TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM3742-4SL-341

PRELIMINARY

FEATURES

- **HIGH POWERT**
  P1dB=36.5dBm at 3.3GHz to 3.6GHz
- **HIGH GAIN**
  G1dB=10.0dB at 3.3GHz to 3.6GHz
- **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	P_{1dB}	VDS= 10V f= 3.3 to 3.6GHz	dBm	35.5	36.5	—
Power Gain at 1dB Compression Point	G_{1dB}		dB	10.0	—	—
Drain Current	I_{DS1}		A	—	1.1	1.3
Gain Flatness	ΔG		dB	—	—	±0.6
Power Added Efficiency	η_{add}		%	—	37	—
3rd Order Intermodulation Distortion	IM3	NOTE	dBc	-42	-45	—
Drain Current	IDS2		A	—	1.1	1.3
Channel Temperature Rise	ΔTch	V_{DS} X I_{DS} X $R_{th(c-c)}$	°C	—	—	80

NOTE : Two Tone Test, Po=25.5dBm (Single Carrier Level)

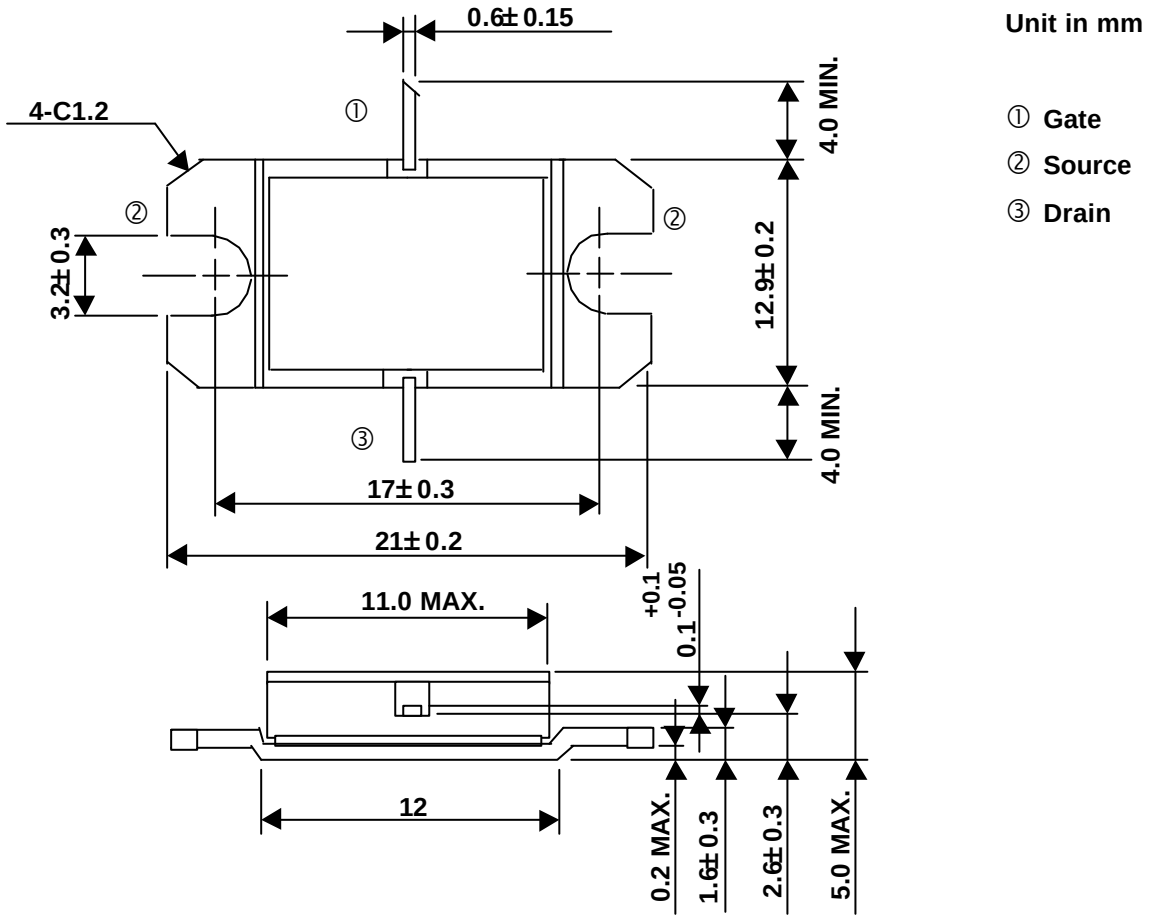
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	V_{DS}= 3V I_{DS}= 1.5A	mS	—	900	—
Pinch-off Voltage	V_{GSoff}	V_{DS}= 3V I_{DS}= 15mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	I_{DSS}	V_{DS}= 3V V_{GS}= 0V	A	—	2.6	3.5
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS}= -50μA	V	-5	—	—
Thermal Resistance	$R_{th(c-c)}$	Channel to Case	°C/W	—	4.5	6.5

ABSOLUTE MAXIMUM RATINGS (Ta= 25° C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V_{DS}	V	15
Gate-Source Voltage	V_{GS}	V	-5
Drain Current	I_{DS}	A	3.5
Total Power Dissipation (Tc= 25 °C)	P_T	W	23.0
Channel Temperature	T_{ch}	°C	175
Storage Temperature	T_{stg}	°C	-65 to +175

PACKAGE OUTLINE (2-11D1B)



HANDLING PRECAUTIONS FOR PACKAGED TYPE

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