

TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM5964-4A

FEATURES:

■ HIGH POWER
 $P_{1dB} = 36.5 \text{ dBm}$ at 5.9 GHz to 6.4 GHz

■ HIGH GAIN
 $G_{1dB} = 8.5 \text{ dB}$ at 5.9 GHz to 6.4 GHz

■ BROAD BAND INTERNALLY MATCHED

■ HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS ($T_a = 25^\circ\text{C}$)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1 dB Compression Point	P_{1dB}	$V_{DS} = 10V$ $f = 5.9 \sim 6.4 \text{ GHz}$	dBm	36.0	36.5	-
Power Gain at 1 dB Compression Point	G_{1dB}		dB	8.0	8.5	-
Drain Current	I_{DS}		A	-	1.1	1.5
Power Added Efficiency	η_{add}		%	-	35	-
Channel Temperature Rise	ΔT_{ch}	$V_{DS} \times I_{DS} \times R_{th(c-c)}$	$^\circ\text{C}$	-	-	80

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Trans-conductance	gm	$V_{DS} = 3V$ $I_{DS} = 1.5A$	ms	-	900	-
Pinch-off Voltage	V_{GSoff}	$V_{DS} = 3V$ $I_{DS} = 20mA$	V	-2.0	-3.5	-5.0
Saturated Drain Current	I_{DSS}	$V_{DS} = 3V$ $V_{GS} = 0V$	A	-	2.9	3.8
Gate-Source Breakdown Voltage	V_{GSO}	$I_{GS} = -60 \mu A$	V	-5	-	-
Thermal Resistance	$R_{th(c-c)}$	Channel to Case	$^\circ\text{C/W}$	-	4.0	6.0

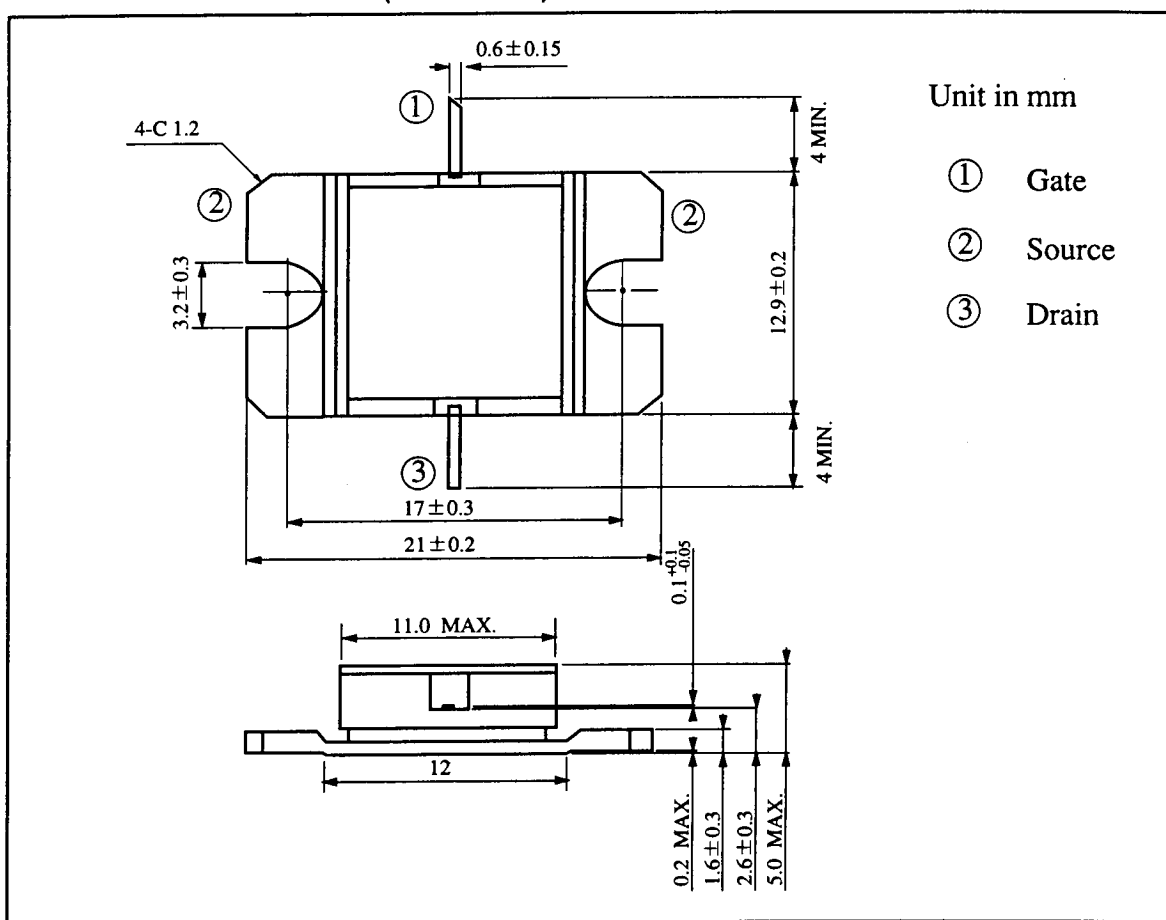
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ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	UNIT	RATING
Drain=Source Voltage	V_{DS}	V	15
Gate=Source Voltage	V_{GS}	V	-5
Drain Current	I_{DS}	A	4
Total Power Dissipation ($T_c=25^\circ\text{C}$)	P_T	W	20
Channel Temperature	T_{ch}	$^\circ\text{C}$	175
Storage Temperature	T_{stg}	$^\circ\text{C}$	-65~175

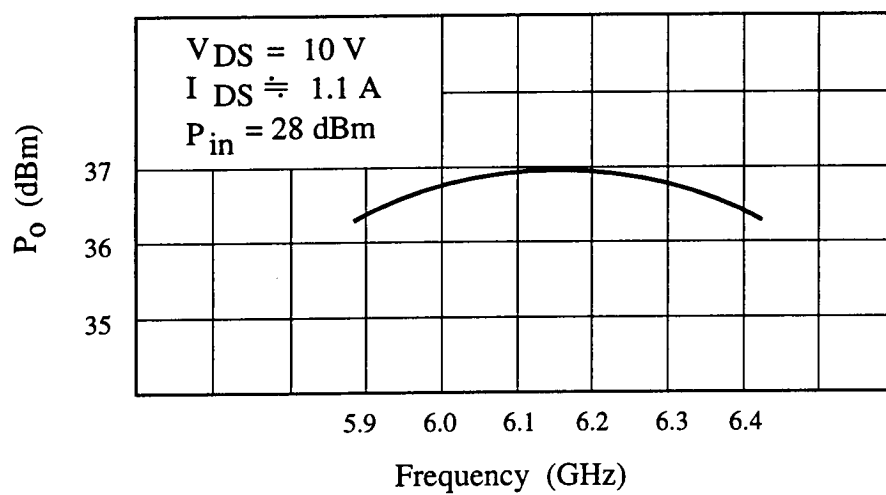
PACKAGE OUTLINE (2-11D1B)

HANDLING PRECAUTIONS FOR PACKAGED TYPE

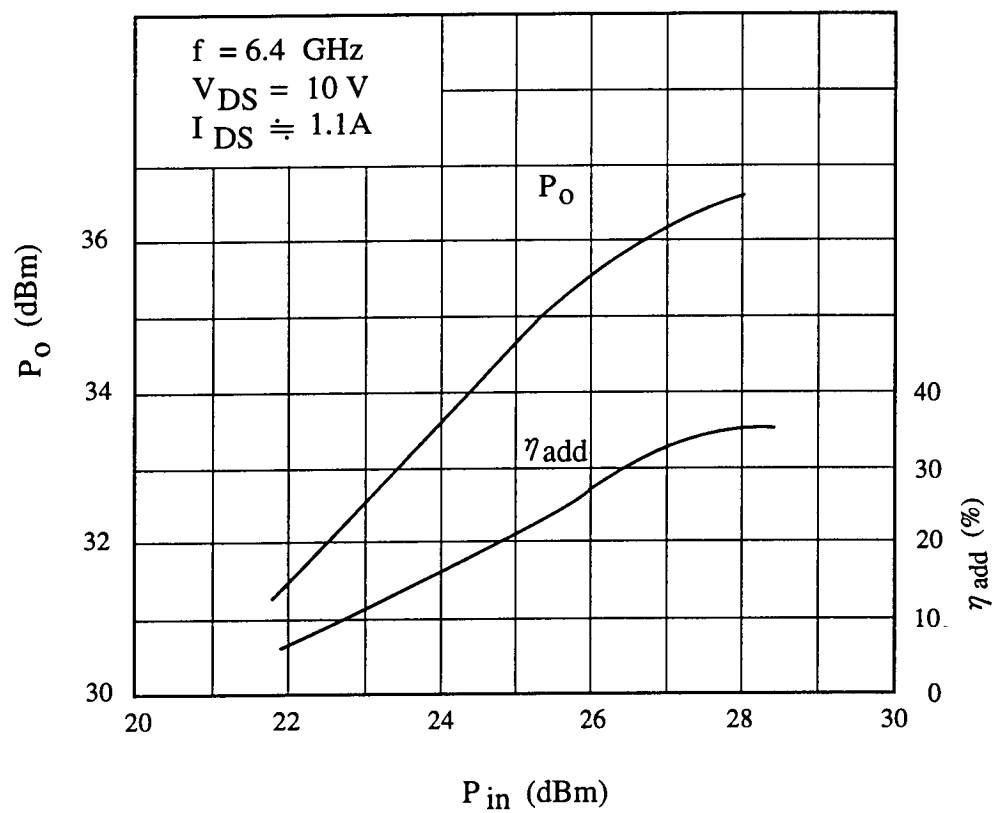
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C .

RF PERFORMANCES

Output Power vs. Frequency



Output Power vs. Input Power



POWER DISSIPATION VS. CASE TEMPERATURE

