

### Low Distortion Internally Matched Power GaAs FETs (C-Band)

#### Features

- Low intermodulation distortion
  - $IM_3 = -45$  dBc at  $P_o = 31.5$  dBm,
  - Single carrier level
- High power
  - $P_{1dB} = 42.5$  dBm at 6.4 GHz to 7.2 GHz
- High gain
  - $G_{1dB} = 6.5$  dB at 6.4 GHz to 7.2 GHz
- Broad band internally matched
- Hermetically sealed package

#### RF Performance Specifications ( $T_a = 25^\circ\text{C}$ )

Characteristics	Symbol	Condition	Unit	Min.	Typ.	Max
Output Power at 1dB Compression Point	$P_{1dB}$	$V_{DS} = 10V$ $f = 6.7 \sim 7.2$ GHz	dBm	41.5	42.5	–
Power Gain at 1dB Compression Point	$G_{1dB}$		dB	5.5	6.5	–
Drain Current	$I_{DS1}$		A	–	4.8	5.5
Gain Flatness	$\Delta G$		dB	–	–	$\pm 0.8$
Power Added Efficiency	$\eta_{add}$		%	–	29	–
3rd Order Intermodulation Distortion	$IM_3$	Note 1	dBc	-42	-45	–
Drain Current	$I_{DS2}$		A	–	4.8	5.5
Channel-Temperature Rise	$\Delta T_{ch}$	$V_{DS} \times I_{DS} \times R_{th}(c-c)$	$^\circ\text{C}$	–	–	80

#### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Condition	Unit	Min.	Typ.	Max
Trans-conductance	gm	$V_{DS} = 3V$ $I_{DS} = 6.0A$	mS	–	3600	–
Pinch-off Voltage	$V_{GSoff}$	$V_{DS} = 3V$ $I_{DS} = 80mA$	V	-2	-3.5	-5.0
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 3V$ $V_{GS} = 0V$	A	–	11.6	15.0
Gate-Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -240\mu A$	V	-5	–	–
Thermal Resistance	$R_{th}(c-c)$	Channel to Case	$^\circ\text{C}/W$	–	1.4	1.8

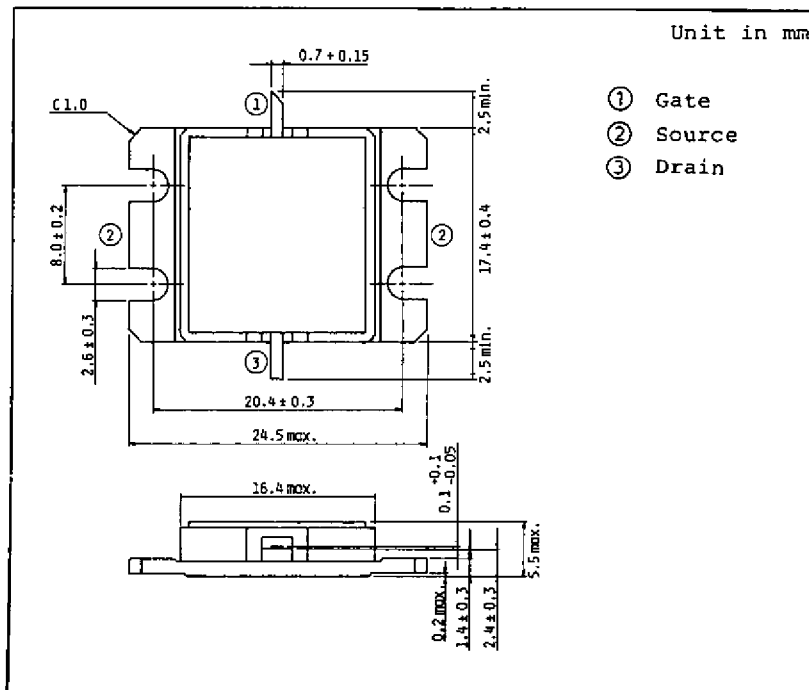
Note 1: 2 tone Test Pout = 31.5dBm Single Carrier Level.

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**Absolute Maximum Ratings (Ta = 25° C)**

Characteristic	Symbol	Unit	Rating
Drain-Source Voltage	V <sub>DS</sub>	V	15
Gate-Source Voltage	V <sub>GS</sub>	V	-5
Drain Current	I <sub>DS</sub>	A	16
Total Power Dissipation (T <sub>c</sub> = 25°C)	P <sub>T</sub>	W	70
Channel Temperature	T <sub>ch</sub>	°C	175
Storage Temperature	T <sub>stg</sub>	°C	-65~175

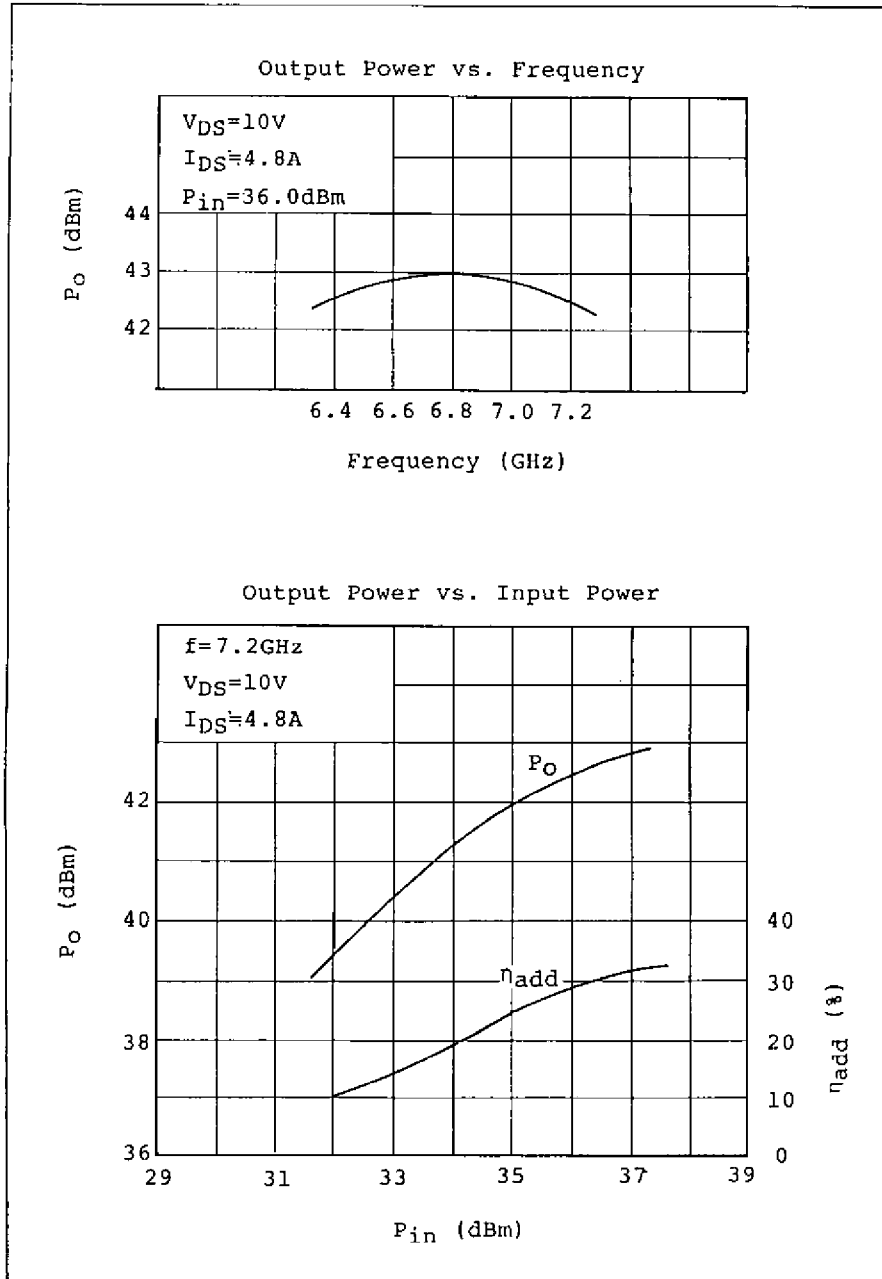
**Package Outline (2-16G1B)**



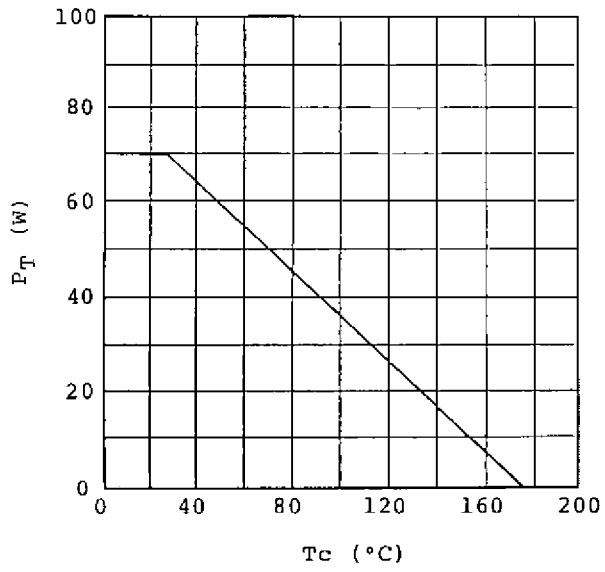
**Handling Precautions for Packaged Type**

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

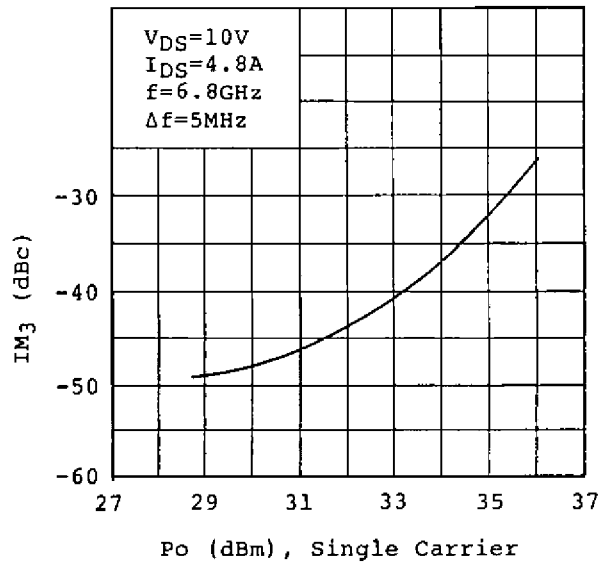
## RF Performances



Power Dissipation vs. Case Temperature



$IM_3$  vs. Output Power Characteristics



TIM6472-16L S-Parameters  
(MAGN. and ANGLES)

$V_{DS}=10V, I_{DS}=4.0A$

