

TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM5964-35SLA-251

FEATURES

■ LOW INTERMODULATION DISTORTION

IM3=-45 dBc at Po= 35.0dBm,
Single Carrier Level

■ HIGH POWER

P1dB=45.5dBm at 5.9GHz to 6.75GHz

■ HIGH EFFICIENCY

η_{add} =39% at 5.9 to 6.75GHz

■ HIGH GAIN

G1dB=8.5dB at 5.9GHz to 6.75GHz

■ BROAD BAND INTERNALLY MATCHED

■ HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Compression Point	P1dB	VDS= 10V f = 5.9 - 6.75GHz	dBm	45.0	45.5	—
Power Gain at 1dB Compression Point	G1dB		dB	8.0	9.0	—
Drain Current	IDS1		A	—	8.0	9.0
Gain Flatness	ΔG		dB	—	—	± 0.8
Power Added Efficiency	η_{add}		%	—	39	—
3rd Order Intermodulation Distortion	IM3	Two Tone Test Po=35.0dBm	dBc	-42	-45	—
Drain Current	IDS2	(Single Carrier Level)	A	—	8.0	9.0
Channel Temperature Rise	ΔT_{ch}	VDS X IDS X Rth(c-c)	°C	—	—	100

Recommended gate resistance(Rg) : $R_g = R_{g1}(10 \Omega) + R_{g2}(18 \Omega) = 28 \Omega$ (MAX.)

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 10.5A	mS	—	6500	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 140mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	20	26
Gate-Source Breakdown Voltage	VGSO	IGS= -420 μ A	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	1.0	1.3

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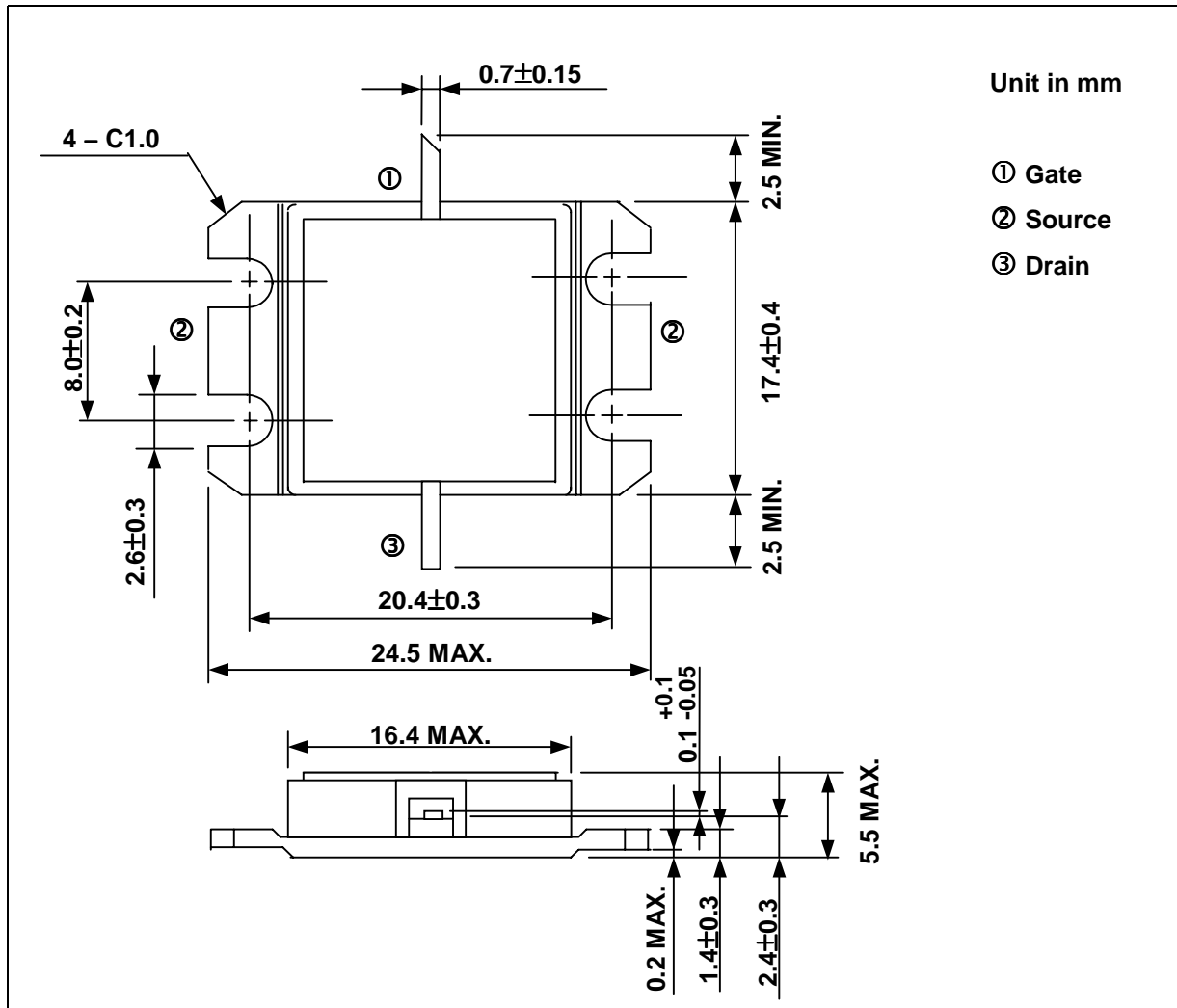
The information contained herein is subject to change without prior notice. It is therefor advisable to contact TOSHIBA before proceeding with design of equipment incorporating this product.



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	A	26
Total Power Dissipation (Tc= 25 °C)	PT	W	115
Channel Temperature	Tch	°C	175
Storage	Tstg	°C	-65 ~ +175

PACKAGE OUTLINE (2-16G1B)

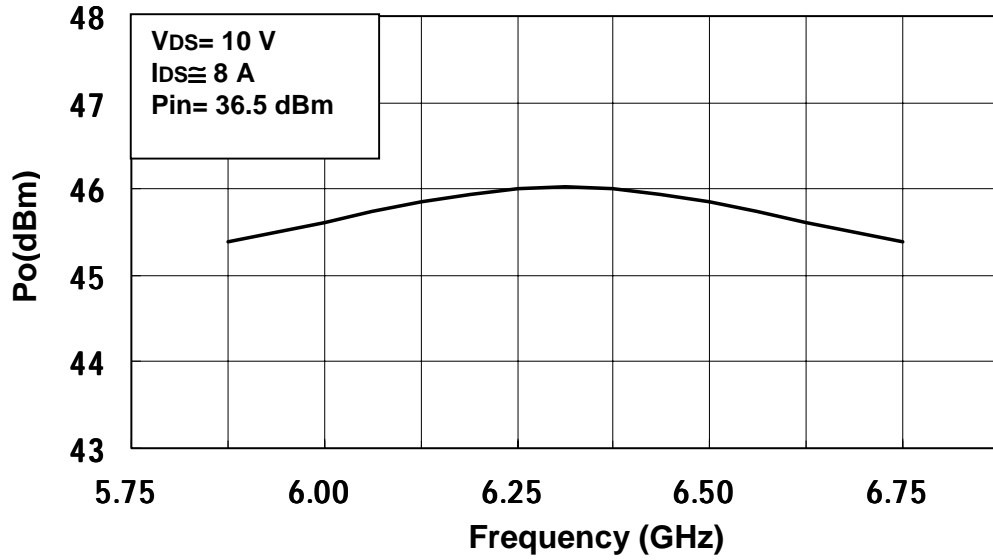


HANDLING PRECAUTIONS FOR PACKAGED TYPE

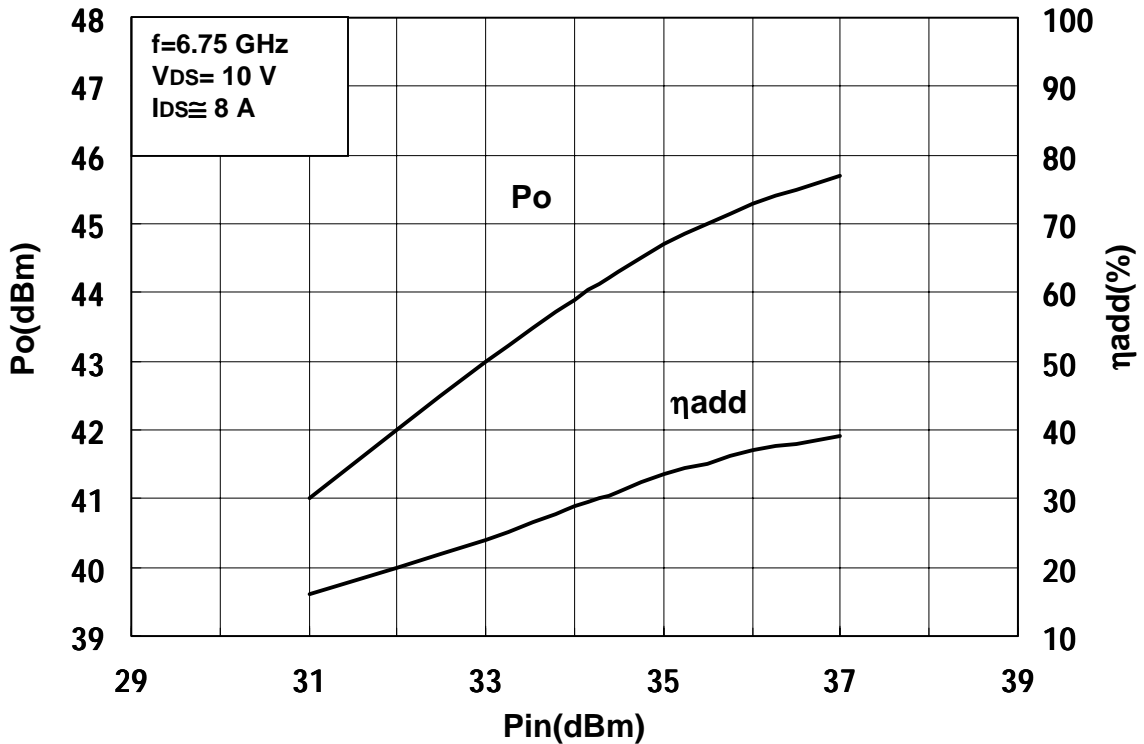
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES

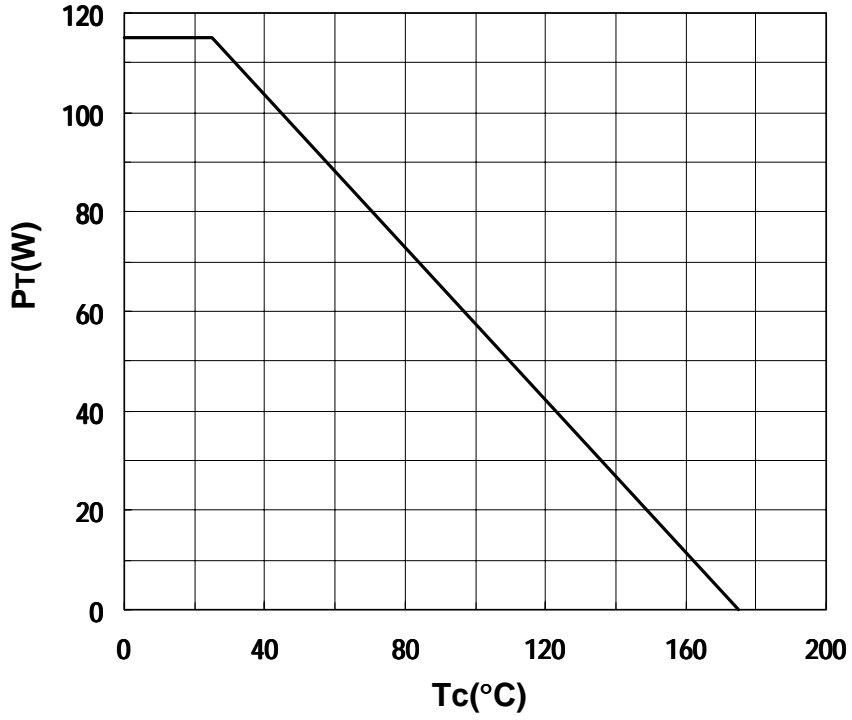
Output Power vs. Frequency



Output Power vs. Input Power



POWER DISSIPATION vs. CASE TEMPERATURE



IM3 vs. OUTPUT POWER CHARACTERISTICS

