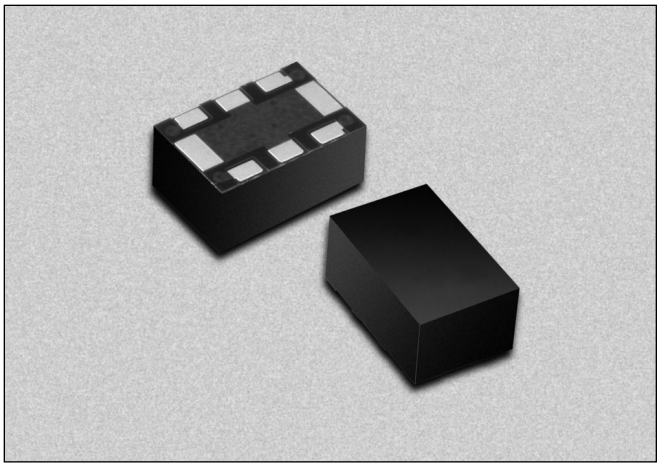
LGA Packaged Phase Shifter for PCS Base Stations

Alpha

PS196-315

Features

- Designed for PCS 1960 ± 30 MHz Band
- 100 Degree Phase Shift Range
- 1.5 Degree Phase Deviation
- 0.3 dB Insertion Loss Deviation
- 0–12 V Control Voltage Range
- Specified 33 dBm IP3
- Small Footprint LGA Package



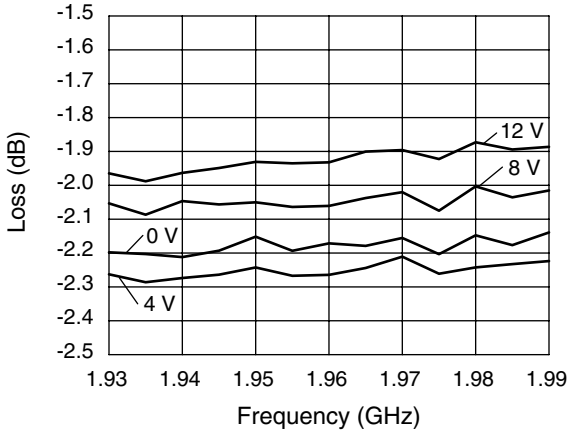
Description

The PS196-315 is a voltage controlled phase shifter specifically designed for use in power amplifier distortion compensation circuits centered at 1960 MHz in PCS band base stations. Its characteristics are specified in a 60 MHz bandwidth. The PS196-315 employs a monolithic quadrature hybrid and a pair of selected silicon varactor diodes to achieve 100-degree phase shift and low insertion loss. The PS196-315 is packaged in the small outline LGA (Land Grid Array) surface mount package with the internal elements affixed to an organic BT substrate.

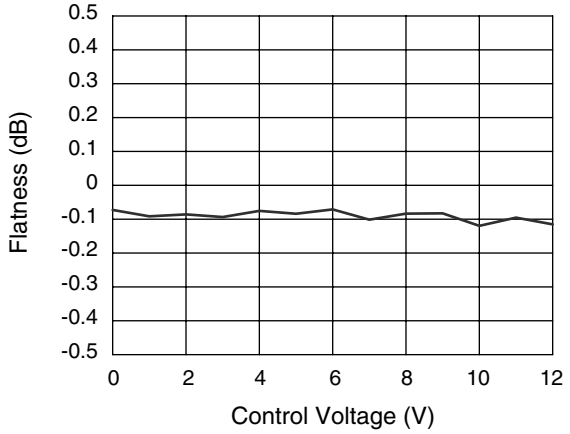
Electrical Specifications at 25°C

Parameter	Condition	Min.	Typ.	Max.	Unit
Frequency Range (BW)	F_O = 1946	1916		1976	MHz
Phase Shift	At F_O, C_V = 12 V	100			Deg.
Phase Deviation in BW	C_V = 0–12 V		1.5	2.0	Deg.
Control Voltage (C_V) Range		0		12	V
Control Current	C_V = 12 V			1	μA
Insertion Loss in BW	(C_V = 0 V)			2.3	dB
I.L. Deviation in BW	C_V = 0–12 V			0.3	dB
I.L. Variation	At F_O, C_V = 0–12 V			0.75	dB
VSWR in BW				1.8	
IM3	P_{IN} = 8 dBm, 1900/1905 MHz, C_V = 0 V			-50	dBc
IP3	Derived from IM3	33			dBm

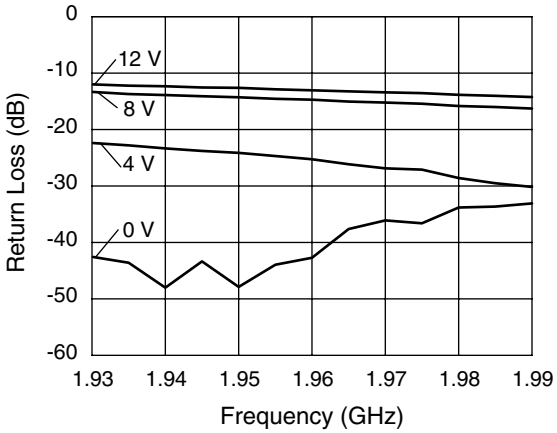
Typical Performance Data



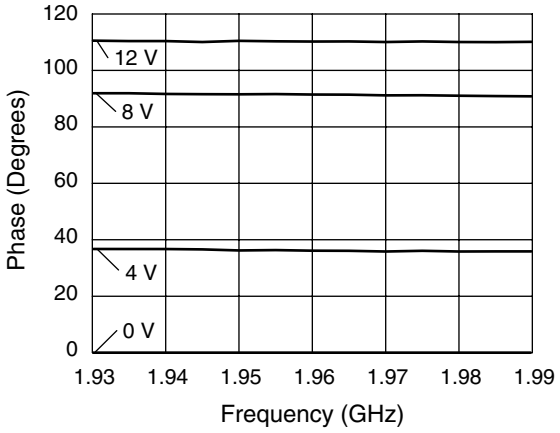
Insertion Loss vs. Frequency and Control Voltage



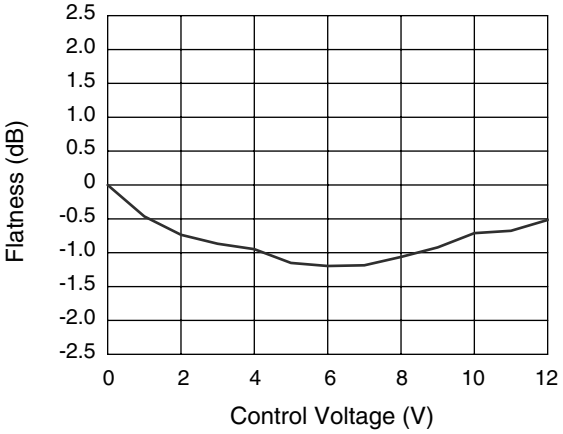
Insertion Loss Flatness vs. Control Voltage



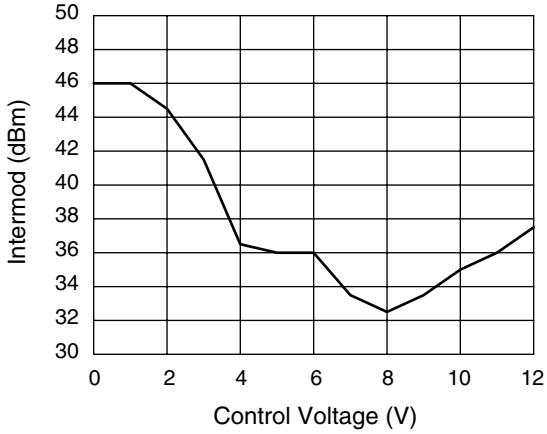
Input/Output Return Loss vs. Frequency and Control Voltage



Phase vs. Frequency and Control Voltage

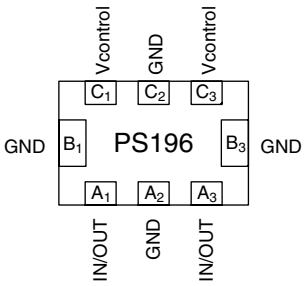


Phase Flatness vs. Control Voltage



3rd Order Intermod vs. Control Voltage
RF_1 = 1.900 GHz, RF_2 = 1.905 GHz @ 8 dBm

Pin Out (Bottom View)

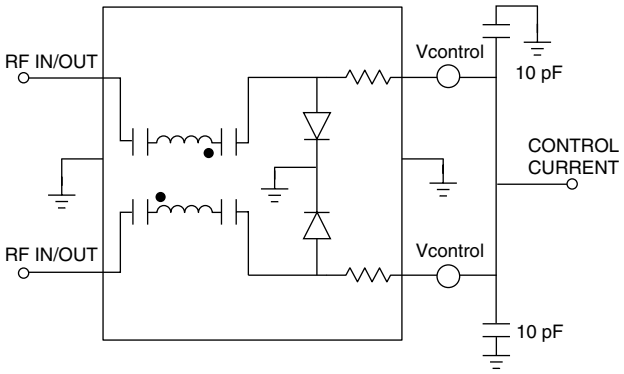


Terminal No.	Terminal Name
A_1	IN/OUT
A_2	GND
A_3	IN/OUT
B_1	GND
B_3	GND
C_1	Vcontrol
C_2	GND
C_3	Vcontrol

Absolute Maximum Ratings

Characteristic	Value
RF Input Power	20 dBm
Control Voltage	15 V
Operating Temperature	-40 to +85°C
Storage Temperature	-40 to +85°C

Connection Diagram



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