

TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM0910-8

FEATURES:

- HIGH POWER
P_{1dB} = 39.5 dBm at 9.5 GHz to 10.5 GHz
- BROAD BAND INTERNALLY MATCHED
- HIGH GAIN
G_{1dB} = 6.0 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	38.5	39.5	-
Power Gain at 1 dB Compression Point	G _{1dB}		dB	5.0	6.0	-
Drain Current	I _{DS}		A	-	3.4	4.4
Power Added Efficiency	η _{add}		%	-	22	-
Channel-Temperature Rise	ΔT _{ch}		V _{DS} × I _{DS} × R _{th(c-c)}	°C	-	-

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Trans-conductance	g _m	V _{DS} = 3 V I _{DS} = 4.0 A	mS	-	2400	-
Pinch-off Voltage	V _{GSo} off	V _{DS} = 3 V I _{DS} = 120 mA	V	-2	-3.5	-5
Saturated Drain Current	I _{DSS}	V _{DS} = 3 V V _{GS} = 0 V	A	-	8.0	10.4
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} = -120 μA	V	-5	-	-
Thermal Resistance	R _{th(c-c)}	Channel to Case	°C/W	-	1.6	2.5

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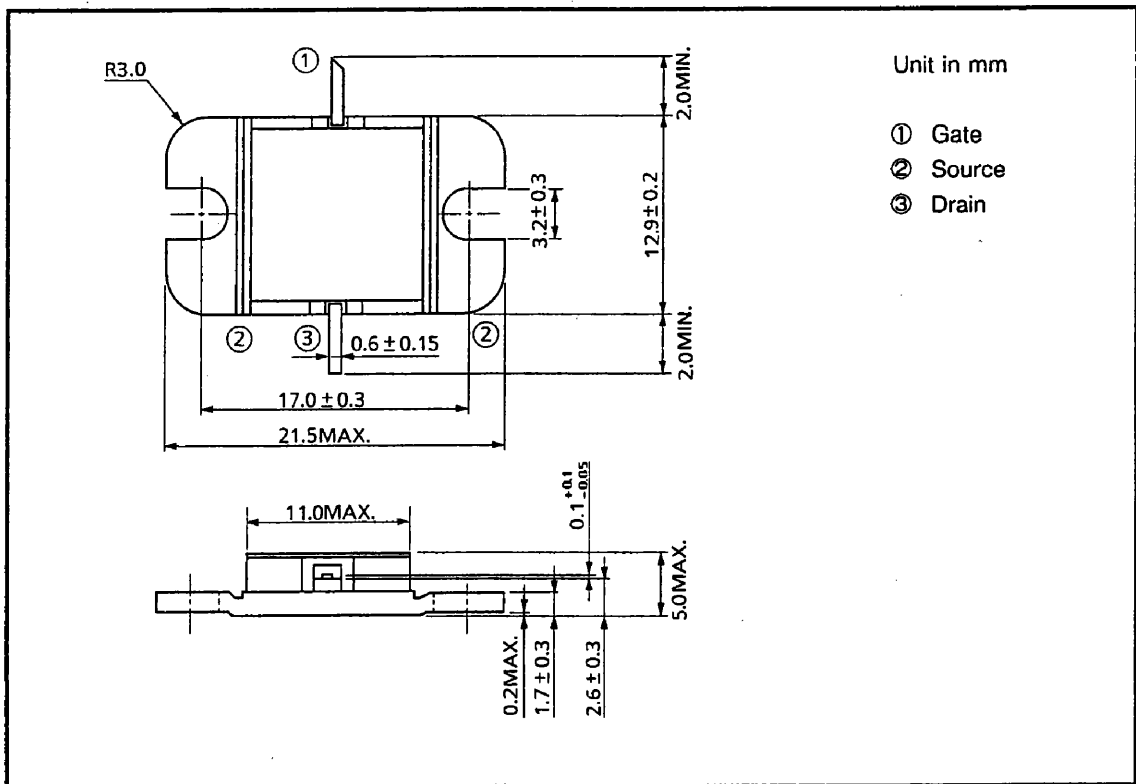
The information contained herein may be changed without prior notice. It is therefore advisable to contact TOSHIBA before proceeding with the design of equipment incorporating this product.

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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	10.4
Total Power Dissipation ($T_c=25^\circ\text{C}$)	P_T	W	60
Channel Temperature	T_{ch}	$^\circ\text{C}$	175
Storage Temperature	T_{stg}	$^\circ\text{C}$	-65~175

PACKAGE OUTLINE (2-11C1B)

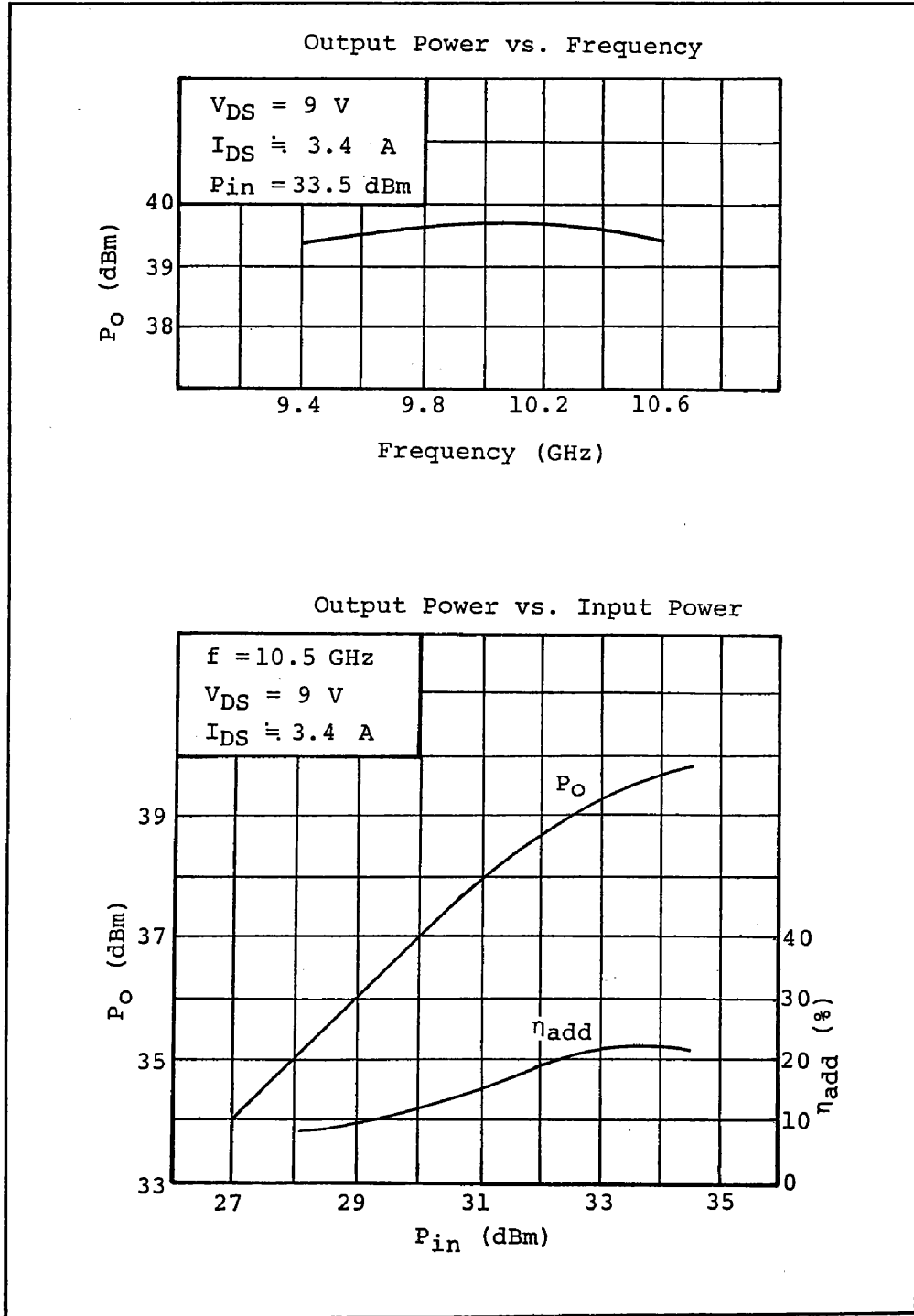


HANDLING PRECAUTIONS FOR PACKAGED TYPE

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

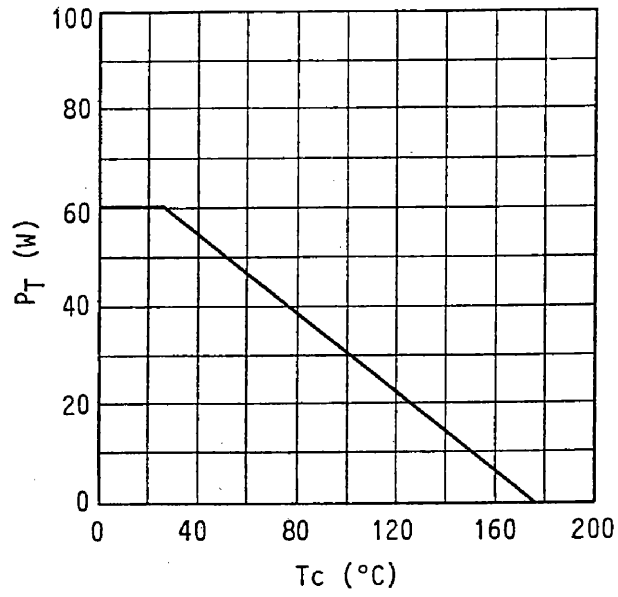
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RF PERFORMANCES



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POWER DISSIPATION VS. CASE TEMPERATURE



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TIM0910-8 S-PARAMETERS (MAGN. and ANGLES)

$V_{DS} = 9 \text{ V}$, $I_{DS} = 3.4 \text{ A}$

