

KCB810

Amplifier, Linear Power

0.4 – 2.7 GHz



Features

- ❑ Wideband Frequency range: 400 to 2.7 GHz
- ❑ Output 1dB Compression Point: +30 dBm
- ❑ Low Noise Figure: 3.6 dB
- ❑ High Gain 15 dB
- ❑ High Reliability Class B and S Screening Available
- ❑ See Page 3 for Hi-Rel Ordering Details



Description

The KCB810 is a GaAs pHEMT high performance, ultra wide band Power Amplifier with superior output power, low noise high linearity and high efficiency.

The KCB810 uses Hermetic Surface-Mount Technology (SMT) for Defense and Satellite application.

The device can be supplied and tested to the screening requirements of MIL-PRF-38535 Class B and S, in addition to the required QCI.

1	RF IN
2	RF IN
3	NC
4	NC
5	RF OUT
6	RF OUT
7	RF OUT
8	RF OUT

Electrical Characteristics (+25°C)

Parameter	Conditions	Min.	Typ.	Max.	Units
Small Signal Gain			14.5		dB
Input Return Loss			17		dB
Output Return Loss			17		dB
Reverse Isolation			26		dB
1dB Output Compression Point (OP1dB)	CW		+30.2		dBm
Third Order Output Intercept Point (OIP3)	Pout = +10 dBm		+43		dBm
Noise Figure			3.8		dB
Operational Current	@ OP1dB		390		mA
Quiescent Current	No RF		140		mA

Recommended Operating Conditions

Parameter	Min Value	Typical Value	Max Value	Units
Supply Voltage	4.75	5.0	5.5	Volts
Input Return Loss	400		2700	MHz
Output Return Loss	-55	+25	+85	°C

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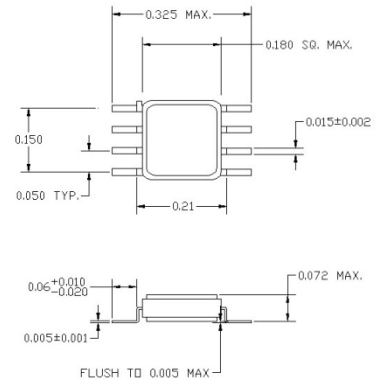
0.4 – 2.7 GHz



Absolute Maximum Ratings

Outline Drawing

Characteristic	Min Value	Max Value	Units
Supply Voltage	-9.0	+0.2	Volts
RF Input Power		+29	dBm
Supply Current		400	mA
Storage Temperature	-55	+125	° C
Operating Case Temp	-55	+125	° C



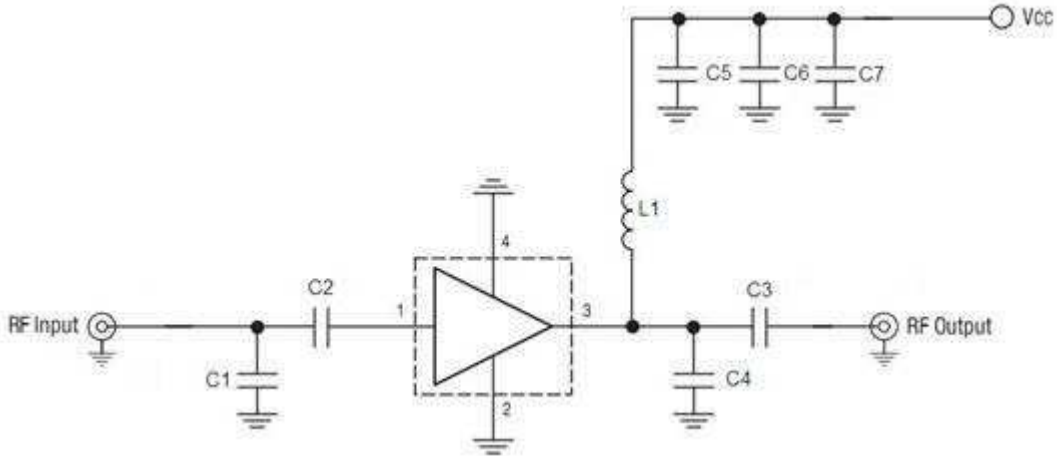
Screening Flow

Test Inspection	MIL – STD -883		Requirement	
	Method	Condition	Class B	Class S
Wafer Lot Acceptance	5007		N/A	Per Wafer Lot
Non-Destructive Bond Pull	2023		Process under Statistical Control	Process under Statistical Control
Internal Visual	2010	A= Class S B = Class B	100%	100%
Temperature Cycle	1010	C	100%	100%
Acceleration	2001	E (Y1 only)	100%	100%
PIND	2020	A (5 Cycles)	N/A	100%
Serialization	Per Product Specification		N/A	100%
Radiographic	2012		N/A	100%
Electrical Test	Per Product Specification	+25°C	100%	100%
Burn In	1015	A	100% 80 Hours @ 150°C	100%
Final Electrical	Per Product Specification	+25°C	100%	100%
Group A Electrical	Per Product Specification	-55°C + 125°C	45/0	45/0
Seal				
Fine Leak	1014	A	100%	100%
Gross Leak		C		
External Visual	2009		100%	100%

Ordering Information

KCB Solutions Part Number	Screening Level
KCB810C	Unscreened
KCB810B	Class B Screening
KCB810S	Class S Screening

Evaluation Schematic



Component	Value	Component	Value
C1	2.0 pF	C1	10 pF
C2	2.4 pF	C2	100 pF
C3	3.9 pF	C3	1 uF
C4	2.0 pF	C4	8.7 nH

Evaluation Circuit Data (Vcc = +5V, Icq = 150 mA)

