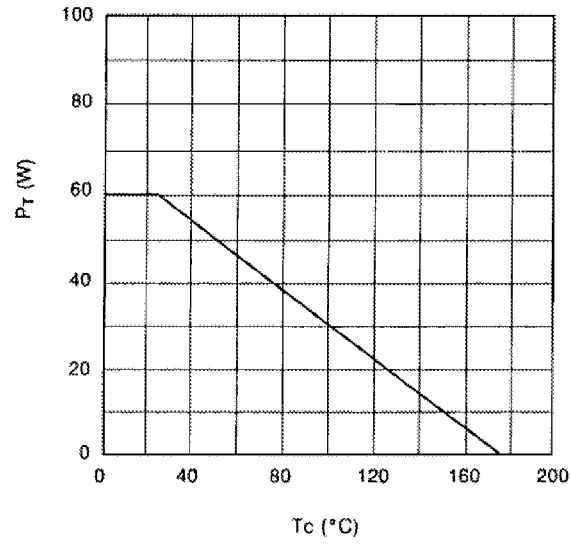
Handling Precautions for Packaged Type

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

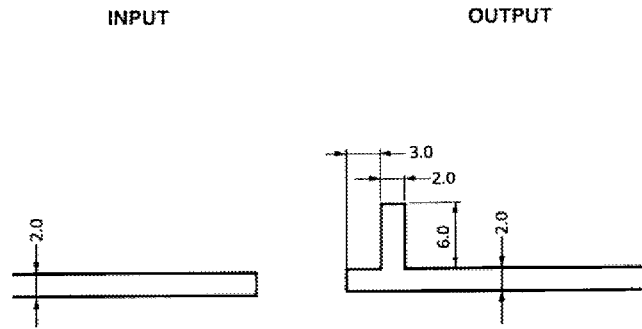
RF Performances



Power Dissipation vs. Case Temperature



Drawing of Matching Network



TPM2323-14 S-Parameters
(MAGN. and ANGLES)

$V_{DS} = 10\text{ V}$, $I_{DS} = 4\text{ A}$

