

5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm

Phase Shifters and Trimmers Technical Data Sheet

PE82P5024

Features

- Programmable Phase Shifter
- 32 GHz to 37 GHz
- Phase Shift 0° to 360° typ
- TTL Digital Control
- 5 Control Bits
- Step Size 11.25° typ
- Insertion Loss 9.8 dB typ
- Phase Flatness +/- 5° typ
- Switching Speed 500 usec typ
- Input P1dB +20 dBm typ
- Maximum RF Input Power +20 dBm
- 50 Ohm Design
- DC Bias +5V @ 1 mA
- Micro-D9 Female Connector
- Field Replaceable Female 2.92mm RF Connectors
- Operational Temperature Range -40°C to +85°C
- Rugged and Compact Aluminum Gold Plated Package Design
- Environmental Test Conditions Altitude, Vibration, Humidity, Shock
- Single DC Control Operation
- Low Phase Error

Applications

- Test & Measurement
- Military & Commercial
- Communications
- Military Electronic Systems
- Research & Development

Description

The PE82P5024 is a 5 Bit Digitally Controlled Programmable Phase Shifter that operates across a frequency band from 32 GHz to 37 GHz. The 50 Ohm design has a phase shift range from 0° to 360° with 5 control bits and a step size of 11.25°. Impressive typical performance includes 9.8 dB insertion loss, +/- 5° phase flatness, an input 1 dB compression point of +20 dBm. The maximum RF input power level is +20 dBm. The unit requires +5Vdc bias voltage with 1 mA max DC current. The low profile pin package is aluminum with Gold plating and supports field replaceable 2.92mm RF connectors and a Micro-D9 female connector for DC Bias and Command Control functions. The module has an operational temperature range from -40°C to +85°C and is guaranteed to meet a series of environmental test conditions for Altitude, Vibration, Humidity, and Shock.

Electrical Specifications (Values at +25° C, Sea Level)

Description	Minimum	Typical	Maximum	Units
Frequency Range	32		37	GHz
Impedance		50		Ohms
Phase Shift		360		Degrees
Phase LSB Step		11.25		Degrees
Input VSWR		1.8:1		
Output VSWR		2:1		
Insertion Loss*		9.8	11	dB
Phase Flatness		±5	±10	Degrees
IL Temperature Coefficient		0.008		dB/deg C
Input 1 dB Compression Point		20		dBm
DC Voltage		5		Volts
DC Current			1	mA
Input Power, CW			20	dBm

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm PE82P5024](#)



5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm

Phase Shifters and Trimmers Technical Data Sheet

PE82P5024

Control Bits 5

*at 0V DC Control

Absolute Maximum Rating

Parameter	Rating
Bias Voltage	+5V±10%
RF Input power	+20dBm

Mechanical Specifications

Size

Length	1.102 in [27.99 mm]
Width/Diameter	0.787 in [19.99 mm]
Height	0.394 in [10.01 mm]
Weight	0.09 lbs [40.82 g]
Body Material and Plating	Aluminum, Gold

Configuration

Input Connector	2.92mm Female
Input Connector Specification	Field Replaceable
Output Connector	2.92mm Female
Output Connector Specification	Field Replaceable

Environmental Specifications

Temperature

Operating Range	-40 to 85 deg C
Storage Range	-50 to 105 deg C

Humidity	100% RH at 35°C, 95% RH at 40°C
Shock	20G for 11 msec half sine wave, 3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 Feet

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm PE82P5024](#)



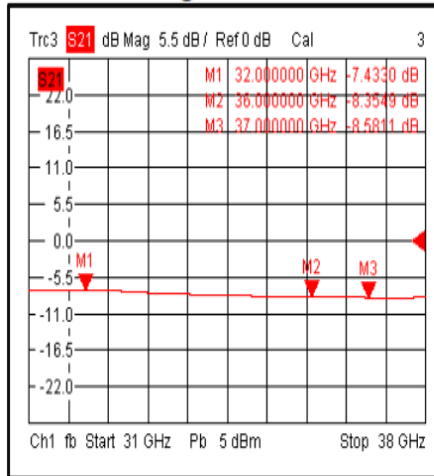
5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm

Phase Shifters and Trimmers Technical Data Sheet

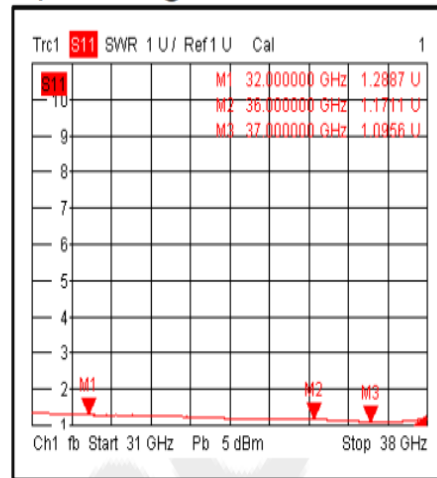
PE82P5024

Typical Performance Data

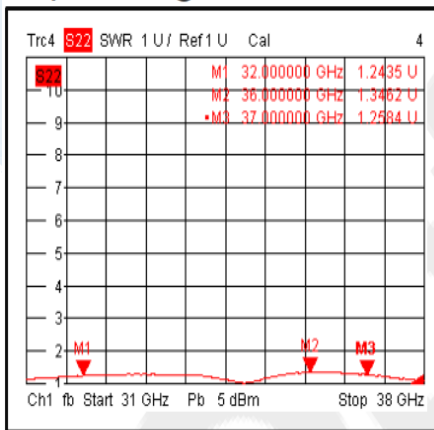
Insertion Loss@+25°C



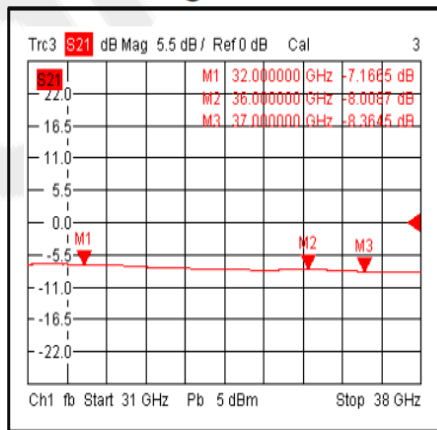
Input VSWR @+25°C



Output VSWR @+25°C



Insertion Loss @-40°C



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm PE82P5024](#)

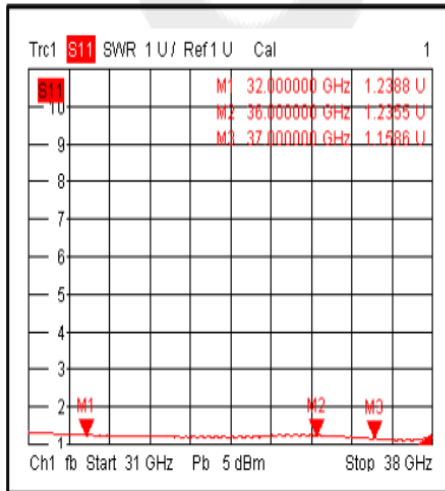


5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm

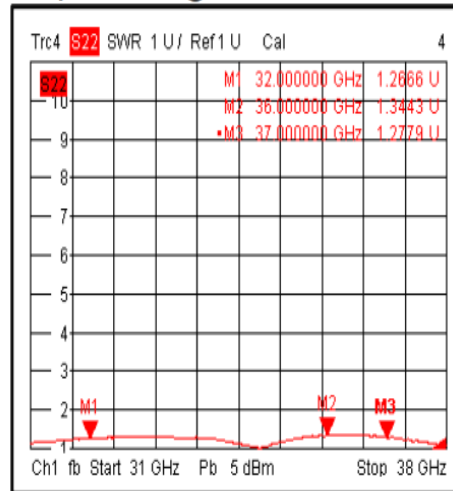
Phase Shifters and Trimmers Technical Data Sheet

PE82P5024

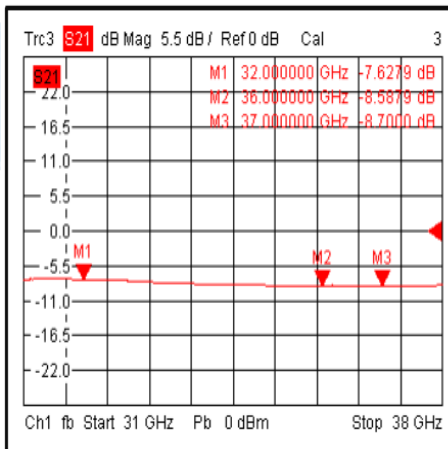
Input VSWR @-40°C



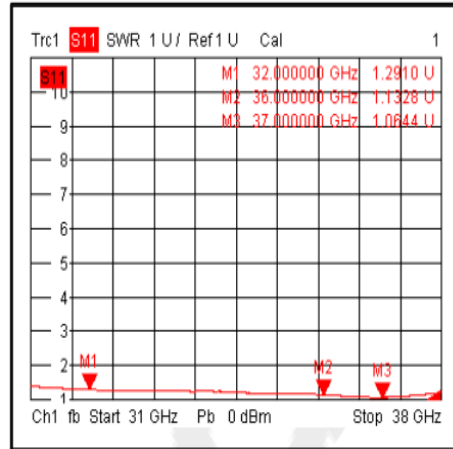
Output VSWR @-40°C



Insertion Loss @+85°C



Input VSWR @+85°C



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm PE82P5024](#)

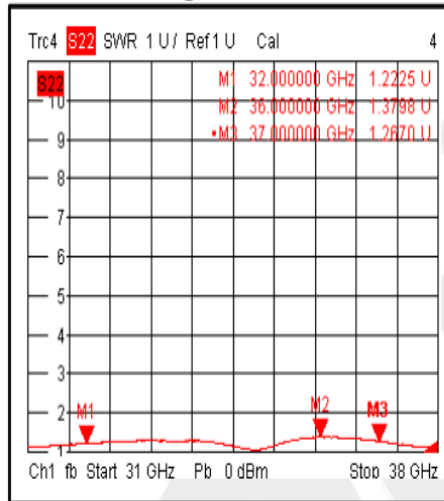
5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm



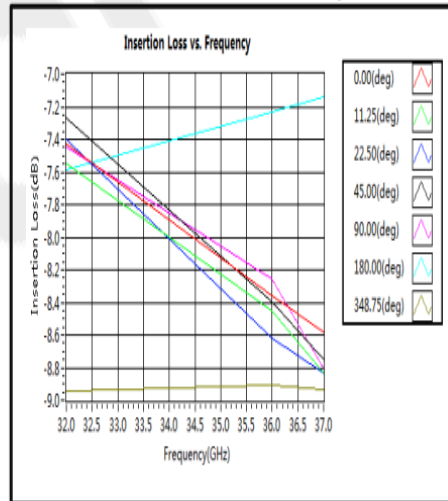
Phase Shifters and Trimmers Technical Data Sheet

PE82P5024

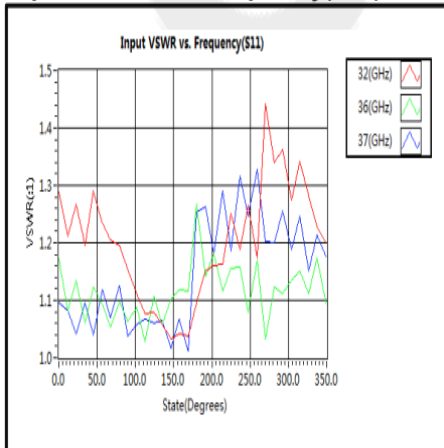
Output VSWR @+85°C



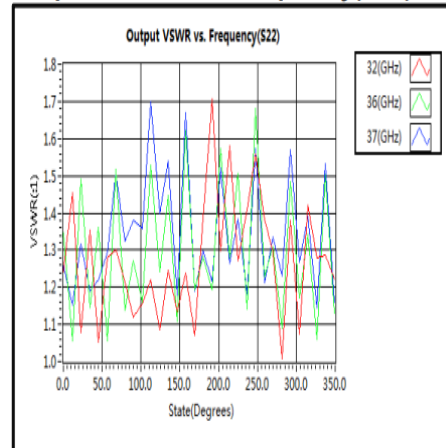
Insertion Loss vs. Frequency



Input VSWR vs. Frequency(S11)



Output VSWR vs. Frequency(S22)



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm PE82P5024](#)

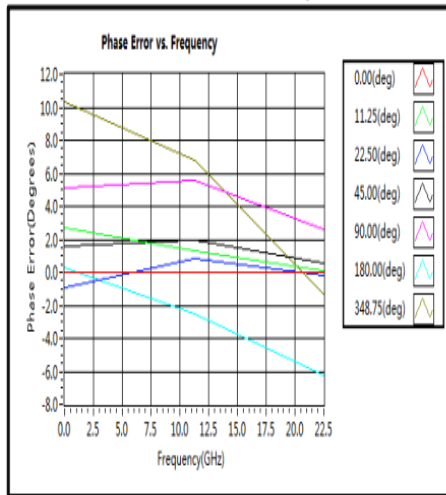


5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm

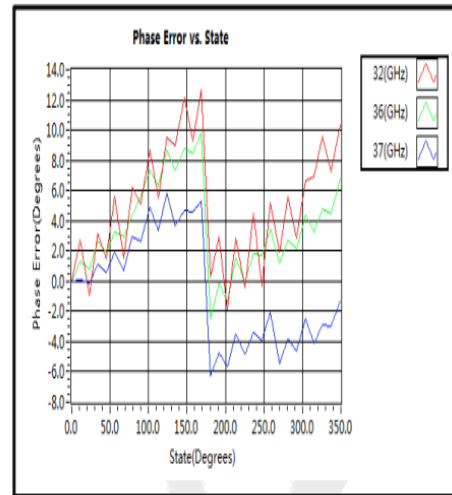
Phase Shifters and Trimmers Technical Data Sheet

PE82P5024

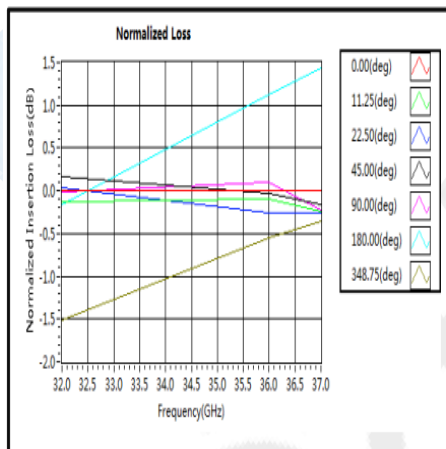
Phase Error vs. Frequency



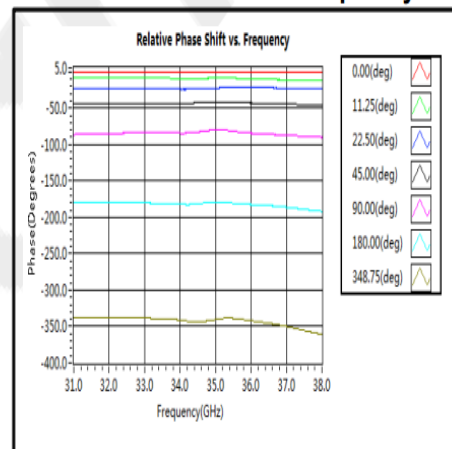
Phase Error vs. State



Normalized Loss. All States



Relative Phase Shift vs. Frequency



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm PE82P5024](#)

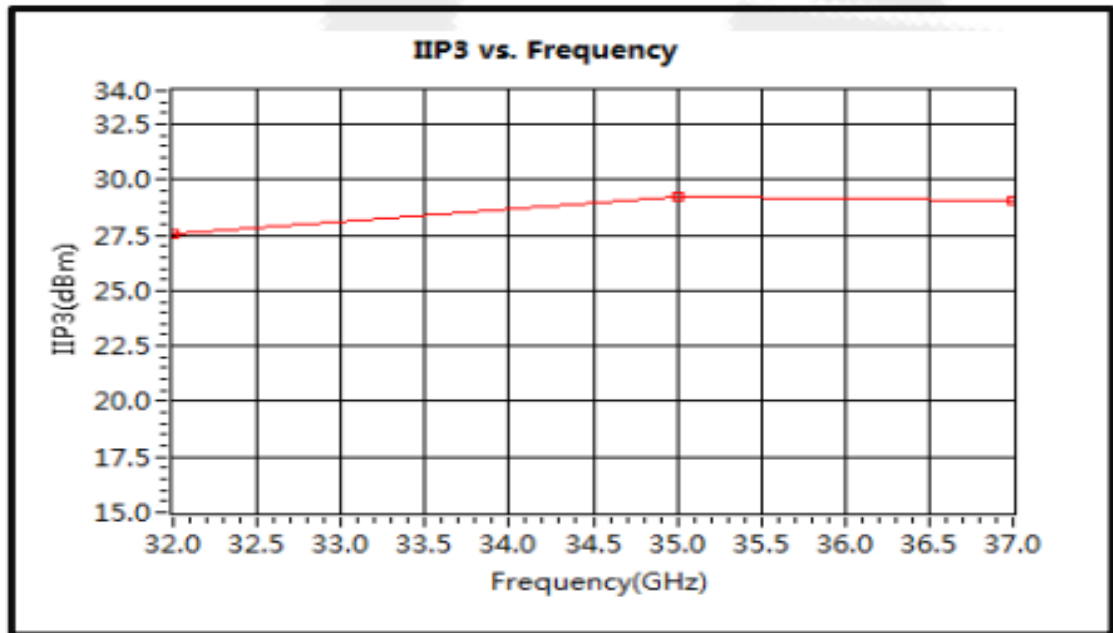


5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm

Phase Shifters and Trimmers Technical Data Sheet

PE82P5024

IIP3



5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm PE82P5024](#)

URL: <https://www.pasternack.com/programmable-phase-shifter-37-ghz-0-0-degrees-2.92mm-pe82p5024-p.aspx>

PE82P5024 CAD Drawing

5 Bit TTL Programmable Phase Shifter, 32 GHz to 37 GHz, 360 degree Phase Range, 5.625 degree Control Step Size, +30 dBm Max Pin, 2.92mm

