TOSHIBA

MICROWAVE SEMICONDUCTOR
TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM5964-16SL-081

FEATURES

- LOW INTERMODULATION DISTORTION
  IM3=-45dBc at Po=31.5dBm
  Single Carrier Level
- HIGH POWER
  P1dB=42.5dBm at 5.9GHz to 6.4GHz
- HIGH GAIN
  G1dB=8.0dB at 5.9GHz to 6.4GHz
- BROAD BAND INTERNALLY MATCHED
- HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (Ta=25 °C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Gain Compression Point	P_{1dB}	V_{DS}=10V f = 5.9- 6.4GHz	dBm	42.5	–	–
Power Gain at 1dB Gain Compression Point	G_{1dB}		dB	7.0	8.0	–
Drain Current	I_{DS}		A	–	4.4	5.0
Gain Flatness	ΔG		dB	–	–	±0.8
Power Added Efficiency	ηadd		%	–	34	–
3rd Order Intermodulation Distortion	IM_3	Note 1	dBc	-42	-45	–
Channel Temperature Rise	ΔTch	V_{DS}×I_{DS}×Rth(c-c)	°C	–	–	80

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	V_{DS}=3V I_{DS}=6.0A	mS	–	3600	
Pinch-off Voltage	V_{GSoff}	V_{DS}=3V I_{DS}=60mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	I_{DSS}	V_{DS}=3V V_{GS}=0V	A	–	10.5	14.0
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS}= -200μA	V	-5	–	–
Thermal Resistance	Rth (c-c)	Channel to Case	°C/W	–	1.5	2.0

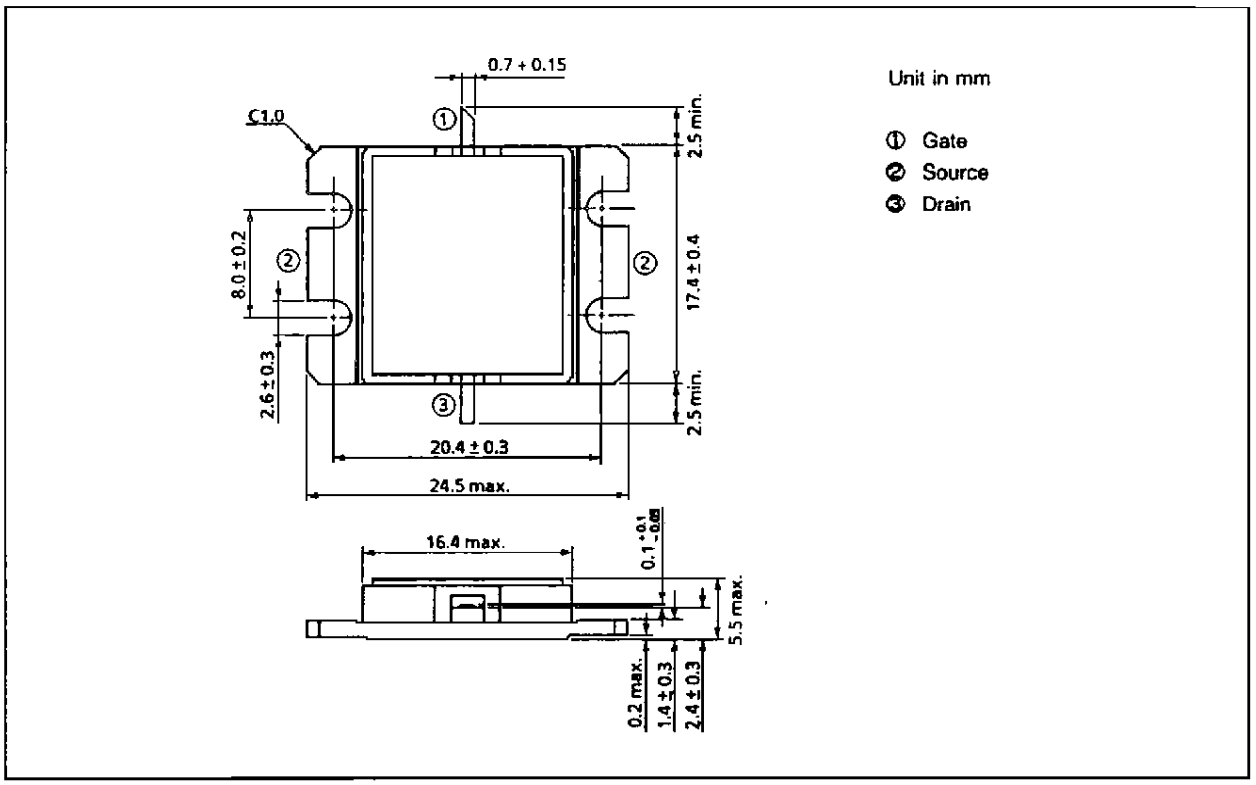
Note 1: 2 tone test Pout=31.5dBm Single Carrier Level

Recommended Gate Resistance (Rg): Rg=Rg1(50Ω) + Rg2(50Ω)=100Ω (MAX).

ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

CHARACTERISTICS	SYMBOL	RATING	UNIT
Drain – Source Voltage	V_{DS}	15	V
Gate – Source Voltage	V_{GS}	-5	V
Drain Current	I_{DS}	14	A
Total Power Dissipation (Tc=25 °C)	Pt	75	W
Channel Temperature	Tch	175	°C
Storage Temperature	Tstg	-65 ~ +175	°C

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.