

CBM-004301-DIE

Phase Shifter, L-Band

1.1 – 1.5 GHz

The most important thing we build is trust

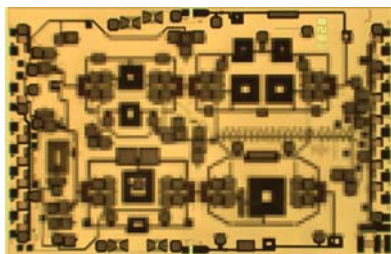
COBHAM

Features

- Excellent Phase Accuracy
- 7-Bits, LSB = 2.8°
- Integrated ESD Supression
- Fast Switching Speed
- RoHS Compliant

Description

The CBM-004301-DIE is a 7-Bit, 128 state, phase shifter designed for radar and communication applications. The CBM-004301-DIE provides 5.5-dB insertion loss across the band with RMS phase error <math><3^\circ</math> and RMS magnitude error <math><0.3\text{ dB}</math>. This product is available in die form.



Electrical Characteristics: $T_B=25^\circ\text{C}^1$, $Z_0=50\ \Omega$

Parameter	Symbol	Min	Typical	Max	Units
Bandwidth	f	1.2		1.5	GHz
Insertion Loss (Ref)	IL		5.5		dB
Phase Step	LSB		2.8		°
RMS Phase Error			1.5		°
Input Return Loss (All States)	IRL		16		dB
Output Return Loss (All States)	ORL		16		dB
Supply Voltage	V_{EE}		-5		V
Supply Current	I_{EE}		0.1		mA

Primary Applications

- L-Band GPS
- L-Band Radar

Recommended Operating Conditions²

Operating Temperature	T	-32	25	60	°C
Logic High	1		0		V
Logic Low	0		-5		V

1. T_B =MMIC Base Temperature
2. Operation outside of these ranges may reduce product reliability

MMICs On The Move

For further information please contact:

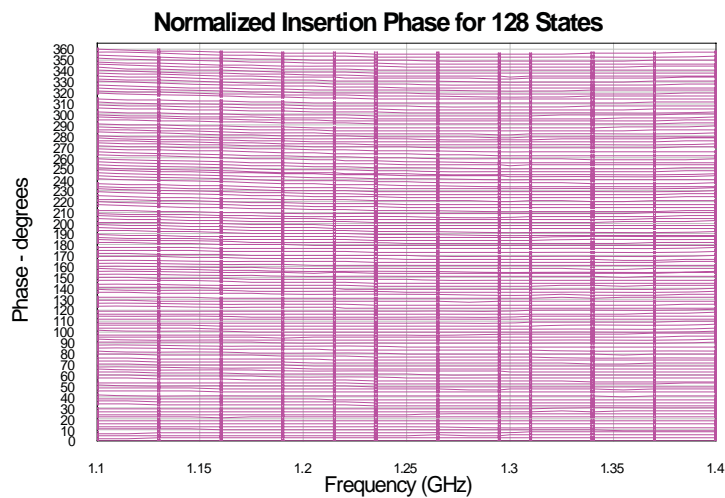
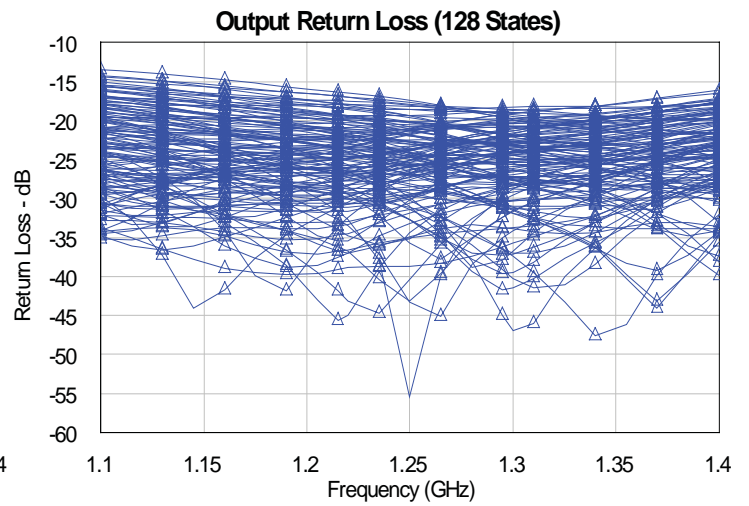
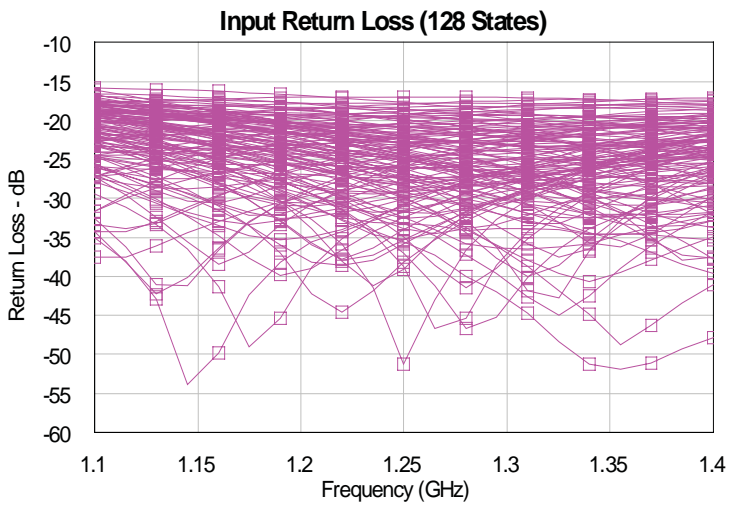
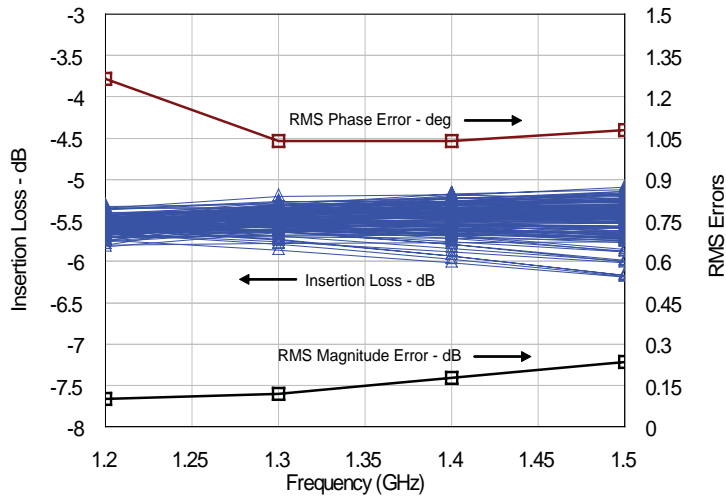
Cobham Blacksburg
3155 State Street
Blacksburg, VA 24060
Tel: 1-540-443-2800 x3902
Fax: 1-540-443-2819
mmicsales@cobham.com

CBM-004301-DIE

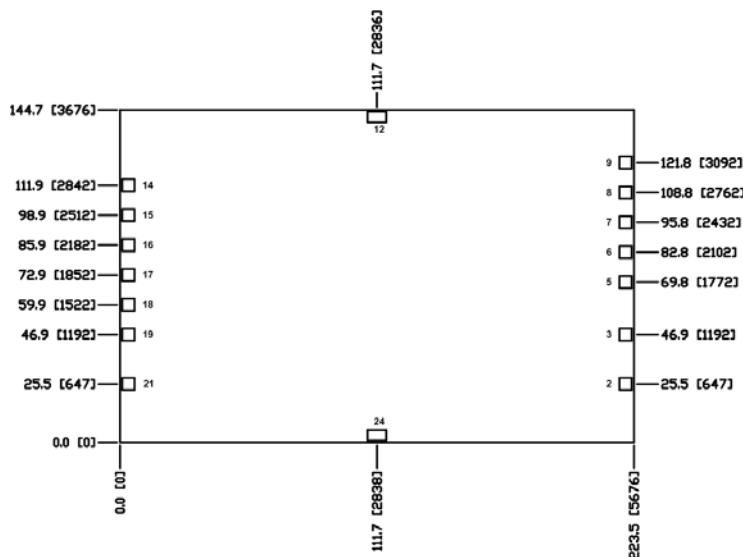
Phase Shifter, L-Band

1.1 – 1.5 GHz

The most important thing we build is trust



Bond Pad Locations



Die Size in MILS [Microns]

Die Size +/- 2 mils

All Bond Pads 5 mils square

RF Pads 4 x 8 mils

Bond Pad #	Description
2	5.625 Bit
3	V_{DD}
5	11.25 Z
6	11.25 Z-BAR
7	2.8125 Bit
8	45 Z
9	45 Z-BAR
12	RF_{IN}
14	22.5 Z
15	22.5 Z-BAR
16	90 Z
17	90 Z-BAR
18	180 Z
19	180 Z-BAR
21	V_{DD}
24	RF_{OUT}
1,4,10,11,13,20,22,23	DC GND Test Only

Truth Table

Phase State	Pad Name											
	2.8	5.6	11.3 Z	11.3 Z-BAR	22.5 Z	22.5 Z-BAR	45 Z	45 Z-BAR	90 Z	90 Z-BAR	180 Z	180 Z-BAR
REFERENCE	1	1	1	0	1	0	1	0	1	0	1	0
2.8	0	1	1	0	1	0	1	0	1	0	1	0
5.6	1	0	1	0	1	0	1	0	1	0	1	0
11.3	1	1	0	1	1	0	1	0	1	0	1	0
22.5	1	1	1	0	0	1	1	0	1	0	1	0
45	1	1	1	0	1	0	0	1	1	0	1	0
90	1	1	1	0	1	0	1	0	0	1	1	0
180	1	1	1	0	1	0	1	0	1	0	0	1
357.2	0	0	0	1	0	1	0	1	0	1	0	1

Maximum Ratings³

Parameter	Symbol	Absolute Max	Units
Control Voltage	A1-A6	6	V
DC Power Consumption	I_{IN}	5	mA
Input Power	P_{IN}	30.0	dBm
Storage Temperature	T_{STG}	-65 to +125	°C
Electrostatic Discharge	ESD	Class 1B	

³ Exceeding any one of these ratings can reduce product lifetime.