



**Preliminary Product Information**  
**December 1997** (1 of 2)

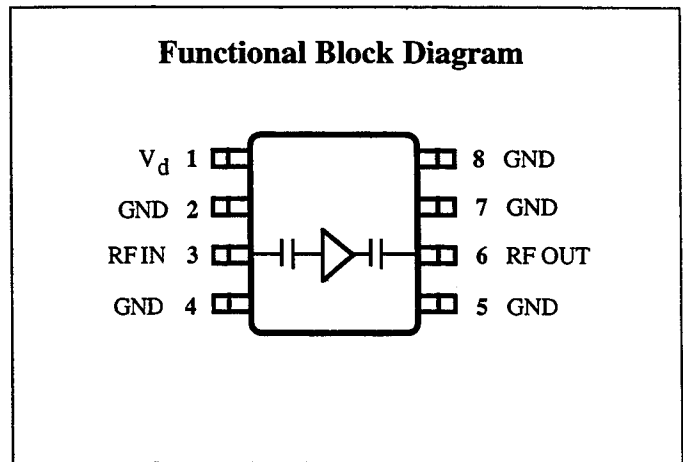
# 800 to 2700 MHz Broadband Driver Amplifier

### Features

- +17.5 dBm Output Power
- Low Current: 70 mA, Typ.
- 800 – 2700 MHz Operation
- Single +3V to +6V Supply
- Input and Output Matched to 50Ω, DC Blocked
- Low-Cost MSOP-8 Plastic Package

### Applications

- Cellular Handsets
- PCS Handsets



### Description

The Celeritek CMM2305 is a flexible broadband driver amplifier. Packaged in a miniature low-cost MSOP-8 package, this device is ideal for cellular and PCS handsets where space and efficiency are primary concerns.

### Absolute Maximum Ratings

Parameter	Rating	Parameter	Rating	Parameter	Rating
Drain Voltage (+V <sub>d</sub> )	+7 V	Power Dissipation	1.0 W	Operating Temperature	-40°C to +85°C
Drain Current (I <sub>d</sub> )	150 mA	Thermal Resistance	55°C/W	Channel Temperature	175°C
RF Input Power	15 dBm	Storage Temperature	-65°C to +150°C	Soldering Temperature	260°C for 5 Sec

### Recommended Operating Conditions

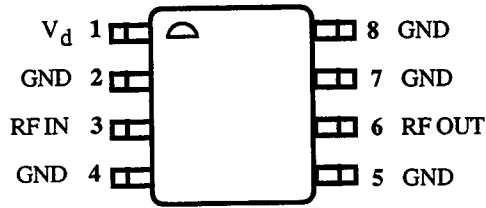
Parameter	Typ	Units	Parameter	Typ	Units
Drain Voltage (+V <sub>d</sub> )	3.0 to 6.0	Volts	Operating Temperature (PC Board)	-40 to +70	°C

### Electrical Characteristics

The following specifications are guaranteed at room temperature with drain voltage (+V<sub>d</sub>) = 5.0 V ±5% at 2.5 GHz.

Parameter	Condition	Min	Typ	Max	Units
Frequency Range		800		2700	MHz
Small Signal Gain		18.5	20		dB
Noise Figure			3.5		dB
Power Output @ 1 dB Compression		15.5	17		dBm
Output 3rd Order Intercept			27		dBm
Input Return Loss			10		dB
Output Return Loss			10		dB
DC Supply Current			70	95	mA
Supply Voltage		3	5	6	V

## Connection Diagram and Pin Description



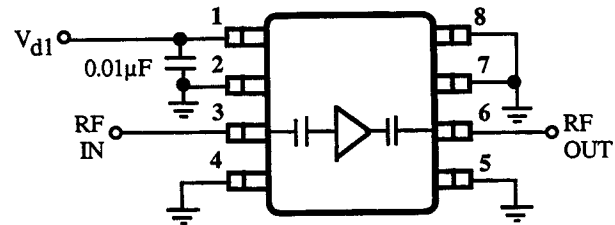
Pin #	Name	Description
1	+V <sub>d</sub>	Drain voltage. Connect to positive supply.
2	GND	Ground.
3	RF IN	RF input (Internally DC blocked).
4	GND	Ground.
5	GND	Ground.
6	RF OUT	RF output (Internally DC blocked).
7	GND	Ground.
8	GND	Ground.

## Test Configuration and Evaluation

Celeritek tests the CMM2305 on an FR4 PC test board. FR4 was chosen for its low loss characteristics at frequencies up to 2.5GHz. Plated through hole connections from the top of the board to the backside ground plane minimizes inductance in the ground connections. These through hole connections are as close as possible to each ground pin.

For evaluation purposes Celeritek offers a prototype evaluation board (PB-CMM2305-AR-0000) for the CMM2305. Please call the factory or a local representative for more information.

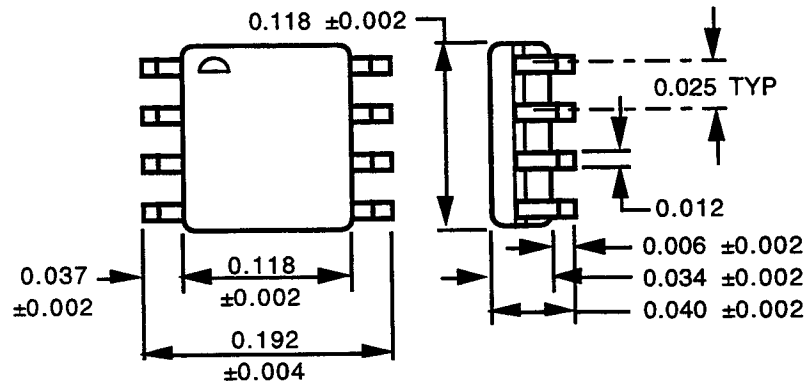
## Test Circuit Diagram



## Handling Precaution

Microwave devices are sensitive to electrostatic discharge. Proper precautions should be taken to avoid ESD damage.

## Physical Dimensions



DIMENSIONS IN INCHES

## Ordering Information

The CMM2305 is available in a surface mount MSOP-8 plastic package.

### Part Number for Ordering

CMM2305-AR-0000

CMM2305-AR-000T

PB-CMM2305-AR-000

### Package

MSOP-8 surface mount narrow body plastic package

MSOP-8 package in tape and reel

Evaluation Board with CMM2305-AR-0000

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