



Advanced Product Information  
September 1996 (1 of 2)

## 890 to 915 MHz 6V, 35 dBm, GSM Power Amplifier

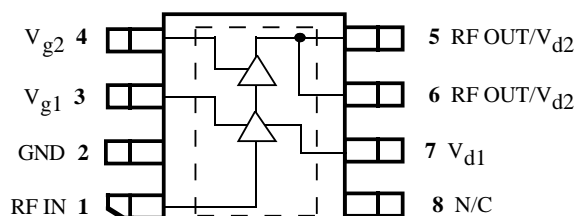
### Features

- ❑ 55% Power Added Efficiency
- ❑ 35 dBm Output Power
- ❑ Low Harmonic Distortion
- ❑ Low Cost, SO-8 Surface Mount Package
- ❑ 34 dB Gain

### Applications

- ❑ GSM Class IV Cellular Handsets
- ❑ 900 MHz ISM Products
- ❑ SMR Radio

### Functional Block Diagram



### Description

The CMM0335 is a highly efficient, 6V power amplifier intended for use in portable cellular handsets and datacom products operating in the SMR, GSM and 902-928 MHz ISM bands. As a pin-compatible member of the new **Triniti DX™** amplifier family, the CMM0335 offers maxi-

imum performance and flexibility. The CMM0335 is packaged in a low-cost, space efficient SO-8 power package that gives excellent electrical stability and thermal handling performance with a  $R_{\theta}$  of less than 18° C/W. The part is designed to require minimal external circuitry for bias matching, simplifying design and keeping board space and cost to a minimum.

### Absolute Maximum Ratings

Parameter	Rating	Parameter	Rating	Parameter	Rating
Drain Voltage (+V <sub>d</sub> )	+9.0 V*	Power Dissipation	5 W	Operating Temperature	-40°C to +100°C
Drain Current (I <sub>d</sub> )	1.8 A	Thermal Resistance	18°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.
DC Gate Voltage (-V <sub>g</sub> )	-4.0 V*				

\* Max (+V<sub>d</sub>) and (-V<sub>g</sub>) under linear operation. Max potential difference across the device in RF compression (2V<sub>d</sub> + |-V<sub>g</sub>|) not to exceed the minimum breakdown voltage (V<sub>br</sub>) of +18V.

### Recommended Operating Conditions

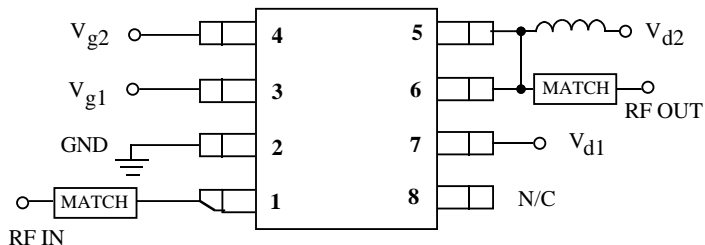
Parameter	Typ	Units	Parameter	Typ	Units
Drain Voltage (+V <sub>d</sub> )	5.3 to 6.3	Volts	Operating Temperature (PC Board)	-30 to +80	°C

### Electrical Characteristics

Unless otherwise specified the following specifications are guaranteed at room temperature with drain voltage (+V<sub>d</sub>) = 5.8 V and P<sub>IN</sub> = +8 dBm, in Celeritek test fixture.

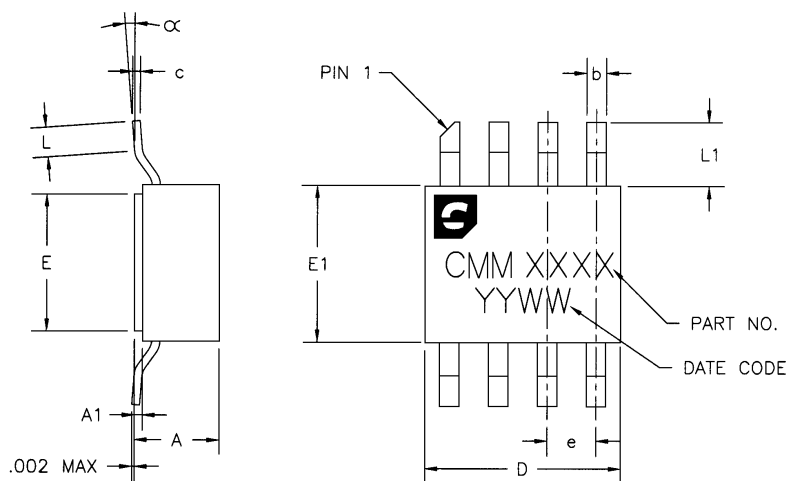
Parameter	Condition	Min	Typ	Max	Units
Frequency Range		890		915	MHz
P <sub>out</sub>	P <sub>IN</sub> = +8 dBm	34.5	35.5		dBm
Efficiency	35 dBm output meeting GSM template	50	55		%
Gain		30	34		dB
Harmonics	2nd @ P <sub>out</sub> = +34.5 dBm 3rd @ P <sub>out</sub> = +34.5 dBm			-30 -30	dBc dBc
Return Loss	In Celeritek test fixture		10		dB
Negative Supply Current				3	mA
Supply Current			950		mA
Quiescent Current	No RF		250		mA

## Connection Diagram and Pin Descriptions



Pin #	Name	Description
1	RF IN	RF input
2	GND	Ground
3	V <sub>g1</sub>	Input stage gate bias
4	V <sub>g2</sub>	Output stage gate bias
5	RF OUT/V <sub>d2</sub>	RF output and V <sub>d2</sub> . External matching circuit required
6	RF OUT/V <sub>d2</sub>	RF output and V <sub>d2</sub> . External matching circuit required
7	V <sub>d1</sub>	Input stage drain bias
8	N/C	Ground this pin

## Physical Dimensions



DIMENSION	MINIMUM	NOMINAL	MAXIMUM
A		.086[2.184]	.100[2.540]
A1	.005[.1270]	.008[.2032]	.011[.2794]
b	.017[.4318]	.020[.5080]	.023[.5842]
c	.007[.1778]	.008[.2032]	.009[.2286]
D	.195[4.953]	.200[5.080]	.205[5.207]
E	.135[3.429]	.140[3.556]	.145[3.683]
E1	.155[3.937]	.160[4.064]	.165[4.191]
e		.050[1.270]	
L	.020[.5080]		.040[1.016]
L1	.055[1.397]	.065[1.651]	.075[1.905]
α	0°		8°

DIMENSIONS IN INCHES [MILLIMETERS]

## Ordering Information

The CMM0335 is available in a surface mount SO-8 power package and devices are available in tape and reel.

## Part Number for Ordering

CMM0335-AK

CMM0335-AK-000T

## Package

SO-8 surface mount power package

SO-8 surface mount power package in tape and reel

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