

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	η_{add}		%	-	34	-
3 rd Order Intermodulation Distortion	IM_3	Note 1	dBc	-42	-45	-
Channel Temperature Rise	ΔT_{ch}	$V_{DS} \times I_{DS} \times R_{th}(c-c)$	°C	-	-	80

ELECTRICAL CHARACTERISTICS (Ta=25°C)

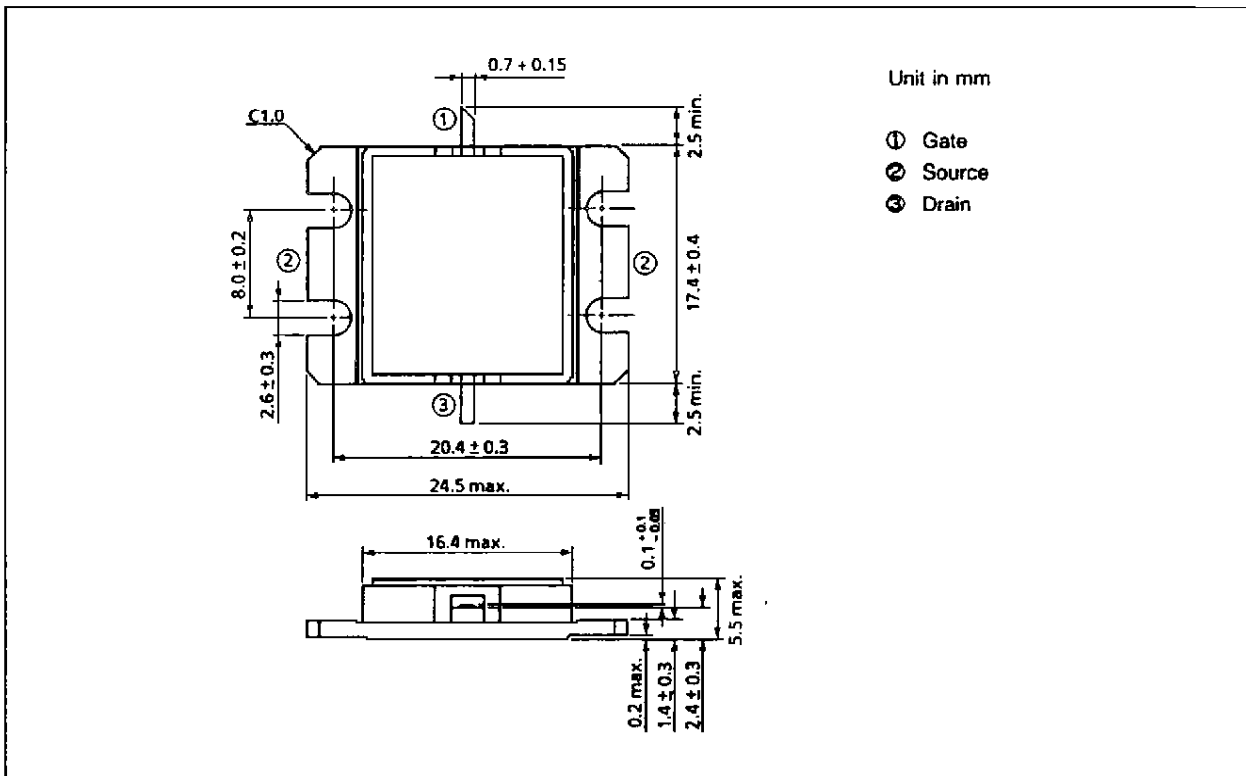
CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	$V_{DS}=3V$ $I_{DS}=6.0A$	mS	-	3600	
Pinch-off Voltage	V_{GSoff}	$V_{DS}=3V$ $I_{DS}=60mA$	V	-1.0	-2.5	-4.0
Saturated Drain Current	I_{DSS}	$V_{DS}=3V$ $V_{GS}=0V$	A	-	10.5	14.0
Gate-Source Breakdown Voltage	V_{GSO}	$I_{GS} = -200\mu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

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

Recommended Gate Resistance (Rg): $R_g = R_{g1}(50\Omega) + R_{g2}(50\Omega) = 100\Omega$ (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.

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