## **TOSHIBA**

# MICROWAVE SEMICONDUCTOR TECHNICAL DATA

# MICROWAVE POWER GaAs FET TIM8996-30

#### **FEATURES**

- HIGH POWER
  P1dB=45.0dBm at 8.9GHz to 9.6GHz
- HIGH GAIN
  G1dB=7.0dB at 8.9GHz to 9.6GHz
- **BROAD BAND INTERNALLY MATCHED FET**
- HERMETICALLY SEALED PACKAGE

### RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Gain	P1dB	VDQ 40V	dBm	44.0	45.0	
Compression Point						
Power Gain at 1dB Gain	G1dB	VDS= 10V	dB	6.0	7.0	
Compression Point		IDSset≅7.0A				
Drain Current	IDS1	f = 8.9 to 9.6GHz	Α	_	10.0	11.5
Power Added Efficiency	ηadd		%	_	25	_
Channel Temperature Rise	ΔTch	(VDS X IDS +Pin-P1dB) X Rth(c-c)	°C	_		100

Recommended gate resistance(Rg) : Rg= 10  $\Omega$ (MAX.)

### **ELECTRICAL CHARACTERISTICS** (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V	S		5.5	
		IDS= 9.6A				
Pinch-off Voltage	VGSoff	VDS= 3V	V	-0.7	-2.0	-4.5
		IDS= 290mA				
Saturated Drain Current	IDSS	VDS= 3V	Α		20.0	
		VGS= 0V				
Gate-Source Breakdown	VGSO	IGS= -290μA	V	-5		
Voltage						
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W		1.0	1.1

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

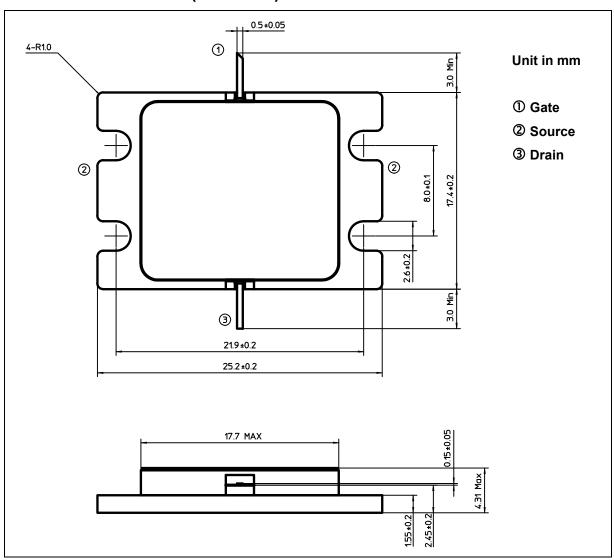
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## ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	А	20
Total Power Dissipation (Tc= 25 °C)	PT	W	136
Channel Temperature	Tch	°C	175
Storage	Tstg	°C	-65 to +175

## PACKAGE OUTLINE (7-AA03A)



#### HANDLING PRECAUTIONS FOR PACKAGE MODEL

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