

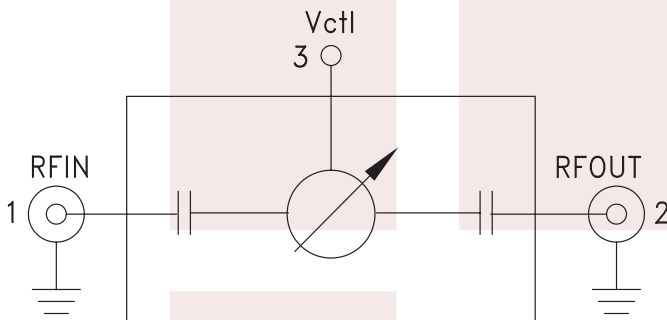
SMA Analog Phase Shifter With an Adjustable Phase of 120 Deg. Per GHz From 6 GHz to 15 GHz

FMPS2001 is an Analog Phase Shifter with 400 deg typ phase range with a control voltage Range of 0 VDC to 5 VDC and a modulation bandwidth of 50 MHz over the operating frequency range from 6 GHz to 18 GHz. The unit provides a continuously variable phase shift of 0 to 800 degrees at 6 GHz, and 0 to 450 degrees at 16 GHz, with consistent insertion loss versus phase shift.

The phase shift is monotonic with respect to control voltage. The analog phase shifter is housed in a miniature hermetic module with replaceable SMA connectors.

This analog phase shifter module is part of Fairview Microwave’s expanding line of Phase Shifters. These Phase Shifters are high performance modules that offer excellent performance. The family of Phase Shifters has a variety of control types including Analog and Digital Modules that offer very wide frequency range coverage and outstanding electrical performance in the band.

Functional Block Diagram



Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	6		15	GHz
Impedance		50		Ohms
Phase Adjustment		120		Deg/GHz



Features:

- Analog Phase Shifter
- 6 GHz to 15 GHz Frequency Range
- 800 Deg Typ Phase Shift
- 0 - 5 VDC Control Voltage Range
- 1.36 Watt CW Max InputPower
- Insertion Loss 7 dB Typ
- 50 MHz Modulation Bandwidth

Applications:

- Electronic Warfare
- Test & Measurement
- Military & Space
- Radar
- Military Communications Systems
- Phased Arrays
- Tracking Systems
- Direction Finding Systems
- Antenna Test
- Noise Cancelling Systems
- Frequency Translation
- Deep Space Surveillance
- Fiber Optics

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Performance by Frequency

Description	Frequency	Min.	Typ.	Max.	Units
Phase Shift Range:	6 - 10 GHz	600	800		degrees
	10 - 15 GHz	360	600		degrees
Insertion Loss	6 - 15 GHz		7	10	dB
Return Loss (Input And Output)	6 - 15 GHz		7		dB
Control Voltage Range	6 - 15 GHz		0 - 5		Volt
Modulation Bandwidth	6 - 15 GHz		50		MHz
Phase Voltage Sensitivity	6 - 15 GHz		120		deg /Volt
Insertion Phase Temperature Sensitivity	6 - 15 GHz		0.5		deg /°C

Mechanical Specifications

Size

Length	0.64 in [16.26 mm]
Width/Diameter	0.7 in [17.78 mm]
Height	0.29 in [7.37 mm]
Weight	0.0555 lbs [25.17 g]

Configuration

Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-55 to 85 deg C
Storage Range	-65 to 150 deg C

Temperature Cycle	MIL-STD-883, Method 101C, Cond B
Hermetic Seal	Gross Leak MIL-STD-883 Method 1014C1/Fine Leak MIL-STD-883, Method 1014A2, 5 x 10 ⁻⁸ atm cc
ESD Sensitive	ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.



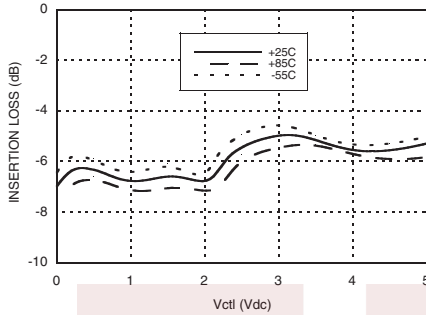
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

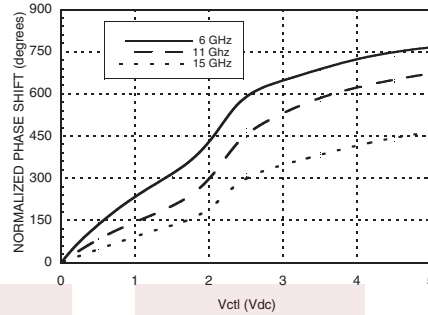
Notes:

Typical Performance Data

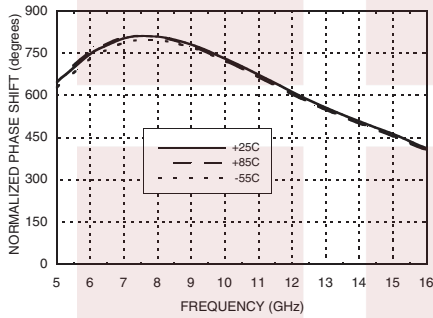
Insertion Loss vs. Control Voltage



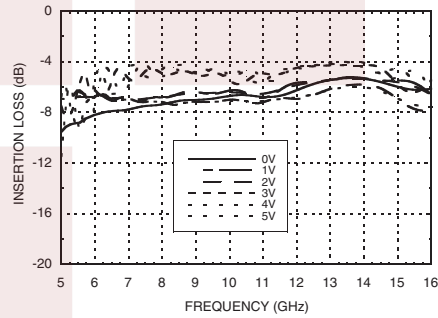
Phase Shift vs. Control Voltage



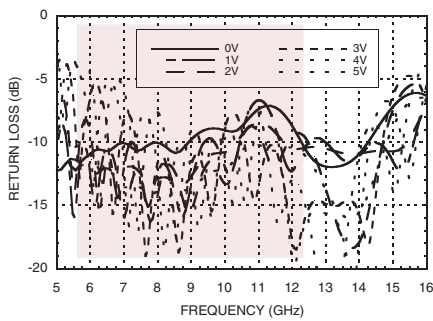
**Phase Shift vs. Frequency @ Vctl = 5V
 (Relative to Vctl = 0V)**



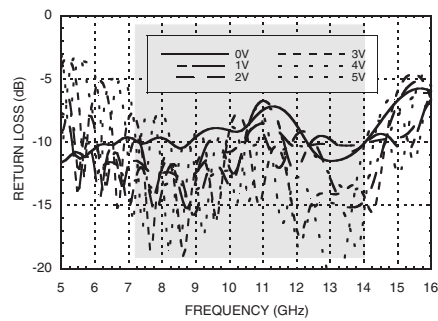
Insertion Loss vs. Frequency



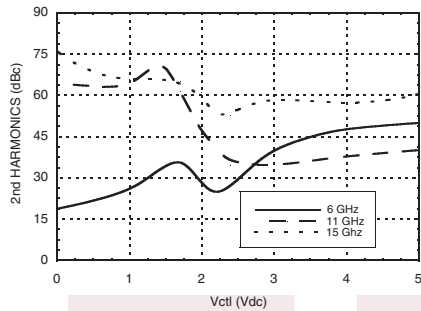
**Input Return Loss vs. Frequency,
 Vctl = 0 to +5V**



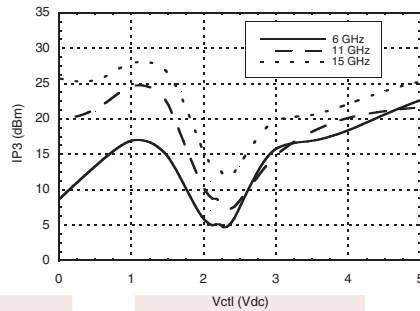
**Output Return Loss vs. Frequency,
 Vctl = 0 to +5V**



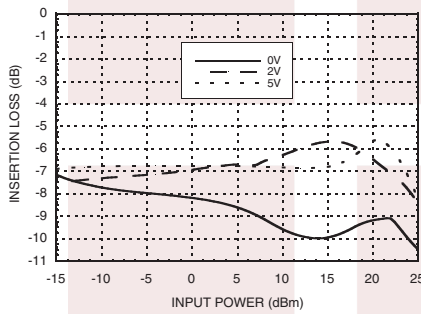
Second Harmonics vs. Control Voltage,
Pin = -10 dBm



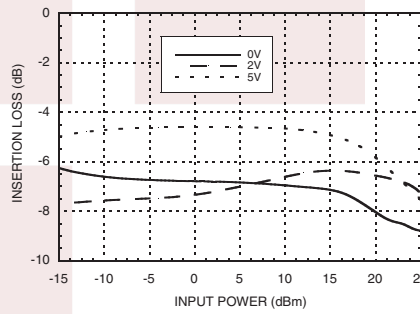
Input IP3 vs. Control Voltage



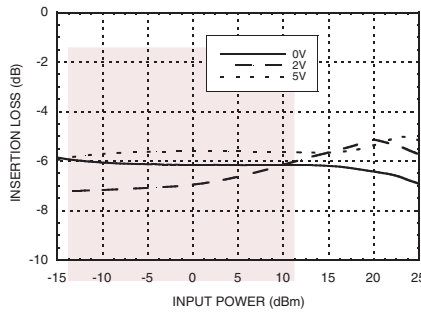
Insertion Loss vs. Pin @ 7 GHz



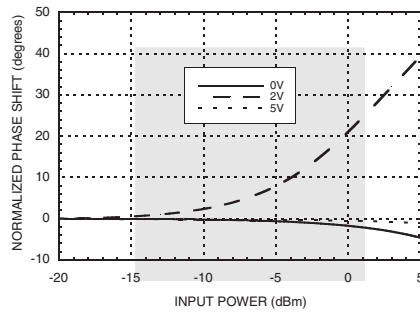
Insertion Loss vs. Pin @ 11 GHz



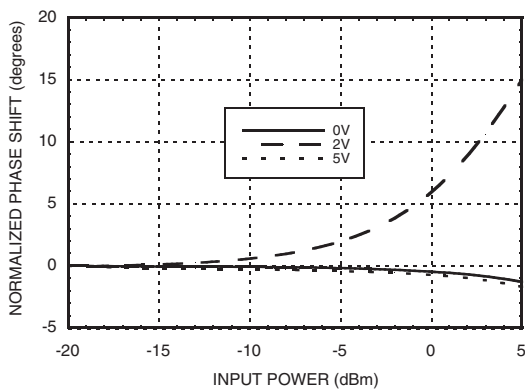
Insertion Loss vs. Pin @ 15 GHz



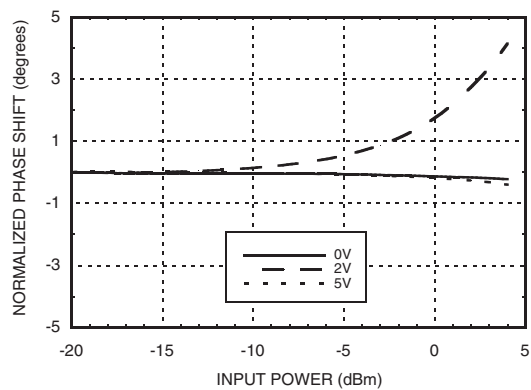
Phase Shift vs. Pin @ 7 GHz



Phase Shift vs. Pin @ 11 GHz



Phase Shift vs. Pin @ 15 GHz

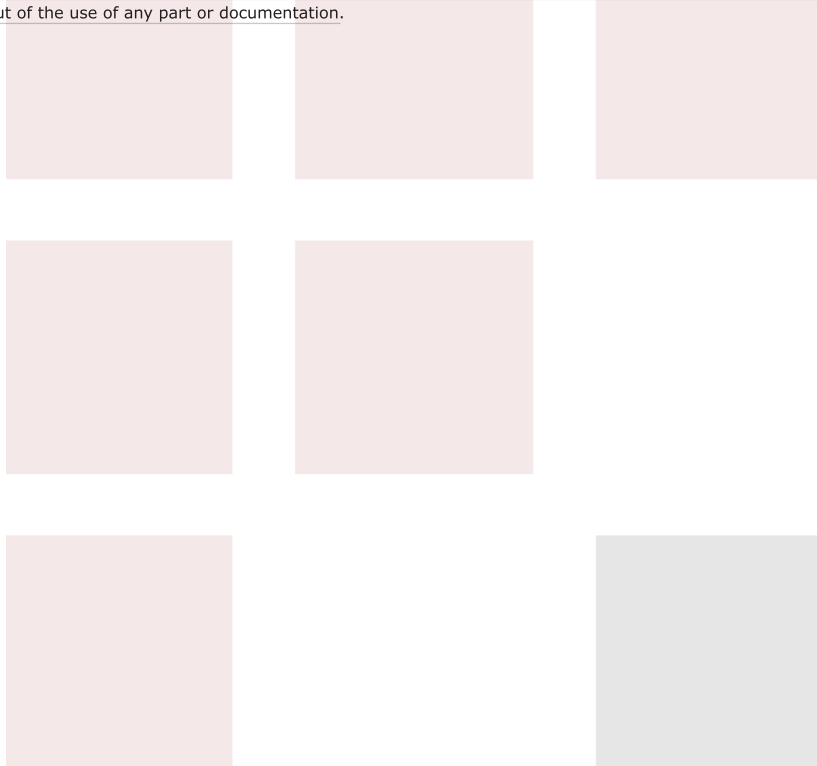


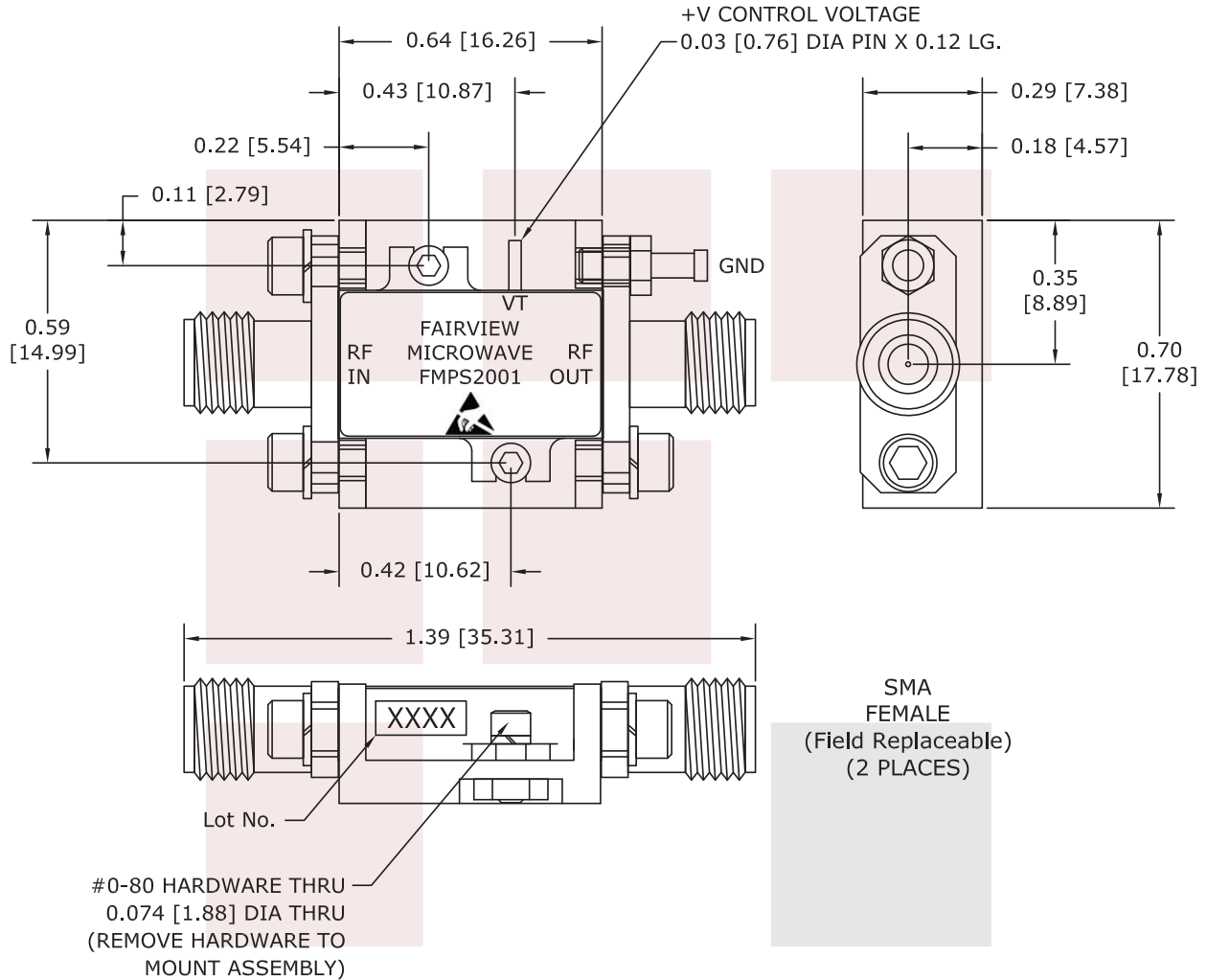
SMA Analog Phase Shifter With an Adjustable Phase of 120 Deg. Per GHz From 6 GHz to 15 GHz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SMA Analog Phase Shifter With an Adjustable Phase of 120 Deg. Per GHz From 6 GHz to 15 GHz FMPS2001](#)

URL: <https://www.fairviewmicrowave.com/sma-analog-phase-shifter-6-15-ghz-fmps2001-p.aspx>

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TITLE SMA Analog Phase Shifter With an Adjustable Phase of 120 Deg. Per GHz From 6 GHz to 15 GHz		DWG NO FMPS2001		CAGE CODE 3FKR5	
CAD FILE	091916	SHEET		SCALE	N/A
		SIZE	A		2233