

Advanced Product Information
September 1996 (1 of 2)

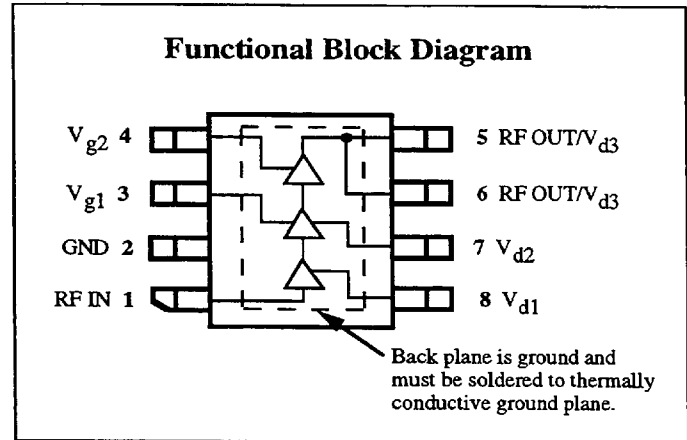
1.85 to 1.91 GHz 6V, 32 dBm, PCS/PCN, Power Amplifier

Features

- 35% Linear Power Added Efficiency
- 32 dBm Output Power (IS-136 TDMA)
- 32 dB Gain
- Low Cost, SO-8 Surface Mount Package
- Tested Under Digital Modulation

Applications

- PCS-1900, IS-136, IS-98, DCS-1800 Handsets
- Wireless Local Loop Subscriber Units
- PCS Base Stations
- 1.6 GHz Satellite Subscriber Units



Description

The CMM1335 is a 6 V linear power amplifier intended for use in PCS handsets, wireless local loop subscriber units and PCS base stations. As a pin-compatible member of the new **Triniti DX™** amplifier family, the CMM1335 offers maximum performance and flexibility. The flexible amplifier can be biased to support the requirements of PCS-1900, IS-136, IS-95 or DCS-1800 systems.

The CMM1335 is packaged in a low-cost, space efficient SO-8 power package that gives excellent electrical stability and thermal handling performance with a R_{θ} 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. Through simple matching adjustment, equivalent performance can also be achieved for the 1.6 GHz satellite bands.

Absolute Maximum Ratings

Parameter	Rating	Parameter	Rating	Parameter	Rating
Drain Voltage (+V _d)	+9.0 V*	Power Dissipation	5 W	Operating Temperature	-40°C to +100°C
Drain Current (I _d)	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 _g)	-4.0 V*				

* Max (+V_d) and (-V_g) under linear operation. Max potential difference across the device in RF compression (2V_d + 1-V_g) not to exceed the minimum breakdown voltage (V_{br}) of +18V.

Recommended Operating Conditions

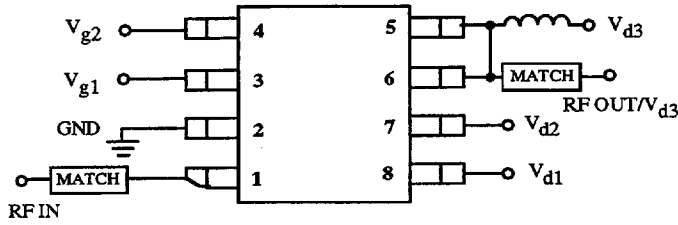
Parameter	Typ	Units	Parameter	Typ	Units
Drain Voltage (+V _d)	5.3 to 6.3	Volts	Operating Temperature (PC Board)	-30 to +80	°C

Electrical Characteristics

Unless otherwise specified the following specifications are guaranteed at room temperature with drain voltage (+V_d) = 5.8 V, in Celeritek test fixture.

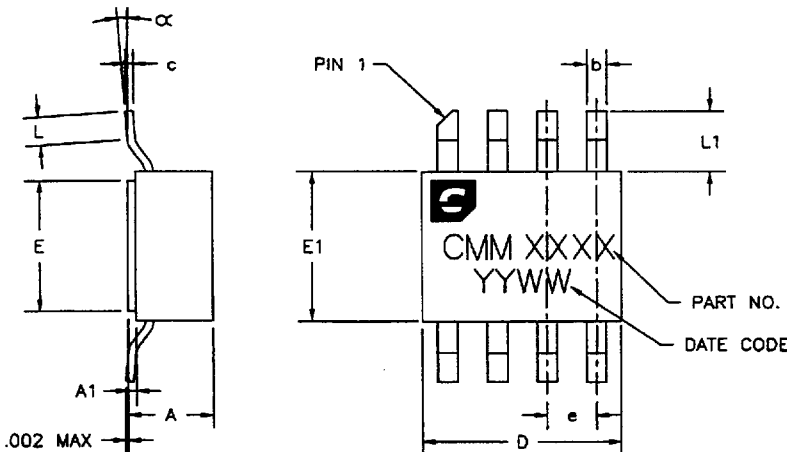
Parameter	Condition	Min	Typ	Max	Units
Frequency Range		1.85		1.91	GHz
Power Output	Meets IS-136 TDMA mask Meets IS-98 CDMA mask	31.0 30.0	32.0 30.5		dBm dBm
Efficiency	Pout IS-136 TDMA Pout IS-98 CDMA	30 27	35 30		% %
Gain		31	34		dB
Harmonics (in Celeritek test fixture)	2nd @ Pout = +34 dBm 3rd @ Pout = +34 dBm			-30 -35	dBc dBc
Return Loss	In Celeritek Test Fixture		10		dB
Negative Supply Current				1	mA
Supply Current	TDMA/CDMA		600/575		mA
Quiescent Current	No RF		350		mA

Connection Diagram and Pin Descriptions



Pin #	Name	Description
1	RF IN	RF input (internally DC blocked)
2	GND	Ground
3	V _{g1}	Input stage gate bias
4	V _{g2}	Output stage gate bias
5	RF OUT/V _{d3}	RF output and V _{d3} . External matching circuit required
6	RF OUT/V _{d3}	RF output and V _{d3} . External matching circuit required
7	V _{d2}	Intermediate stage drain bias
8	V _{d1}	Input stage drain bias

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]
alpha	0°		8°

DIMENSIONS IN INCHES [MILLIMETERS]

Ordering Information

The CMM1335 is available in a surface mount SO-8 power package and devices are available in tape and reel.

Part Number for Ordering

CMM1335-AK

CMM1335-AK-000T

Package

SO-8 surface mount power package

SO-8 surface mount power package in tape and reel

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