

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

- Low intermodulation distortion
 - $IM_3 = -42$ dBc at $P_o = 31.5$ dBm,
 - Single carrier level
- High power
 - $P_{1dB} = 42$ dBm at 7.1 GHz to 7.9 GHz
- High gain
 - $G_{1dB} = 5.0$ dB at 7.1 GHz to 7.9 GHz
- 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}	$V_{DS} = 10V$ $f = 7.1 \sim 7.9$ GHz	dBm	41.0	42.5	—
Power Gain at 1dB Compression Point	G_{1dB}		dB	4.0	5.0	—
Drain Current	I_{DS1}		A	—	4.5	5.5
Gain Flatness	ΔG		dB	—	—	±0.8
Power Added Efficiency	η_{add}		%	—	24	—
3rd Order Intermodulation Distortion	IM_3		dBc	-38	-42	—
Drain Current	I_{DS2}	Note 1	A	—	4.5	5.5
Channel-Temperature Rise	ΔT_{ch}		$V_{DS} \times I_{DS} \times R_{th}(c-c)$	°C	—	80

Electrical Characteristics (Ta = 25° 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	°C/W	—	1.4	1.8

Note 1: 2 tone Test $P_{out} = 31.5$ dBm Single Carrier Level.

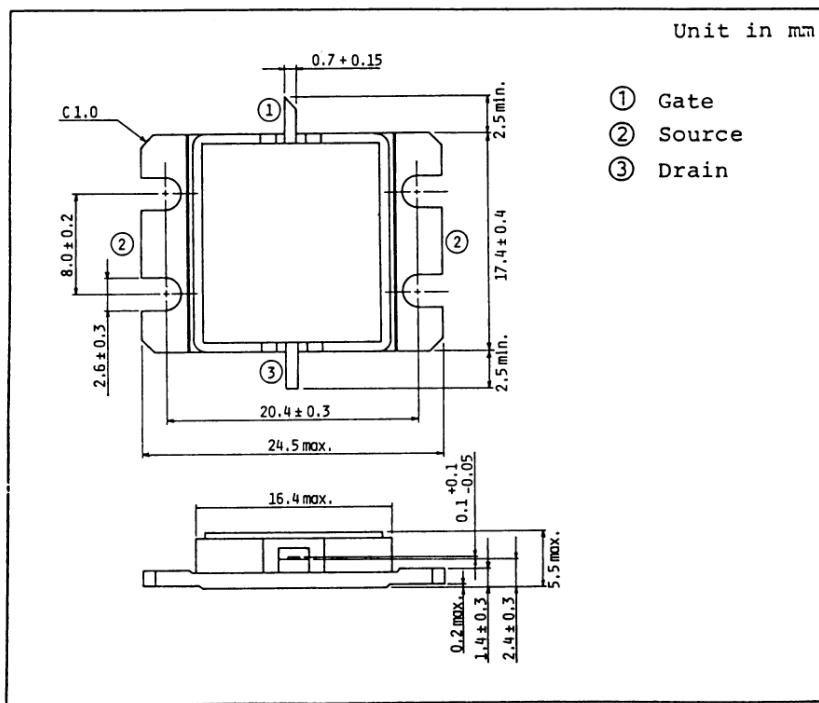
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Absolute Maximum Ratings (Ta = 25° C)

Characteristic	Symbol	Unit	Rating
Drain-Source Voltage	V _{DS}	V	15
Gate-Source Voltage	V _{GS}	V	-5
Drain Current	I _{DS}	A	16
Total Power Dissipation (T _c = 25°C)	P _T	W	70
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65~175

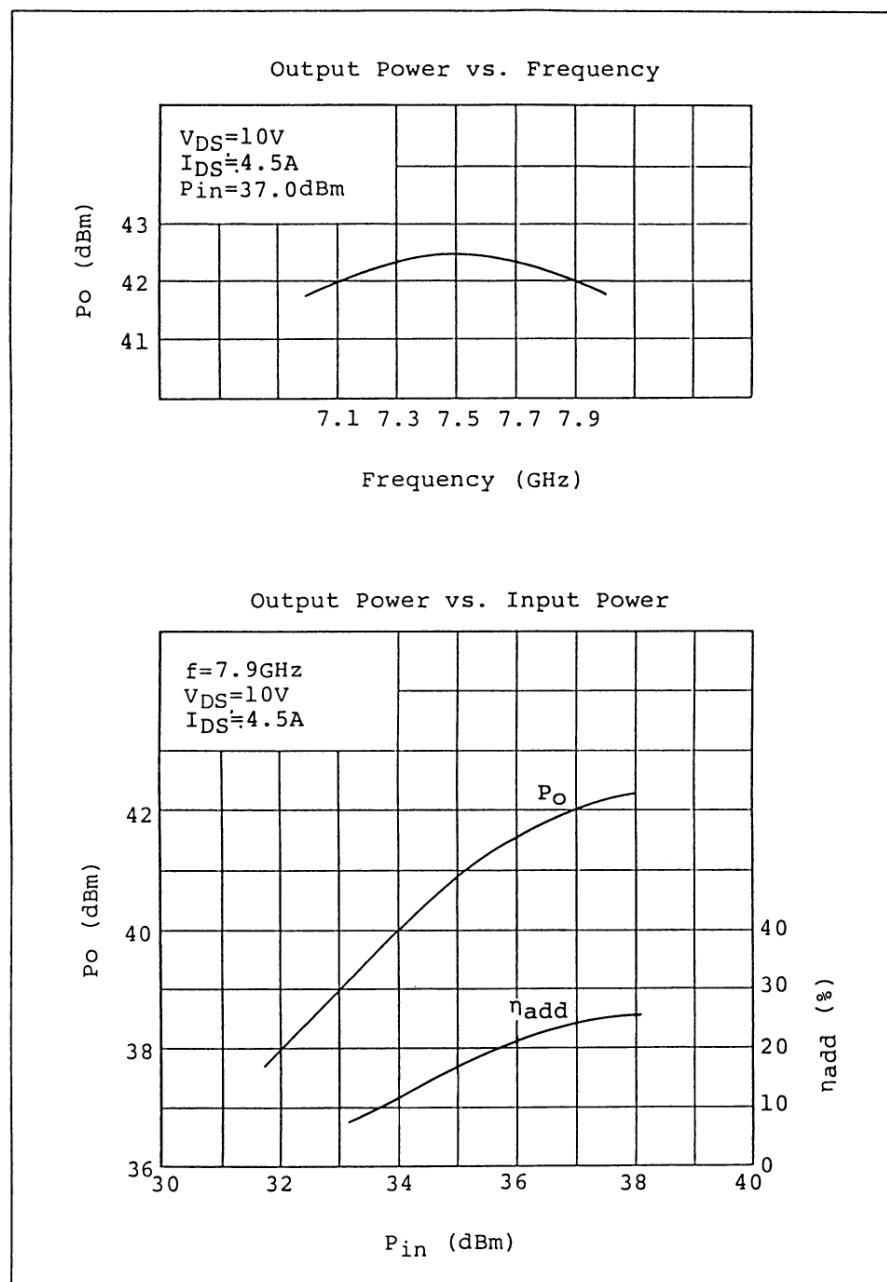
Package Outline (2-16G1B)

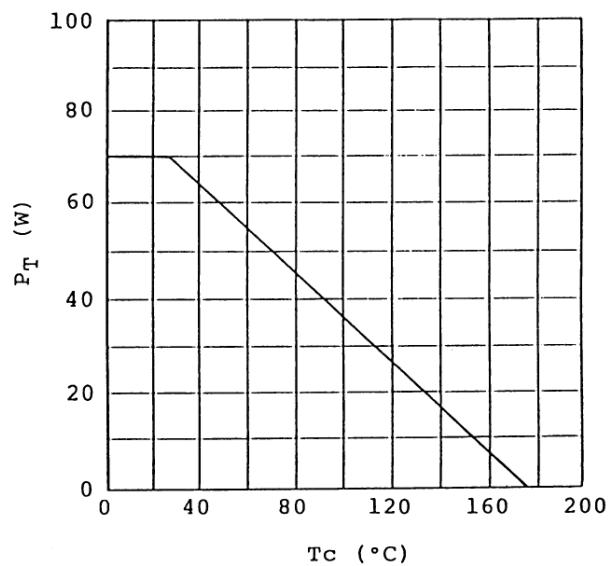
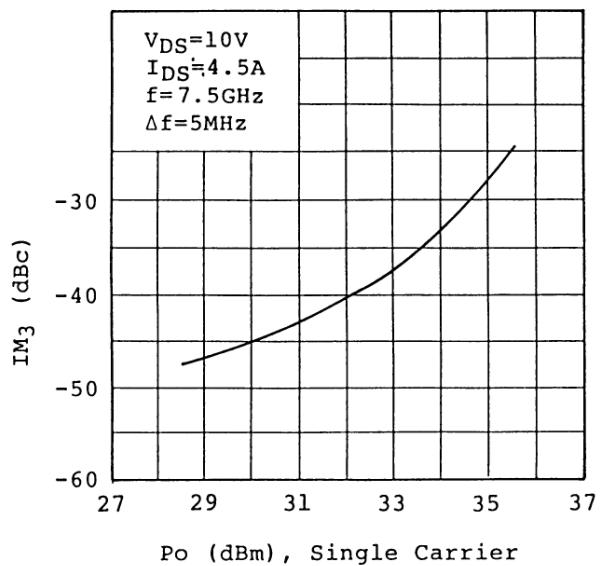


Handling Precautions for Packaged Type

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

RF Performances



Power Dissipation vs. Case Temperature**IM₃ vs. Output Power Characteristics**

TIM7179-16L S-Parameters
(MAGN. and ANGLES)

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

$f = 6.7-8.3$ GHz

