



Product Specifications
June 1995 (1 of 2)

1.7 to 2.5 GHz Driver Amplifier

Features

- ☐ +7 dBm Output Power
- ☐ Internally Matched
- ☐ Internally Biased
- ☐ Single Positive Supply
- ☐ SOIC 8-Pin Plastic Package
- ☐ PCMCIA Compatible

Applications

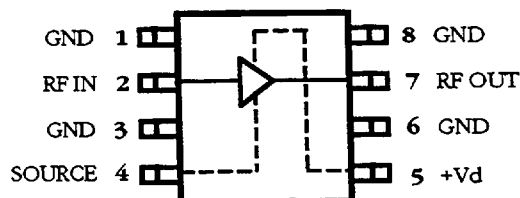
- ☐ Wireless Local Area Networks (WLANs)
- ☐ Portable Wireless Communications
(PCS/PCN, Cordless)
- ☐ Other Wireless Communication Systems

Description

The CMM2302 is a driver amplifier designed to be used as a preamp for a power amplifier in the 1.7 to 2.5 GHz frequency range. The CMM2302 provides an output power of +7 dBm with 10 dB of gain and a current draw of 10 mA. The output power level of the device is set by

adjusting the supply current with an external resistor (R_s). The CMM2302 is internally matched to 50 ohms and internally biased. The only external components required are the current setting resistor and decoupling capacitors. The CMM2302 uses a positive supply only.

Functional Block Diagram



Absolute Maximum Ratings

Parameter	Rating	Parameter	Rating	Parameter	Rating
Drain Voltage (+Vd)	+8V	Power Dissipation	1.5 W	Operating Temperature	-20°C to +70°C
Drain Current (Id)	50 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

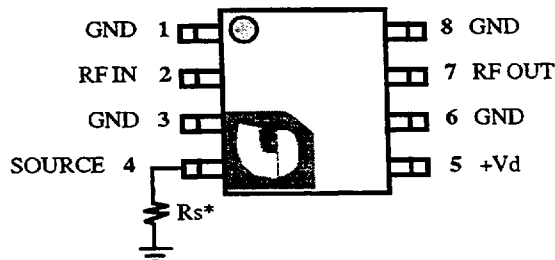
Parameter	Typ	Units	Parameter	Typ	Units
Drain Voltage (+Vd)	3.0 to 5.0	Volts	Operating Temperature (PC Board)	-20 to +70	°C
Drain Current (Id), set by external resistor	10	mA			

Electrical Characteristics

The following specifications are guaranteed at room temperature with drain voltage (+Vd) = 5.0 V \pm 5%, drain current (Id) = 10 mA \pm 10%.

Parameter	Condition	Min	Typ	Max	Units
Frequency Range		1.7		2.5	GHz
Power Output @ 1 dB Compression		4.5	7.0		dBm
Small Signal Gain		9.5	12.0		dB
Input/Output VSWR			2:1		

Connection Diagram and Pin Description



* R_s of 160 Ω will result in $I_d \approx 10$ mA.

Pin #	Name	Description
1	GND	Ground. Should be decoupled as close to package as possible.
2	RF IN	RF input (Internally DC blocked).
3	GND	Ground. Should be decoupled as close to package as possible.
4	SOURCE	FET source. Connect to external resistor.
5	+Vd	Drain voltage. Connect to positive supply.
6	GND	Ground. Should be decoupled as close to package as possible.
7	RF OUT	RF output (Internally DC blocked).
8	GND	Ground. Should be decoupled as close to package as possible.

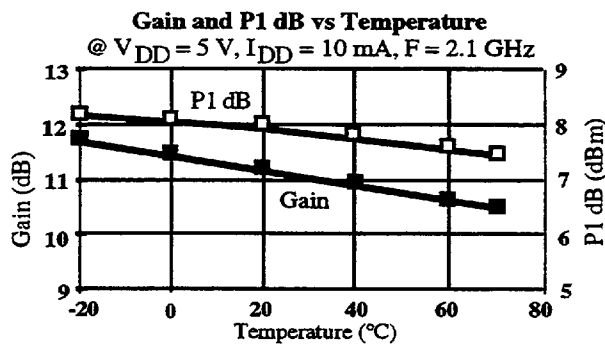
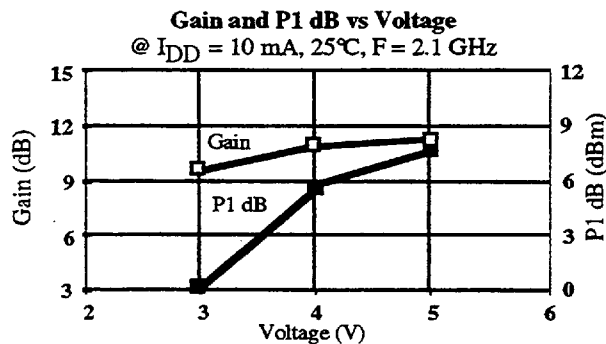
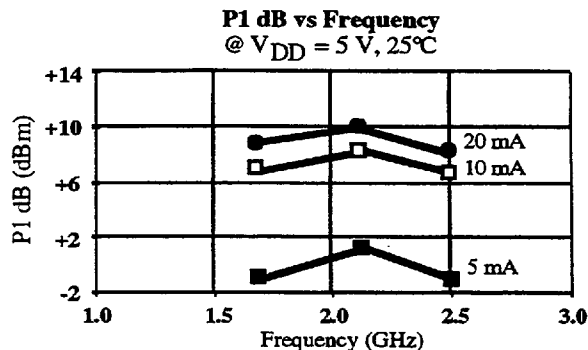
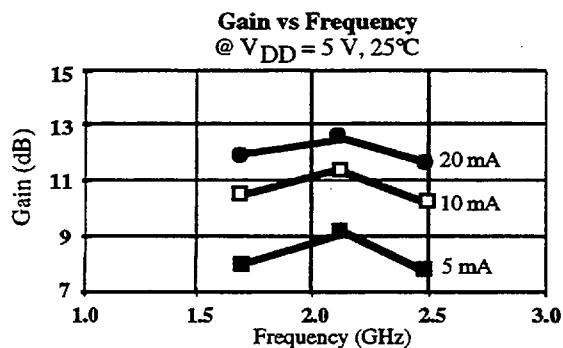
1974503 0000615 386

3236 Scott Boulevard

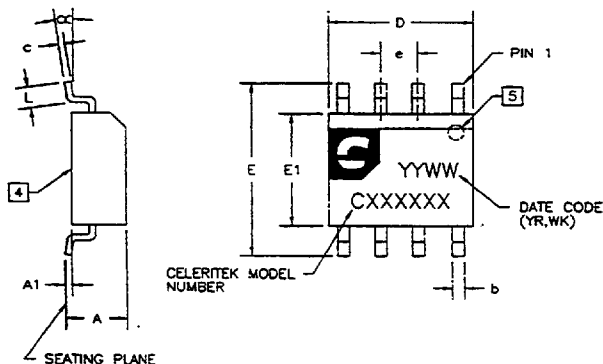
Santa Clara, California 95054 [79] Phone: (408) 986-5060

Fax: (408) 986-5095

Typical Performance



Physical Dimensions



NOTES: (UNLESS OTHERWISE SPECIFIED)

1. DIMENSIONS ARE IN MILLIMETERS [INCHES].
2. LEAD MATERIAL: COPPER
3. BODY MATERIAL: PLASTIC (EPOXY).
4. COUNTRY OF ORIGIN, IF OTHER THAN U.S., SHALL BE MARKED ON THIS SURFACE.
5. PIN 1 IDENTIFICATION IS A DOT OR BEVELED EDGE.

DIMENSION	MINIMUM	NOMINAL	MAXIMUM
A	1.35[0.053]	1.63[0.064]	1.75[0.069]
A1	0.10[0.004]	0.15[0.006]	0.20[0.008]
b	0.35[0.014]		0.45[0.018]
c	0.19[0.007]		0.22[0.009]
D	4.80[0.188]	4.90[0.193]	5.00[0.197]
E	5.80[0.228]	5.99[0.236]	6.20[0.244]
E1	3.80[0.150]	3.91[0.154]	4.00[0.158]
e		1.27[0.050]	
L	0.508[0.020]	0.64[0.025]	1.143[0.045]
α	0°		8°

Ordering Information

The CMM2302 is available in a surface mount SOIC-8 plastic package (physical dimensions shown on back).

Part Number for Ordering

CMM2302-AJ

CMM2302-AJ-000T

Package

SOIC-8 surface mount narrow body plastic package

SOIC-8 package in tape and reel

Celeritek reserves the right to make changes without further notice to any products herein. Celeritek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Celeritek assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters can and do vary in different applications. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Celeritek does not convey any license under its patent rights nor the rights of others. Celeritek products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Celeritek product could create a situation where personal injury or death may occur. Should Buyer purchase or use Celeritek products for any such unintended or unauthorized application, Buyer shall indemnify and hold Celeritek and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Celeritek was negligent regarding the design or manufacture of the part. Celeritek is a registered trademark of Celeritek, Inc. Celeritek, Inc. is an Equal Opportunity/Affirmative Action Employer.

1974503 0000616 212

CELERITEK

[80]

3236 Scott Boulevard, Santa Clara, California 95054

Phone: (408) 986-5060

Fax: (408) 986-5095