

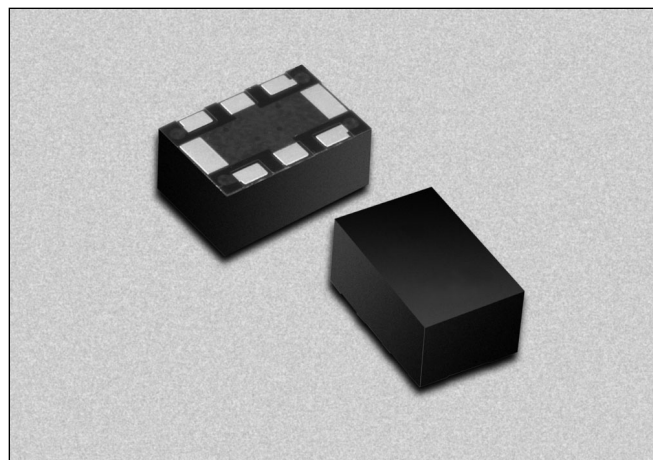
# LGA Packaged Phase Shifter for DCS Base Stations



PS184-315

## Features

- Designed for DCS 1837.5 ± 32.5 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



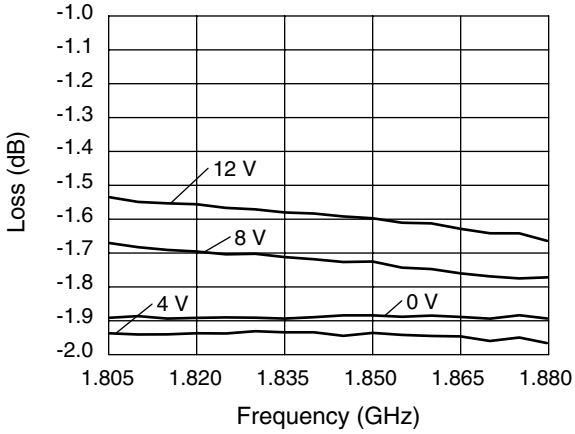
## Description

The PS184-315 is a voltage controlled phase shifter specifically designed for use in power amplifier distortion compensation circuits centered at 1837.5 MHz in DCS band base stations. Its characteristics are specified in a 70 MHz bandwidth. The PS184-315 employs a monolithic quadrature hybrid and a pair of selected silicon varactor diodes to achieve 100 degree phase shift and low insertion loss. The PS184-315 is packaged in the small outline LGA (Land Grid Array) surface mount package with the internal elements affixed to an organic BT substrate.

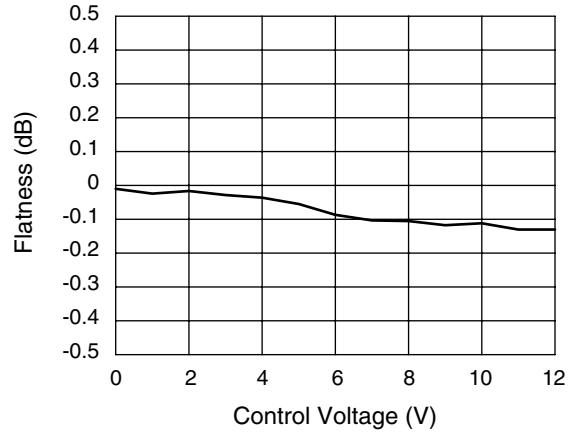
## Electrical Specifications at 25°C

Parameter	Condition	Min.	Typ.	Max.	Unit
Frequency Range (BW)	$F_O = 1837.5$	1805		1870	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	$\mu$ A
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

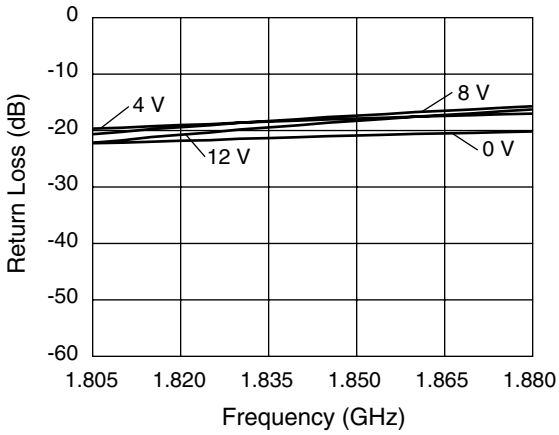
**Typical Performance Data**



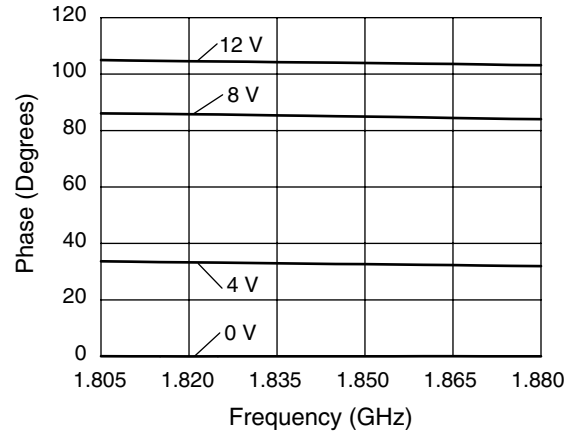
**Insertion Loss vs. Frequency and Control Voltage**



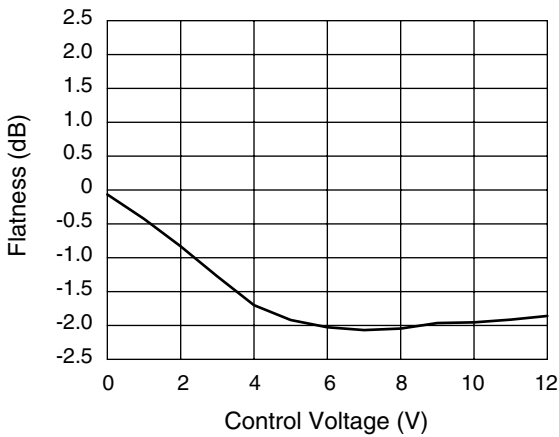
**Insertion Loss Flatness vs. Control Voltage**



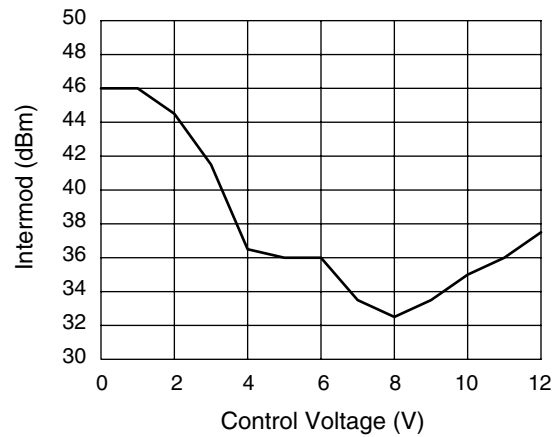
**Input/Output Return Loss vs. Frequency and Control Voltage**



**Phase vs. Frequency and Control Voltage**

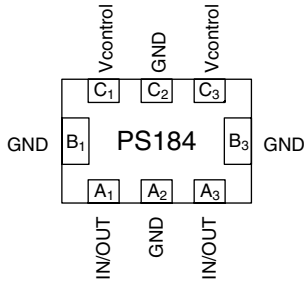


**Phase Flatness vs. Control Voltage**



**3rd Order Intermod vs. Control Voltage**  
 $RF_1 = 1.900 \text{ GHz}$ ,  $RF_2 = 1.905 \text{ GHz}$  @ 8 dBm

**Pin Out (Bottom View)**

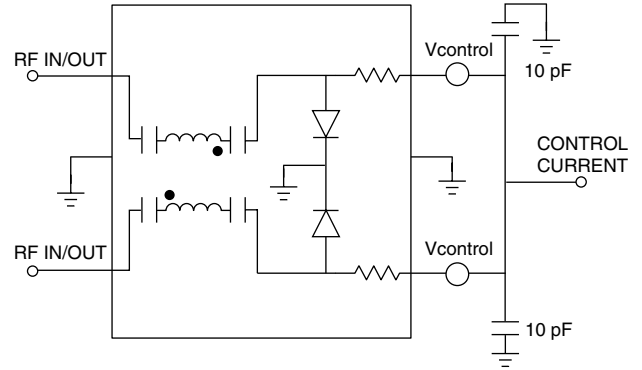


Terminal No.	Terminal Name
A <sub>1</sub>	IN/OUT
A <sub>2</sub>	GND
A <sub>3</sub>	IN/OUT
B <sub>1</sub>	GND
B <sub>3</sub>	GND
C <sub>1</sub>	Vcontrol
C <sub>2</sub>	GND
C <sub>3</sub>	Vcontrol

**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**



**-315**

