

CFH2162-P3

1.8 to 2.0 GHz
+36 dBm Power GaAs FET

Discontinued

Advanced Product Information
May 1996 (1 of 2)

Features

- ❑ High Gain
- ❑ +36 dBm Power Output
- ❑ Proprietary Power FET Process
- ❑ >45% Linear Power Added Efficiency
- ❑ +33 dBm with 30 dBc Third Order Products

Applications

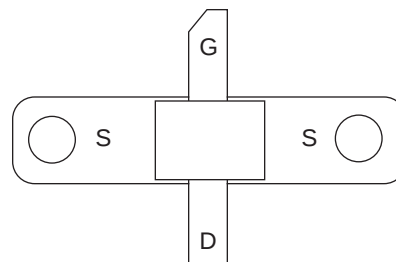
- ❑ PCS/PCN Base Stations
- ❑ Wireless Local Loop

Description

The CFH2162-P3 is a high-gain, linear FET intended for driver amplifier applications in high-power systems, and output stage usage in medium power applications at power levels up to +36 dBm. The device is easily matched and pro-

1.8 to 2.0 GHz +36 dBm Power GaAs FET

Package Diagram



vides excellent linearity at 4 Watts. Manufactured in Celeritek's proprietary power FET process, this device is assembled in a power flange package.

Specifications (TA = 25°C) The following specifications are guaranteed at room temperature in Celeritek test fixture at 1.95 GHz.

Parameters	Conditions	Min	Typ	Max	Units
V_d = 10V, I_d = 1100 mA (Quiescent)					
P _{-1dB}		36.0	37.0	—	dBm
G _{-1 dB}		13.0	14.0	—	dB
3rd Order Products ⁽¹⁾		30	35	—	dBc
Efficiency	@ P _{1dB}	—	45	—	%
V_d = 8V, I_d = 1300 mA (Quiescent)					
P _{-1dB}		—	36.0	—	dBm
G _{-1 dB}		—	13.0	—	dB

Parameters	Conditions	Min	Typ	Max	Units
g _m	V _{ds} = 2.0V, V _{gs} = 0V	—	1700	—	mS
I _{dss}	V _{ds} = 2.0V, V _{gs} = 0V	—	2.8	—	A
V _p	V _{ds} = 3.0V, I _{ds} = 65 mA	—	-1.8	—	Volts
BV _{GD}	I _{gd} = 6.5 mA	20	24	—	Volts
Θ _{JL} (2)	@150°C TCH	—	8	—	°C/W

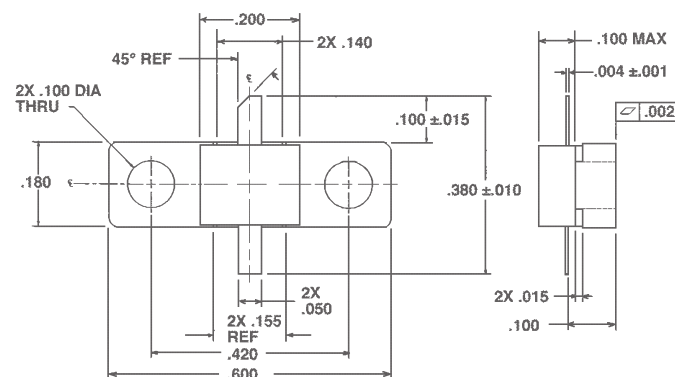
Absolute Maximum Ratings

Parameter	Symbol	Rating
Drain-Source Voltage	V _{DS}	15V ⁽³⁾
Gate-Source Voltage	V _{GS}	-5V
Drain Current	I _{DS}	I _{dss}
Continuous Dissipation	P _T	10W
Channel Temperature	T _{CH}	175°C
Storage Temperature	T _{STG}	-65°C to +175°C

Notes:

- Sum to two tones with 1 MHz spacing = 33 dBm.
- See thermal considerations information.
- Maximum potential difference across the device (V_d + V_g) cannot exceed 18V.

Power Flange Package Physical Dimensions



Ordering Information

The CFH2162-P3 power stage is available in a SOIC-8 surface mount package. Devices are available in tape and reel. Ordering part numbers are listed.

<u>Part Number for Ordering</u>	<u>Function</u>	<u>Package</u>
CFH2162-P3	1.8 - 2.0 GMHz Power Stage	Power flange package

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2.3-2.5 GHz +36 dBm Power GaAs FET



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CFH2162-P5

Handling and Assembly Information

CAUTION! - Mimix Broadband MMIC Products contain gallium arsenide (GaAs) which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not ingest.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

Life Support Policy - Mimix Broadband's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President and General Counsel of Mimix Broadband. As used herein: (1) Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user. (2) A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Package Attachment - This packaged product from Mimix Broadband is provided as a rugged surface mount package compatible with high volume solder installation. Care should be taken not to apply heavy pressure to the top or base material to avoid package damage. Vacuum tools or other suitable pick and place equipment may be used to pick and place this part. Care should be taken to ensure that there are no voids or gaps in the solder connection so that good RF, DC and ground connections are maintained. Voids or gaps can eventually lead not only to RF performance degradation, but reduced reliability and life of the product due to thermal stress.

Mimix Lead-Free RoHS Compliant Program - Mimix has an active program in place to meet customer and governmental requirements for eliminating lead (Pb) and other environmentally hazardous materials from our products. All Mimix RoHS compliant components are form, fit and functional replacements for their non-RoHS equivalents. Lead plating of our RoHS compliant parts is 100% matte tin (Sn) over copper alloy and is backwards compatible with current standard SnPb low-temperature reflow processes as well as higher temperature (260°C reflow) "Pb Free" processes.

Mimix Broadband, Inc., 10795 Rockley Rd., Houston, Texas 77099
Tel: 281.988.4600 Fax: 281.988.4615 mimixbroadband.com

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