

TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM8596-2

FEATURES:

- HIGH POWER
P_{1dB} = 33.5 dBm at 8.5 GHz to 9.6 GHz
- BROAD BAND INTERNALLY MATCHED
- HIGH GAIN
G_{1dB} = 7.5 dB at 8.5 GHz to 9.6 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 = 8.5 -9.6 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	g _m	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 _{GS0}	I _{GS} = -30 μA	V	-5	-	-
Thermal Resistance	R _{th(c-c)}	Channel to Case	°C/W	-	5	6

- * The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of TOSHIBA or others.
- * 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.

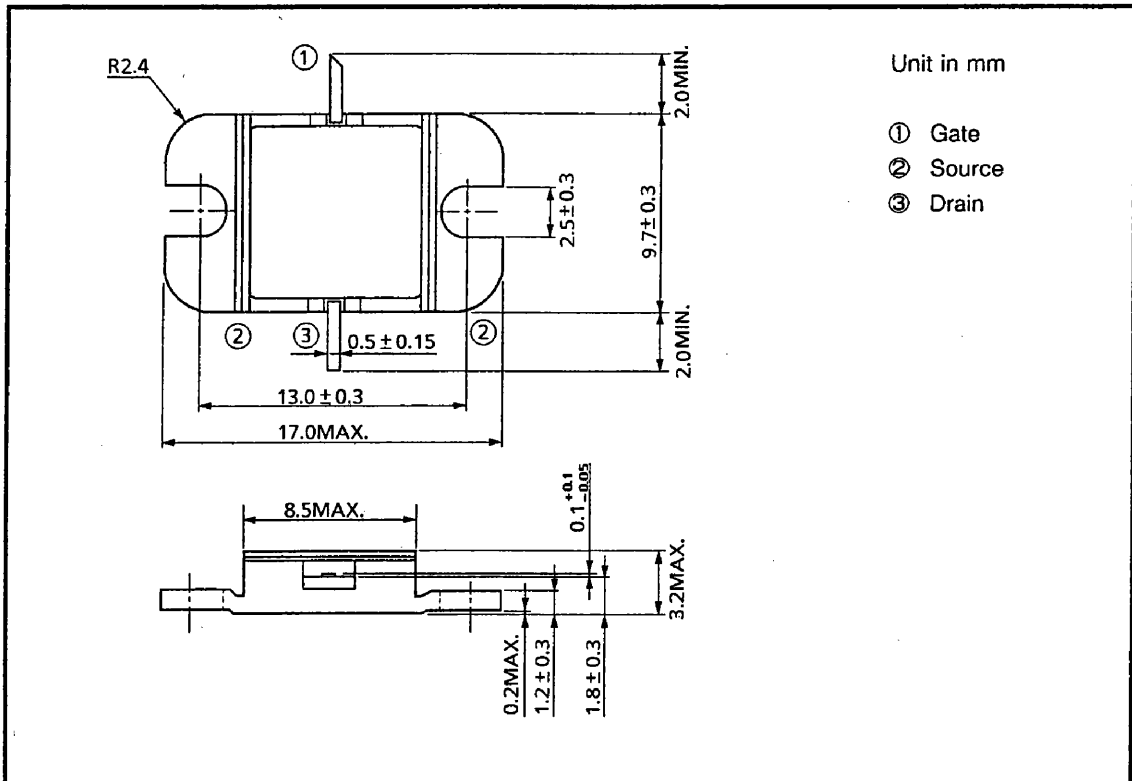


TIM8596-2

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

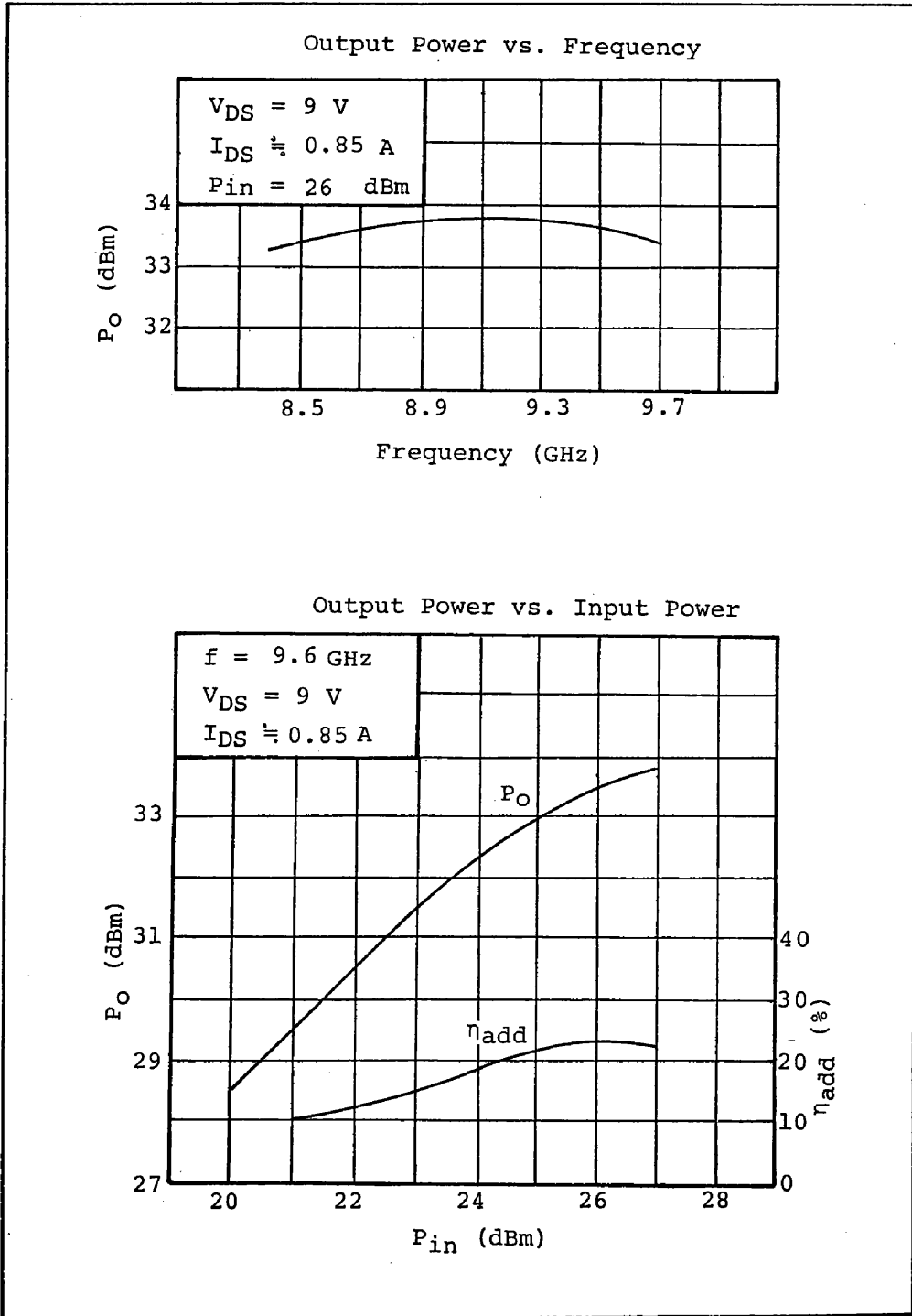
PACKAGE OUTLINE (2-9D1B)



HANDLING PRECAUTIONS FOR PACKAGED TYPE

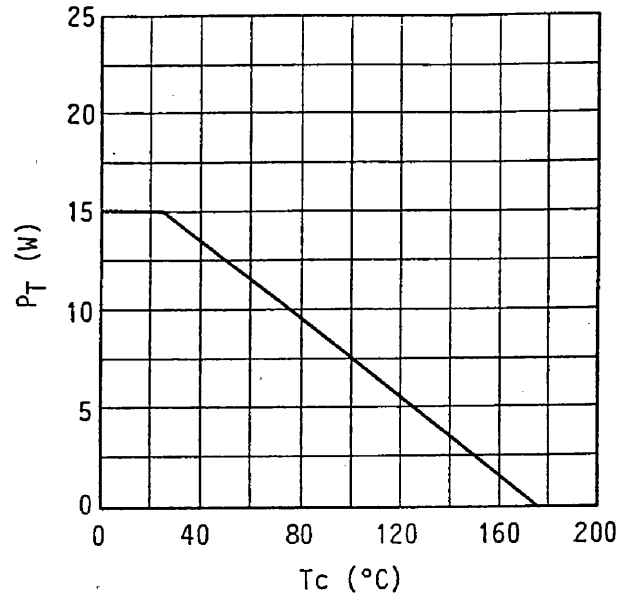
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C .

RF PERFORMANCES



TIM8596-2

POWER DISSIPATION VS. CASE TEMPERATURE



TIM8596-2

TIM8596-2 S-PARAMETERS (MAGN. and ANGLES)

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

