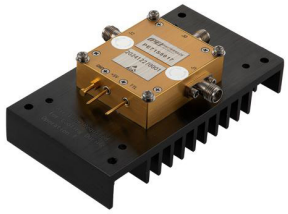
2.92mm Reflective SPDT PIN Diode Switch From 26 GHz to 40 GHz Rated at 16 Watt (+42 dBm) with Heatsink



FMSW5017

Features

- Reflective SPDT High Power PIN Diode Switch
- Reflective Design
- Frequency Range: 26 GHz to 40 GHz
- Insertion Loss: 2.8 dB max
- Isolation: 25 dB min
- VSWR: 2:1 max
- Maximum RF Input Power: 16 Watt
- Input IP3: +45 dBm typ
- Switching Speed: 100 nsec
- TTL Compatible Driver Circuitry
- 50 Ohm Design
- 2.92mm Female Connectors
- Compact Package Design withstands up to 95% Relative Humidity
- -40°C to +85°C Operating Temperature

Applications

- Aerospace & Defense
- Microwave Radio
- Military & Commercial Communication
- VSAT
- SATCOM
- Test & Measurement
- Wireless Infrastructure
- Fiber Optics

Description

The FMSW5017 is a single pole double throw (SPDT) PIN diode switch that operates across a wide frequency band from 26 GHz to 40 GHz. The 50 ohm reflective design supports TTL compatible driver circuitry for accurate logic control. Impressive typical performance includes 2.8 dB insertion loss max, 25 dB isolation min, and 100 nsec switching speed. The switch requires a bias voltage of +5Vdc, and has maximum input power handling of up to 16 W. The rugged and compact package supports field replaceable 2.92mm female RF connectors and solder terminal pins for DC bias voltage and TTL control. The switch is designed for high reliability with a wide operational temperature range of -40°C to +85°C, and meets a series of environmental test conditions including Altitude, Vibration, Humidity, and Shock.

Electrical Specifications

TTL Control Logic — Off/Isolation: "0" 0 to 0.8 V; On/Low Loss: "1" 2.8 to 5 V

Description	Min	Typ	Max	Units
Frequency Range	26		40	GHz
Impedance		50		Ohms
VSWR		1.8:1	2:01	
Insertion Loss		1.5	2.8	dB
Isolation	25	30		dB
Switching Time		100		ns
0.1dB Compression Point		41		
Input IP3		45		dBm
Power In, Hot Switching (CW)			42	Watts
DC Power Dissipation		0.7		Watt
Positive Operating Voltage		5		Vdc
Current @ 5 Vdc		100		mA
Operating Temperature	-40		85	deg C

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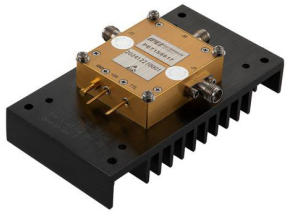

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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	26 to 40					GHz

Electrical Specification Notes:
1. If the device operates in high power state, recommend keeping case temperature lower than 60 degrees C.

2. Cold Switching: Before changing any TTL signal(s), the RF input power must be blanked or the switch could be damaged.

Absolute Maximum Rating

Parameter	Rating
Biasing	+5V±10%
TTL Control Voltage	0~0.8V/2.8~5V

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Mechanical Specifications

Size

Length	1.57 in [39.88 mm]
Width	1.34 in [34.04 mm]
Height	0.47 in [11.94 mm]
Weight	0.05 lbs [22.68 g]
Body Material and Plating	Copper, Gold

Configuration

Design	Reflective, SPDT
RF Input/Output Connector	2.92mm Female
Band Type	Wideband

Environmental Specifications

Temperature

Operating Range	-40 to 85 deg C
Storage Range	-50 to -105 deg C
Humidity	100% RH at 35ºc, 95%RH at 40ºc
Shock	20G for 11msec half sine wave,3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)? 60,000 ft. 1.0psi min
Hermetic Seal	Optional

Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:

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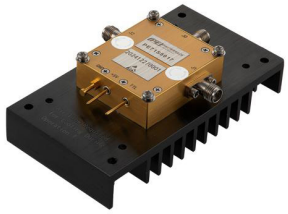

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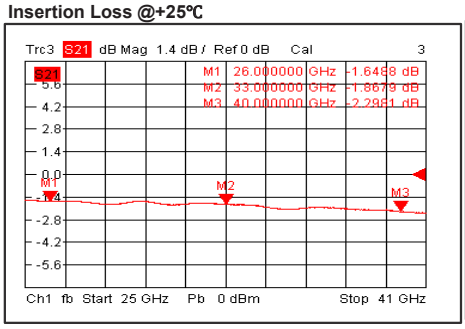
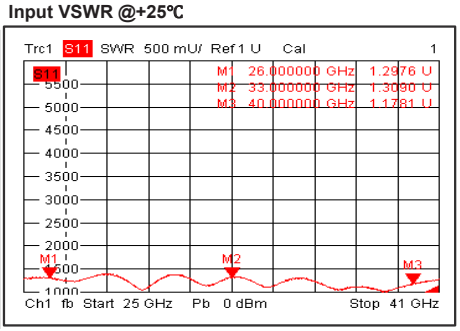
Typical Performance Data

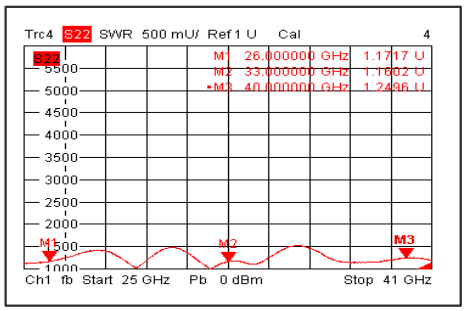
Insertion Loss @+25℃



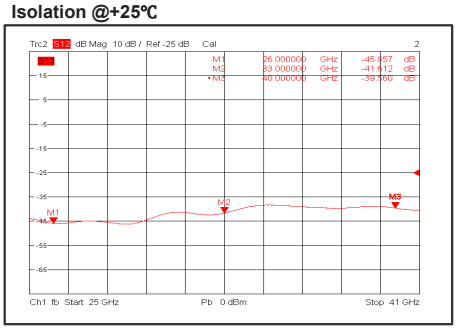
Input VSWR @+25℃



Output VSWR @+25℃



Isolation @+25℃



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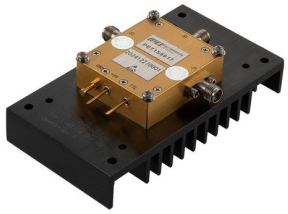

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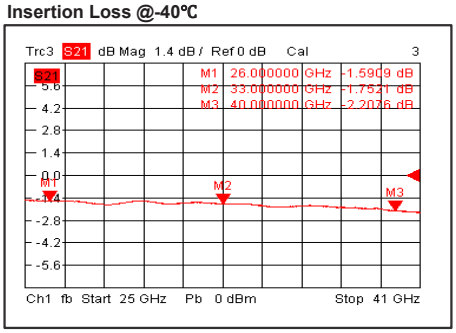
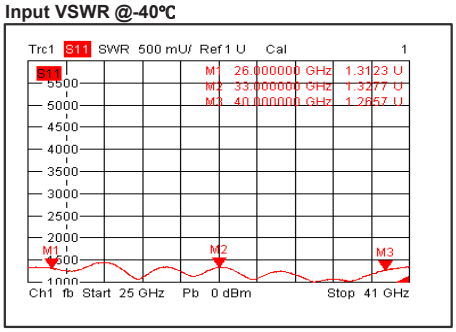
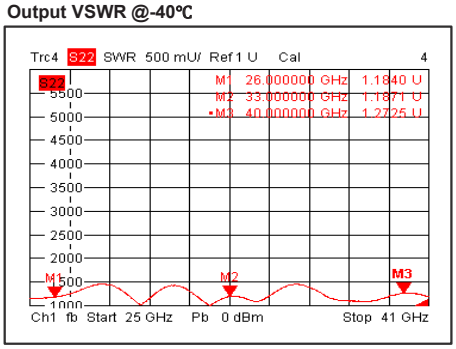
Insertion Loss @-40℃



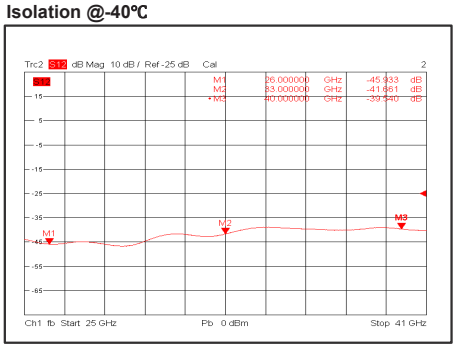
Input VSWR @-40℃



Output VSWR @-40℃



Isolation @-40℃



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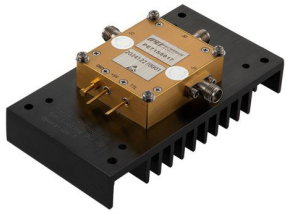

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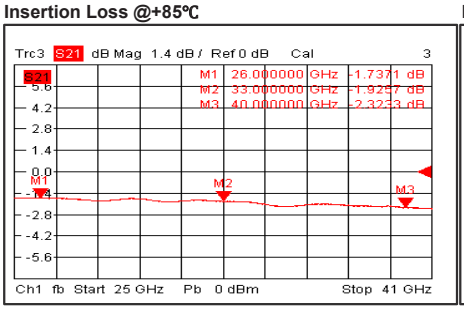
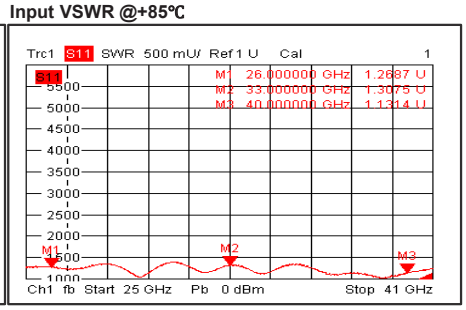
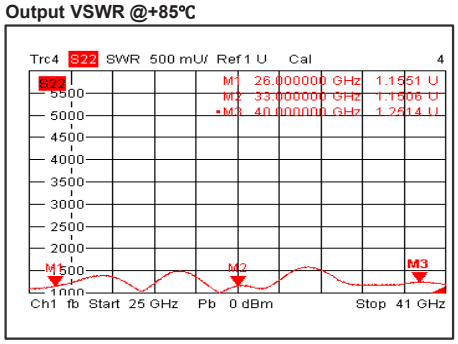
Insertion Loss @+85℃



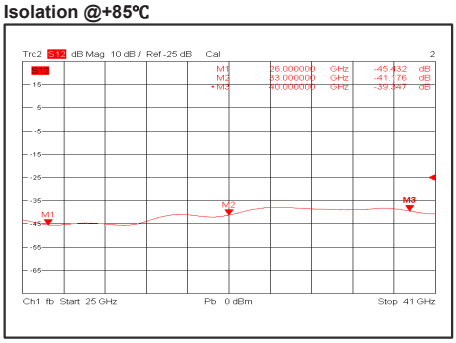
Input VSWR @+85℃



Output VSWR @+85℃



Isolation @+85℃



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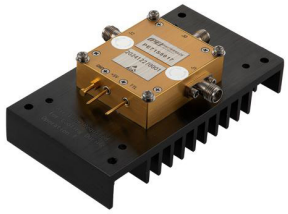

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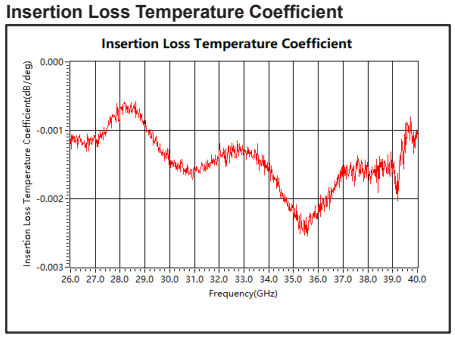
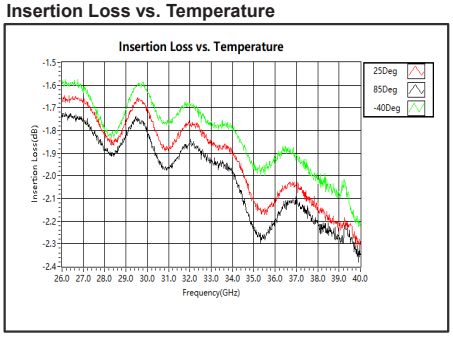
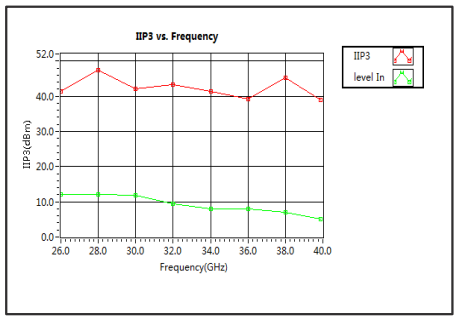
Insertion Loss Temperature Coefficient



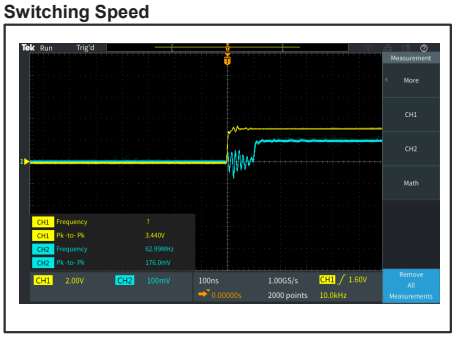
Insertion Loss vs. Temperature



IIP3



Switching Speed



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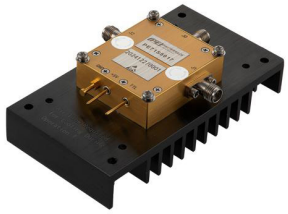

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For additional information on this product, please click the following link: 2.92mm Reflective SPDT PIN Diode Switch From 26 GHz to 40 GHz Rated at 16 Watt (+42 dBm) with Heatsink FMSW5017

URL: https://www.fairviewmicrowave.com/2.92mm-spdt-pin-diode-switch-40-ghz-fmsw5017-p.aspx

FMSW5017 CAD Drawing

2.92mm Reflective SPDT PIN Diode Switch From 26 GHz to 40 GHz Rated at 16 Watt (+42 dBm) with Heatsink