

TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM0910-2

FEATURES:

- HIGH POWER
P_{1dB} = 33.5 dBm at 9.5 GHz to 10.5 GHz
- BROAD BAND INTERNALLY MATCHED
- HIGH GAIN
G_{1dB} = 7.5 dB at 9.5 GHz to 10.5 GHz
- HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (T_a = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1 dB Compression Point	P _{1dB}	V _{DS} = 9 V f = 9.5 - 10.5 GHz	dBm	32.5	33.5	-
Power Gain at 1 dB Compression Point	G _{1dB}		dB	6.5	7.5	-
Drain Current	I _{DS}		A	-	0.85	1.1
Power Added Efficiency	η _{add}		%	-	24	-
Channel-Temperature Rise	ΔT _{ch}	V _{DS} × I _{DS} × R _{th(c-c)}	°C	-	-	60

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Trans-conductance	gm	V _{DS} = 3 V I _{DS} = 1.0 A	mS	-	600	-
Pinch-off Voltage	V _{GSoff}	V _{DS} = 3 V I _{DS} = 30 mA	V	-2	-3.5	-5
Saturated Drain Current	I _{DSS}	V _{DS} = 3 V V _{GS} = 0 V	A	-	2.0	2.6
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} = -30 μA	V	-5	-	-
Thermal Resistance	R _{th(c-c)}	Channel to Case	°C/W	-	5	6

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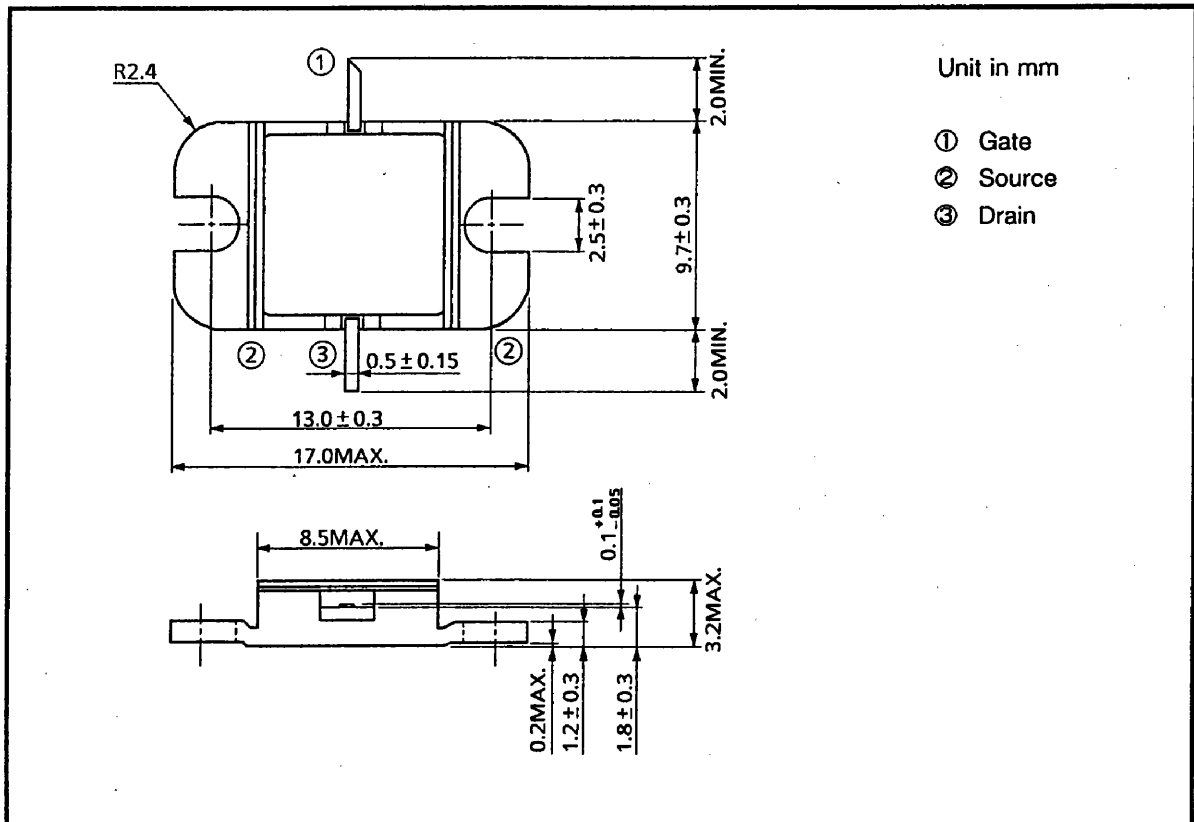


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ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	UNIT	RATING
Drain-Source Voltage	V_{DS}	V	15
Gate-Source Voltage	V_{GS}	V	-5
Drain Current	I_{DS}	A	2.6
Total Power Dissipation ($T_c = 25^\circ\text{C}$)	P_T	W	15
Channel Temperature	T_{ch}	$^\circ\text{C}$	175
Storage Temperature	T_{stg}	$^\circ\text{C}$	-65-175

PACKAGE OUTLINE (2-9D1B)

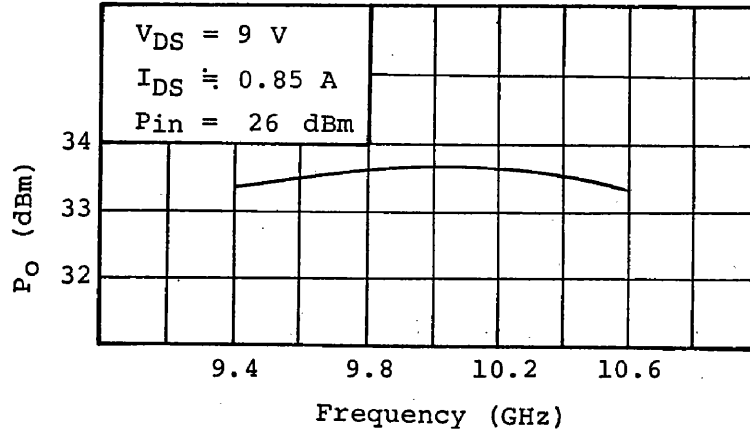


HANDLING PRECAUTIONS FOR PACKAGED TYPE

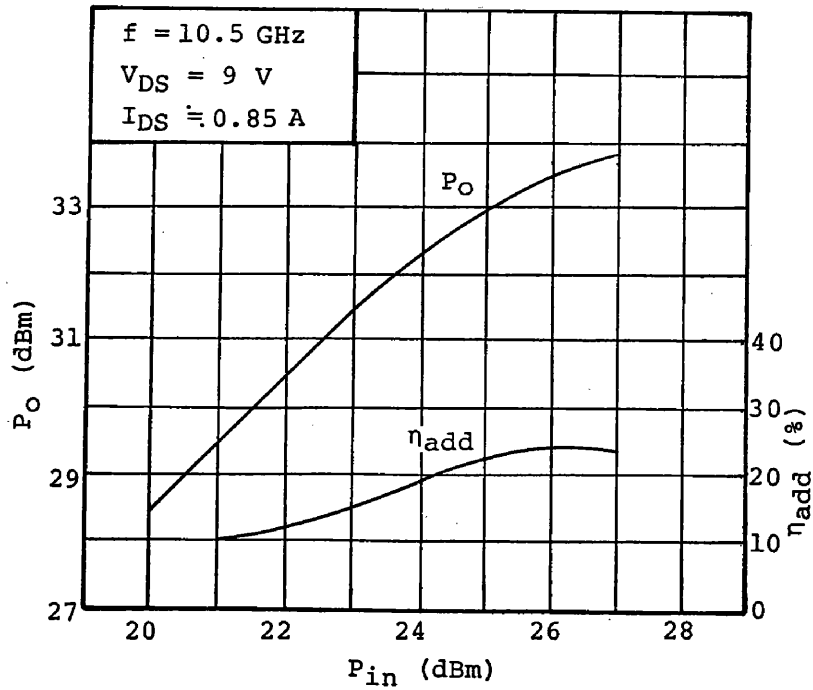
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C .

RF PERFORMANCES

Output Power vs. Frequency

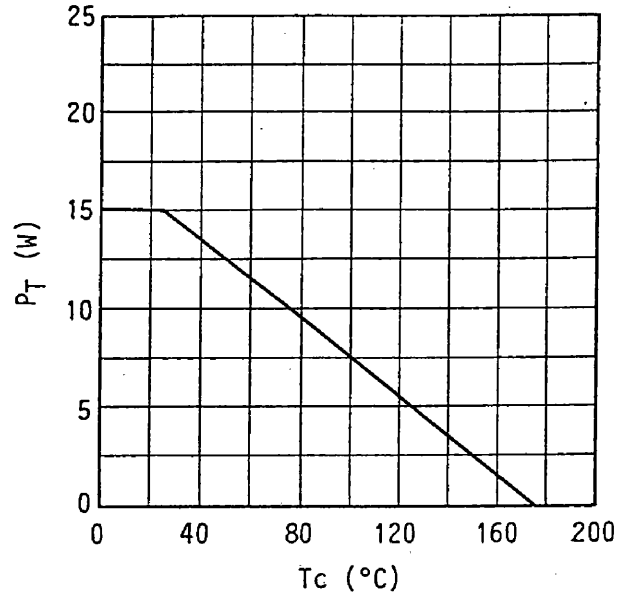


Output Power vs. Input Power



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POWER DISSIPATION VS. CASE TEMPERATURE



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TIM0910-2 S-PARAMETERS (MAGN. and ANGLES)

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

