

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 _{GSO}	I _{GS} = -30 μA	V	-5	-	-
Thermal Resistance	R _{th(c-c)}	Channel to Case	°C/W	-	5	6

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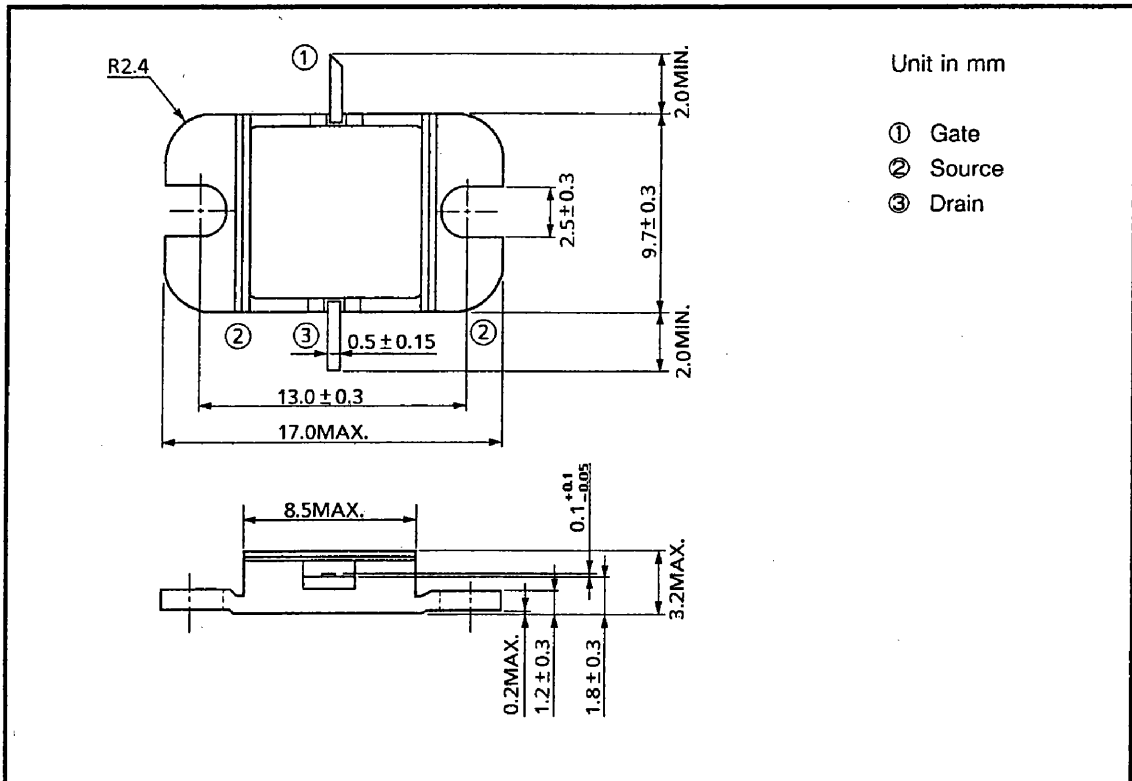


TIM8596-2

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 _{DS}	A	2.6
Total Power Dissipation (T _C =25°C)	P _T	W	15
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65~175

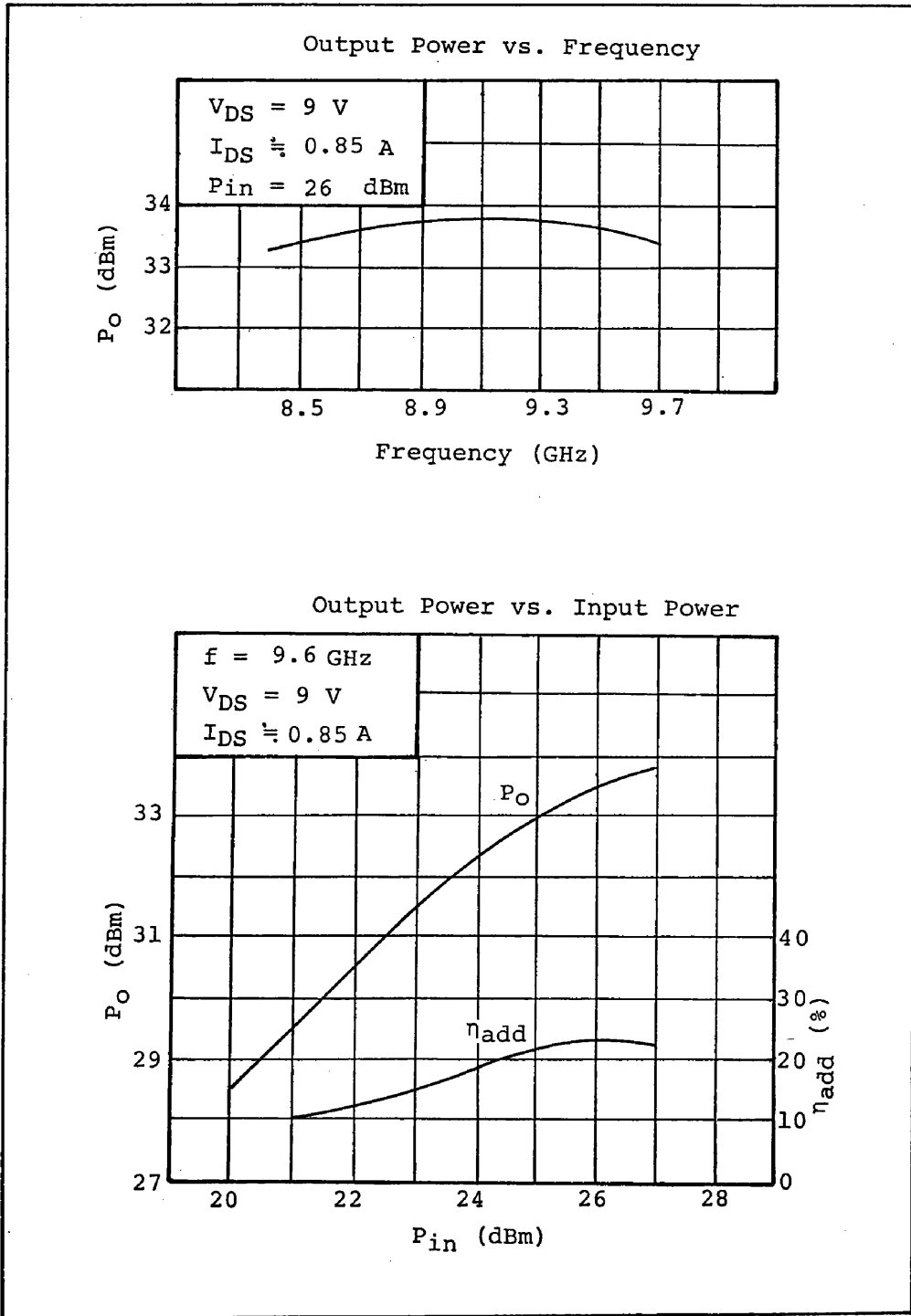
PACKAGE OUTLINE (2-9D1B)



HANDLING PRECAUTIONS FOR PACKAGED TYPE

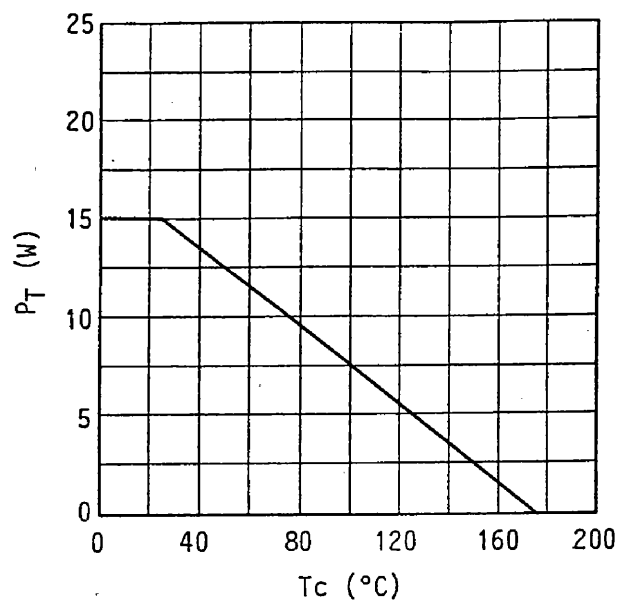
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES



TIM8596-2

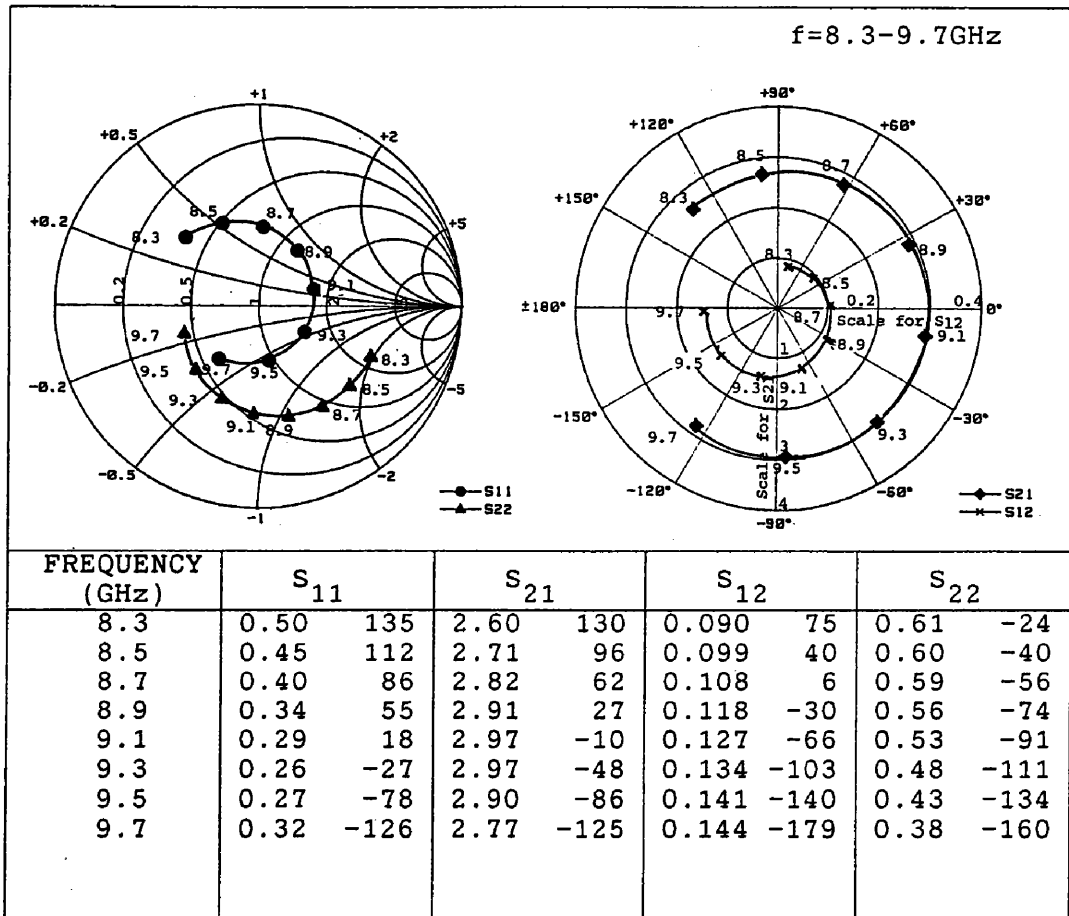
POWER DISSIPATION VS. CASE TEMPERATURE



TIM8596-2

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

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



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