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MOTOROLA

MRFIC1869

Product Preview

Dual-Band GSM GPRS 3.6 V Integrated Power Amplifier

The MRFIC1869 is a dual–band single supply RF Power Amplifier for GSM900/DCS1800 hand held radios. The device is packaged in a MLF–32 with exposed backside pad allowing excellent electrical and thermal performance through a solderable contact.

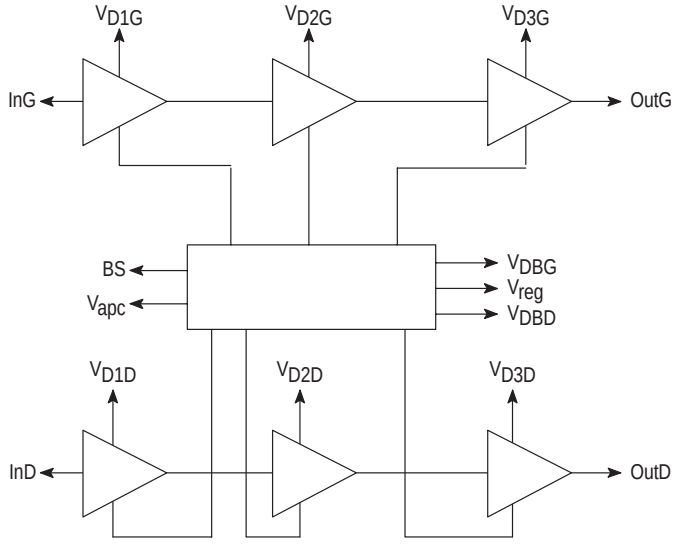
- Single Supply Enhancement Mode pHEMT Technology
- Internal Input Matching
- High Power and Efficiency
- Typical 3.6 V Characteristics:
  P_{out} = 35.8 dBm, PAE = 55% for GSM
  P_{out} = 34 dBm, PAE = 45% for DCS
- Tri–Band Capability[1]

DUAL–BAND
GSM GPRS 3.6 V IPA

SEMICONDUCTOR
TECHNICAL DATA

PLASTIC PACKAGE
CASE TBD
(MLF–32, 5x5)

Simplified Block Diagram

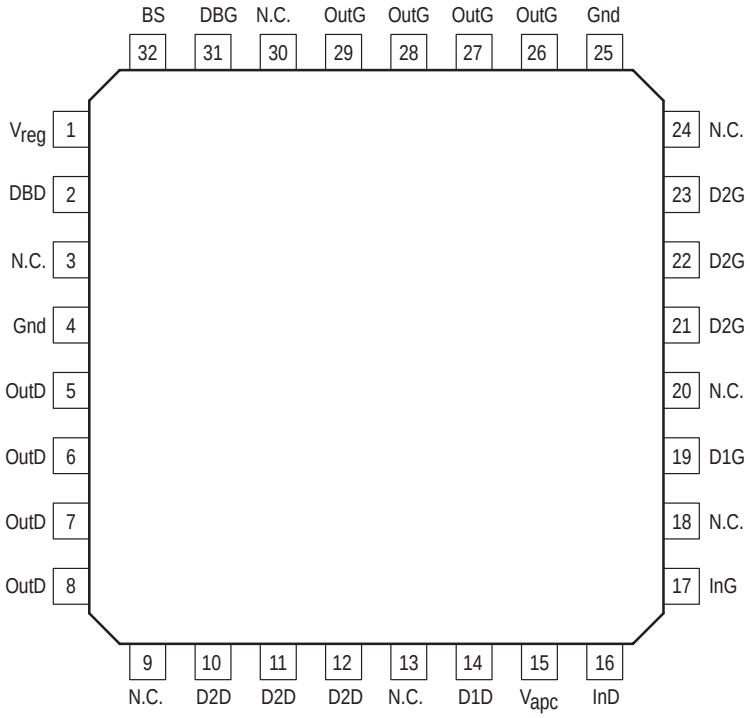


ORDERING INFORMATION

Device	Operating Temperature Range	Package
MRFIC1869	T_C = –35 to 100°C	MLF–32

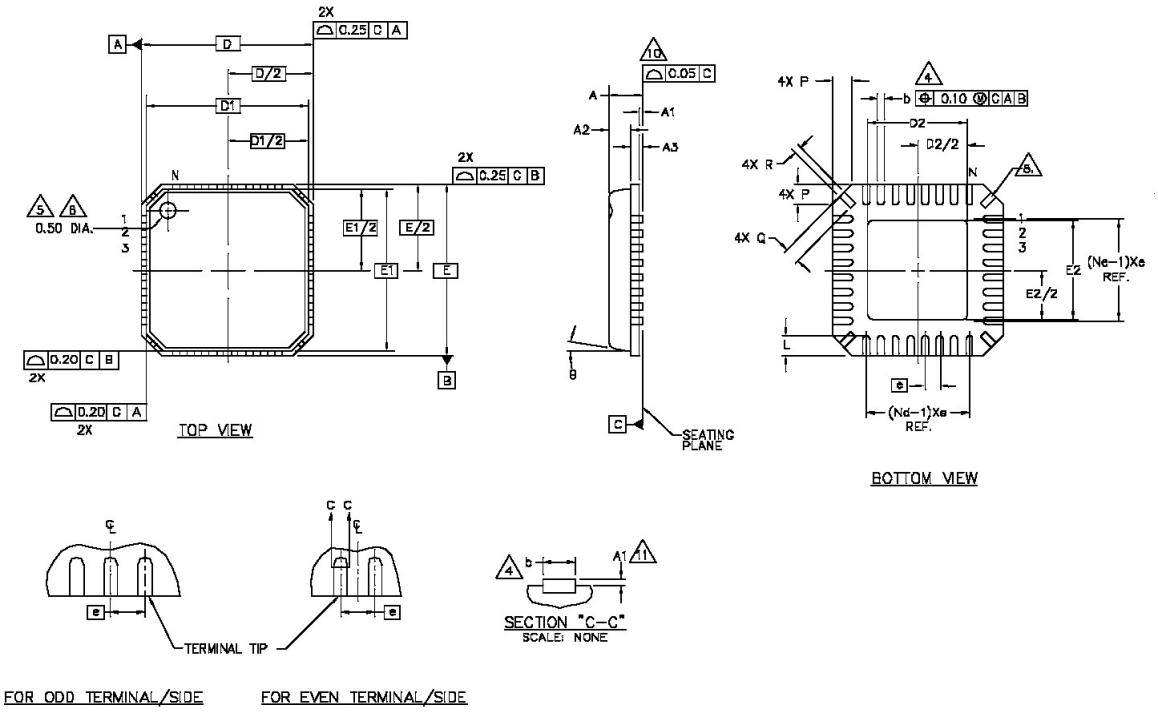
1. This product can be used in a tri–band application with a specific DCS1800/PCS1900 matching network. This matching network results in a degradation of Pout, PAE and input power as noted in the Electrical Characteristics table.

PIN CONNECTIONS



OUTLINE DIMENSIONS

PLASTIC PACKAGE
CASE TBD
(MLF–32, 5x5)



SYMBOL	PITCH VARIATION A			NOTE	PITCH VARIATION B			NOTE	PITCH VARIATION C			NOTE	PITCH VARIATION D			NOTE
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.		MIN.	NOM.	MAX.		MIN.	NOM.	MAX.	
e		0.80 BSC				0.65 BSC				0.50 BSC				0.50 BSC		
N		16		3		20		3		28		3		32		3
Nd		4		3	Nd		5	3	Nd		7	3	Nd		8	3
Ne		4		3	Ne		5	3	Ne		7	3	Ne		8	3
L	0.50	0.60	0.75		L	0.50	0.60	0.75	L	0.50	0.60	0.75	L	0.30	0.40	0.55
b	0.28	0.33	0.40	4	b	0.23	0.28	0.35	4	b	0.18	0.23	0.30	4	b	0.18	0.23	0.30	4
Q	0.30	0.40	0.65		Q	0.30	0.40	0.65		Q	0.30	0.40	0.65		Q	0.00	0.20	0.45	
D2	SEE EXPOSED PAD VARIATION:B				D2	SEE EXPOSED PAD VARIATION:B				D2	SEE EXPOSED PAD VARIATION:A,B				D2	SEE EXPOSED PAD VARIATION:A		
E2	SEE EXPOSED PAD VARIATION:B				E2	SEE EXPOSED PAD VARIATION:B				E2	SEE EXPOSED PAD VARIATION:A,B				E2	SEE EXPOSED PAD VARIATION:A		

SYMBOLS		D2			E2			NOTE
		MIN	NOM	MAX	MIN	NOM	MAX	
EXPOSED PAD VARIATIONS	A	2.95	3.10	3.25	2.95	3.10	3.25	
	B	2.55	2.70	2.85	2.55	2.70	2.85	

EXAMPLE; WE CAN CALL VARIATION "BB" FOR 20 TERMINAL MLP2
WITH 2.70mm X 2.70mm NOMINAL EXPOSED PAD DIMENSION.
THE FORMER ONE IN VARIATION IS FOR PITCH VARIATION AND
THE LETTER ONE IS FOR EXPOSED PAD VARIATION.

SYMBOL	COMMON DIMENSIONS			NOTE
	MIN.	NOM.	MAX.	
A	–	0.85	1.00	
A1	0.00	0.01	0.05	11
A2	–	0.65	0.80	
A3		0.20 REF.		
D		5.00 BSC		
D1		4.75 BSC		
E		5.00 BSC		
E1		4.75 BSC		
θ			12°	
P	0.24	0.42	0.60	
R	0.13	0.17	0.23	

NOTES:
1. DIE THICKNESS ALLOWABLE IS 0.305mm MAXIMUM(.012 INCHES MAXIMUM)
2. DIMENSIONING & TOLERANCES CONFORM TO ASME Y14.5M. – 1994.
3. N IS THE NUMBER OF TERMINALS.
   Nd IS THE NUMBER OF TERMINALS IN X–DIRECTION &
   Ne IS THE NUMBER OF TERMINALS IN Y–DIRECTION.
4. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.20 AND 0.25mm FROM TERMINAL TIP.
5. THE PIN #1 IDENTIFIER MUST BE EXISTED ON THE TOP SURFACE OF THE PACKAGE BY USING INDENTATION MARK OR OTHER FEATURE OF PACKAGE BODY.
6. EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.
7. ALL DIMENSIONS ARE IN MILLIMETERS.
8. THE SHAPE SHOWN ON FOUR CORNERS ARE NOT ACTUAL I/O.
9. PACKAGE WARPAGE MAX 0.05mm.
10. APPLIED FOR EXPOSED PAD AND TERMINALS. EXCLUDE EMBEDDING PART OF EXPOSED PAD FROM MEASURING.
11. APPLIED ONLY FOR TERMINALS.

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