


MOTOROLA
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:
 - $P_{out} = 35.8 \text{ dBm}$, PAE = 55% for GSM
 - $P_{out} = 34 \text{ dBm}$, PAE = 45% for DCS
- Tri-Band Capability¹

MRFIC1869

DUAL-BAND GSM GPRS 3.6 V IPA

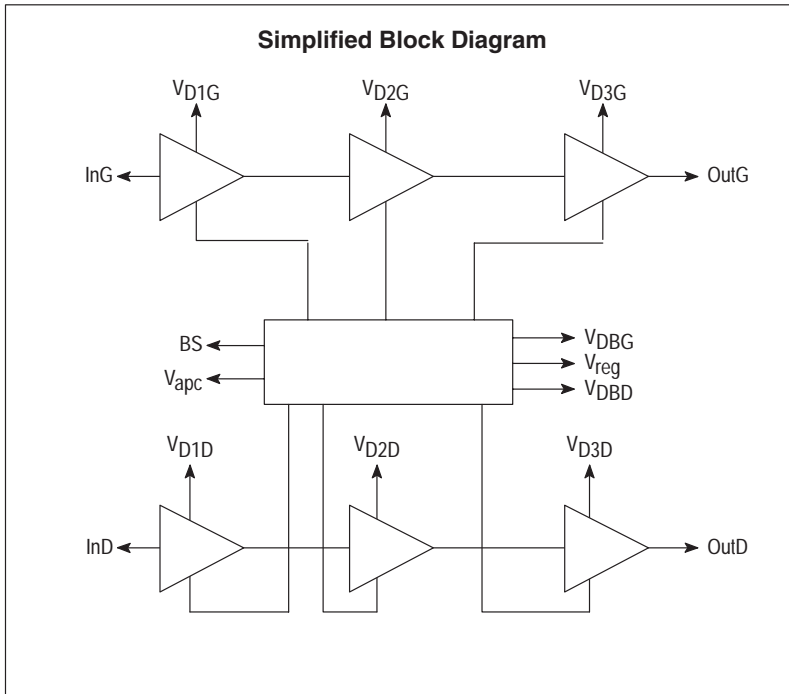
SEMICONDUCTOR TECHNICAL DATA

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

ORDERING INFORMATION

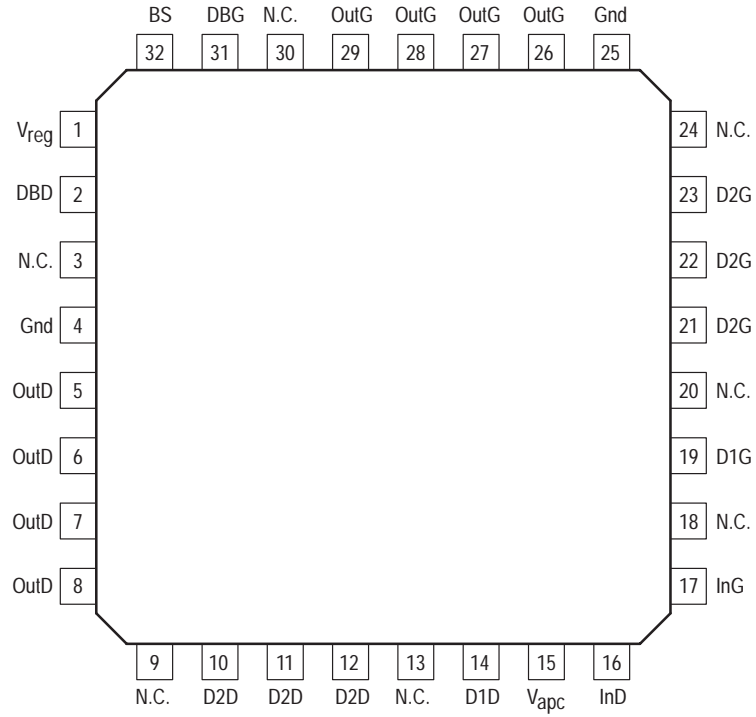
Device	Operating Temperature Range	Package
MRFIC1869	$T_C = -35 \text{ to } 100^\circ\text{C}$	MLF-32

Simplified Block Diagram



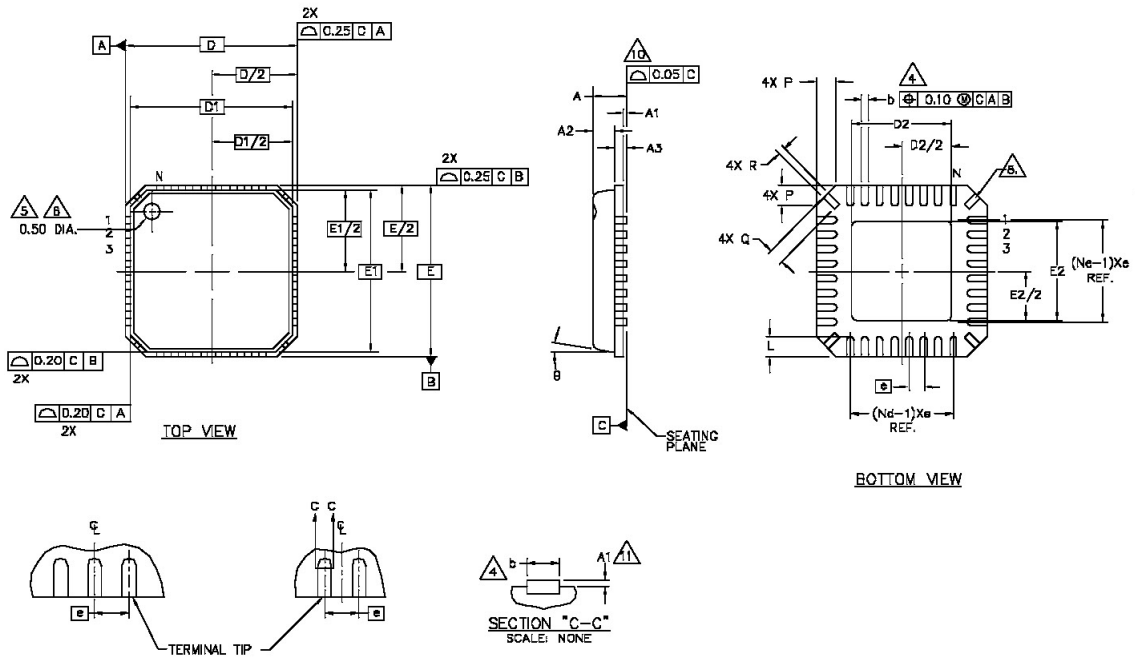
1. This product can be used in a tri-band application with a specific DCS1800/PCS1900 matching network. This matching network results in a degradation of P_{out} , PAE and input power as noted in the Electrical Characteristics table.

PIN CONNECTIONS



OUTLINE DIMENSIONS

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



FOR ODD TERMINAL/SIDE

FOR EVEN TERMINAL/SIDE


SYMBOL	PITCH VARIATION A			N	PITCH VARIATION B			Nd	PITCH VARIATION C			Ne	PITCH VARIATION D		
	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.		MIN.	NOM.	MAX.		MIN.	NOM.	MAX.
b	0.50 BSC			3	0.65 BSC			3	0.50 BSC			3	0.50 BSC		
L	0.50	0.60	0.75	3	0.50	0.60	0.75	3	0.50	0.60	0.75	3	0.30	0.40	0.55
Q	0.30	0.40	0.65	3	0.30	0.40	0.65	3	0.30	0.40	0.65	3	0.00	0.20	0.45
D2	SEE EXPOSED PAD VARIATION:B			D2	SEE EXPOSED PAD VARIATION:B			D2	SEE EXPOSED PAD VARIATION:AB			D2	SEE EXPOSED PAD VARIATION:A		
E2	SEE EXPOSED PAD VARIATION:B			E2	SEE EXPOSED PAD VARIATION:B			E2	SEE EXPOSED PAD VARIATION:AB			E2	SEE EXPOSED PAD VARIATION:A		

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

EXAMPLE: WE CAN CALL VARIATION "B9" 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			N
	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	-	9.00 BSC	-	
E1	-	4.75 BSC	-	
θ	-	-	12°	
P	0.24	0.42	0.60	
R	0.13	0.17	0.23	

- NOTES:
- DIE THICKNESS ALLOWABLE IS 0.305mm MAXIMUM (0.12 INCHES MAXIMUM)
 - DIMENSIONING & TOLERANCES CONFORM TO ASME Y14.5M - 1994.
 - N IS THE NUMBER OF TERMINALS.
Nd IS THE NUMBER OF TERMINALS IN X-DIRECTION &
Ne IS THE NUMBER OF TERMINALS IN Y-DIRECTION.
 - DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.20 AND 0.25mm FROM TERMINAL TIP.
 - THE PIN #1 IDENTIFIER MUST BE EXISTED ON THE TOP SURFACE OF THE PACKAGE BY USING INDENTATION MARK OR OTHER FEATURE OF PACKAGE BODY.
 - EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.
 - ALL DIMENSIONS ARE IN MILLIMETERS.
 - THE SHAPE SHOWN ON FOUR CORNERS ARE NOT ACTUAL I/O.
 - PACKAGE WARPAGE MAX 0.05mm.
 - APPLIED FOR EXPOSED PAD AND TERMINALS. EXCLUDE EMBEDDING PART OF EXPOSED PAD FROM MEASURING.
 - APPLIED ONLY FOR TERMINALS.

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