TOSHIBA

MICROWAVE SEMICONDUCTOR TECHNICAL DATA

MICROWAVE POWER GaAs FET TIM7785-12UL

FEATURES

- ➡ HIGH POWER
 P1dB=41.5dBm at 7.7GHz to 8.5GHz
- HIGH GAIN
 G1dB=8.5dB at 7.7GHz to 8.5GHz
- **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		dBm	40.5	41.5	_
Compression Point						
Power Gain at 1dB Gain	G1dB	VDS= 10V	dB	7.5	8.5	_
Compression Point		IDSset=2.6A				
Drain Current	IDS1	f = 7.5 to 8.5GHz	Α		3.2	3.8
Gain Flatness	ΔG		dB			±0.6
Power Added Efficiency	ηadd		%	_	38	_
3rd Order Intermodulation	IM3	Two Tone Test	dBc	-44	-47	
Distortion		Po=30.5dBm				
Drain Current	IDS2	(Single Carrier Level)	Α		2.6	3.0
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – P1dB) X Rth(c-c)	°C			80

Recommended gate resistance(Rg) : Rg= 100 Ω (MAX.)

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V	S		2.5	_
		IDS= 4.0A				
Pinch-off Voltage	VGSoff	VDS= 3V	V	-1.0	-2.5	-4.0
		IDS= 40mA				
Saturated Drain Current	IDSS	VDS= 3V	Α		7.2	
		VGS= 0V				
Gate-Source Breakdown	VGSO	IGS= -140 _μ A	V	-5		
Voltage		·				
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	_	2.0	2.4

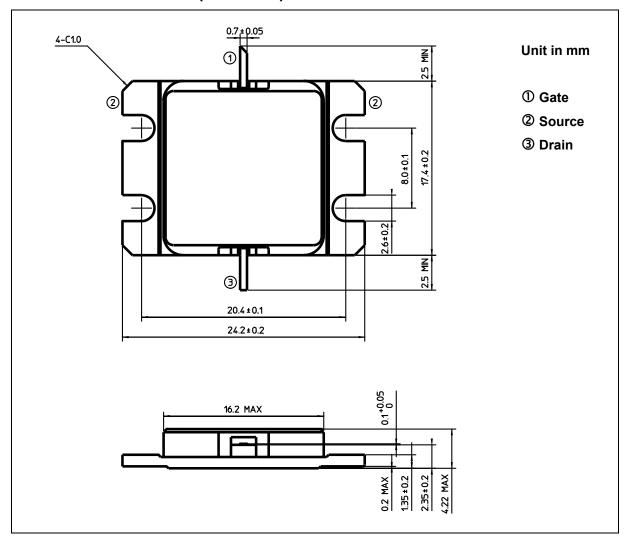
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The information contained herein is subject to change without prior notice. It is therefor advisable to contact TOSHIBA before proceeding with design of equipment incorporating this product.

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	10.0
Total Power Dissipation (Tc= 25 °C)	РТ	W	62.5
Channel Temperature	Tch	°C	175
Storage	Tstg	°C	-65 to +175

PACKAGE OUTLINE (2-16G1B)

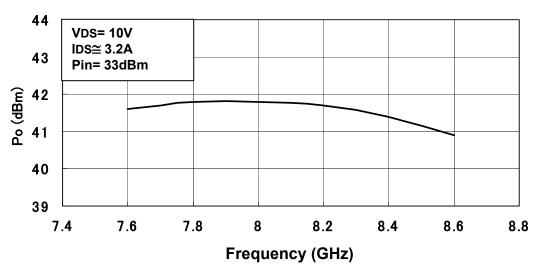


HANDLING PRECAUTIONS FOR PACKAGE MODEL

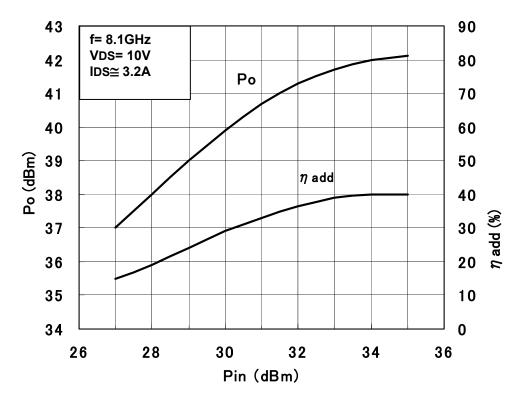
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCE

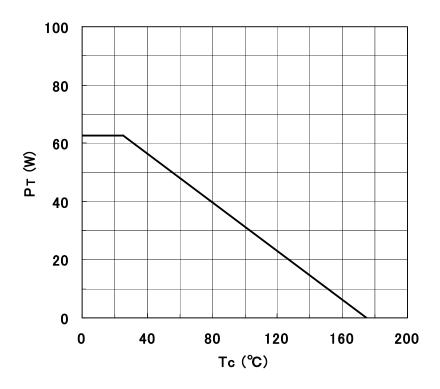
Output Power vs. Frequency



Output Power vs. Input Power



Power Dissipation vs. Case Temperature



IM3 vs. Output Power Characteristics

