

**SPDT High Isolation PIN Diode Switch DC to 20 GHz,
35 dB, 23 dBm, 4 dB Loss and SMA**

FMSW5000 is a Single Pole Double Throw (SPDT) Absorptive Switch that covers a wide frequency band from DC to 20 GHz. This general purpose design utilizes GaAs MESFET MMIC technology that has extremely fast switching speed levels of 5 nsec. Additional typical performance includes 45 dB Isolation up to 5 GHz, and 2 dB Insertion Loss at 12 GHz. The design also incorporates CMOS driver circuitry that allows a single +5V biased voltage at very low DC current levels. The drop-in package is hermetically sealed with field replaceable SMA connectors. Operating temperature range is -55°C to +85°C. And for added confidence, this rugged package assembly is designed to meet MIL-STD-883 test conditions for Hermeticity and Temperature Cycle.



Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	DC		20	GHz
Insertion Loss		4		dB
Isolation		35		dB
Switching Speed		5		ns
Control Input		TTL		
Power Handling		+23		dBm

Mechanical Specifications

Size	
Length	0.89 in [22.61 mm]
Width/Dia.	0.68 in [17.27 mm]
Height	0.235 in [5.97 mm]
Weight	0.077 lbs [34.93 g]

Environmental Specifications By Design

Temperature	
Operating Range	-55 to +85 deg C
Storage Range	-65 to +150 deg C
Temperature Cycling	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 Sensitivity	ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.



Compliance Certifications (visit www.FairviewMicrowave.com for current document)

RoHS Compliant

Plotted and Other Data

Notes:

- Values at +25 °C, sea level

Features:

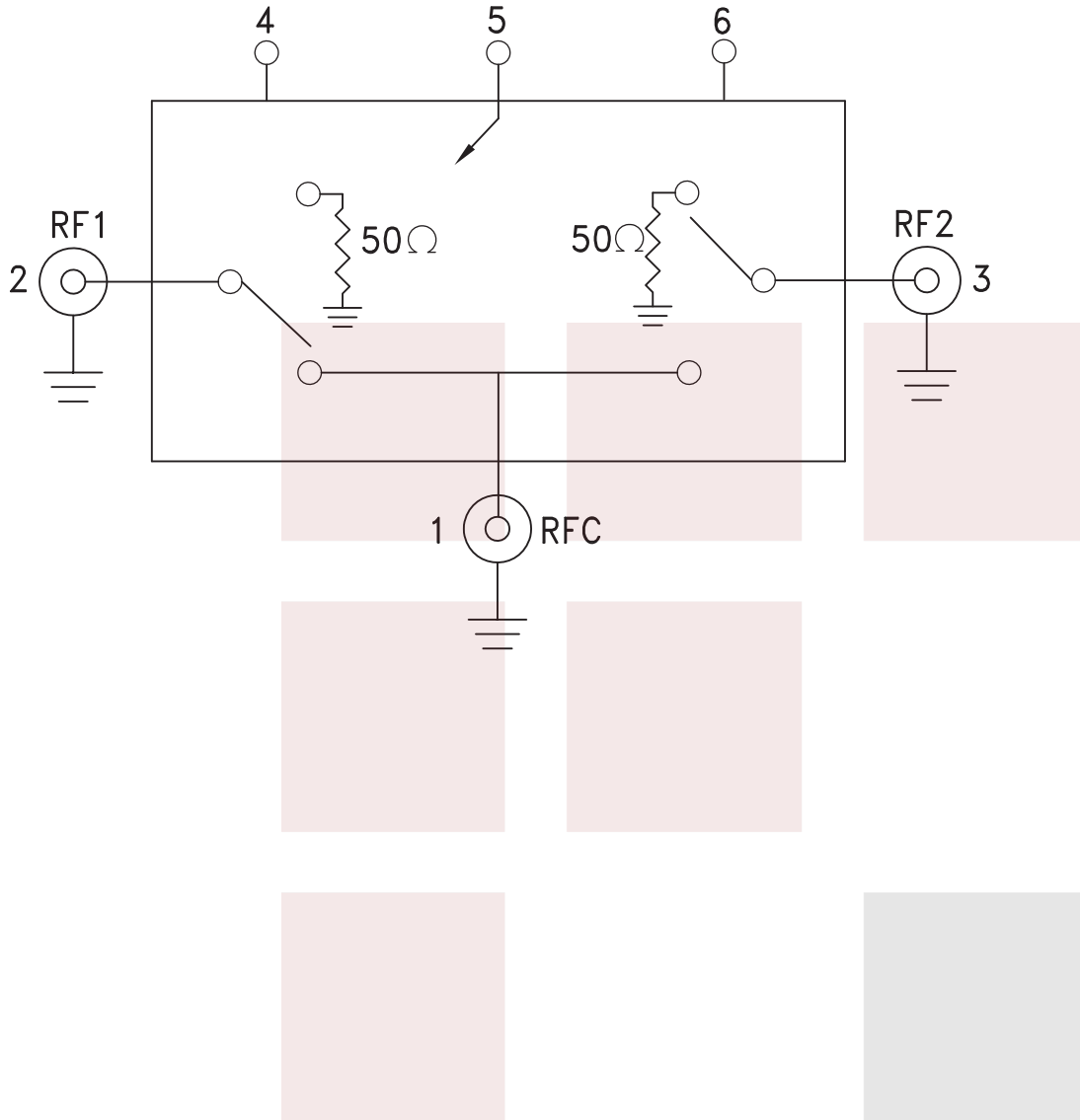
- SPDT Non-Reflective Switch Design
- GaAs MESFET MMIC Technology
- Ultra Fast Switching Speed 5 nsec typical
- High Isolation 45 dB typical up to 5 GHz
- Low Insertion Loss 2 dB typical at 12 GHz
- CMOS Driver Circuit
- Hermetically Sealed Module
- Field Replaceable SMA Connectors
- -55°C to +85°C Operating Temperature
- Designed to meet MIL-STD-883 Conditions

Applications:

- Electronic Warfare
- Electronic Countermeasures
- Microwave Radio
- VSAT
- Radar
- Fiber Optic
- Space Systems
- Test Instrumentation
- Telecom Infrastructure
- Base station Infrastructure

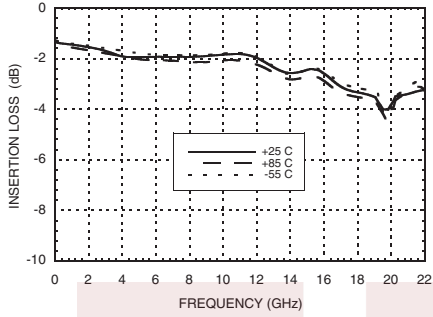
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Functional Block Diagram

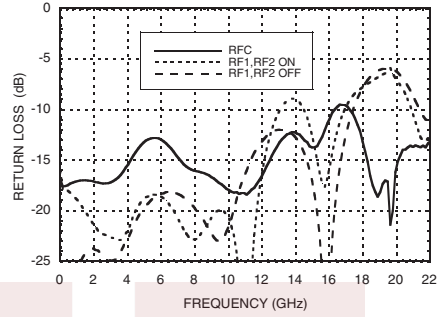


Typical Performance Data

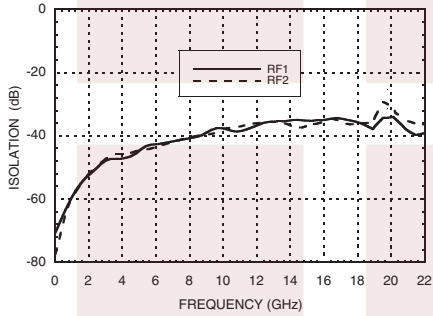
Insertion Loss



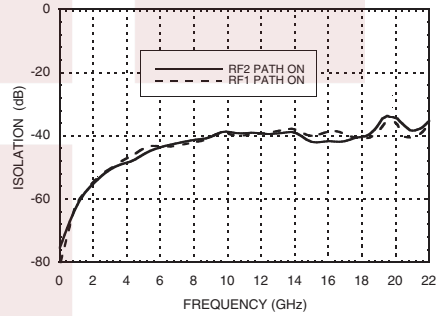
Return Loss



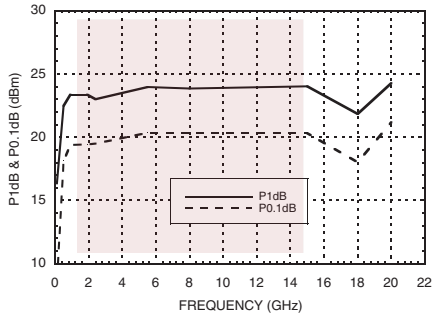
Isolations



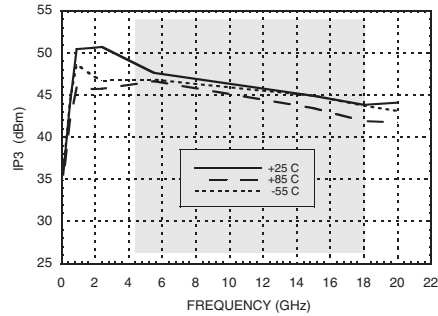
Isolation Between Ports RF1 and RF2



Input P1dB & P0.1dB Compression Point



Input Third Order Intercept Point

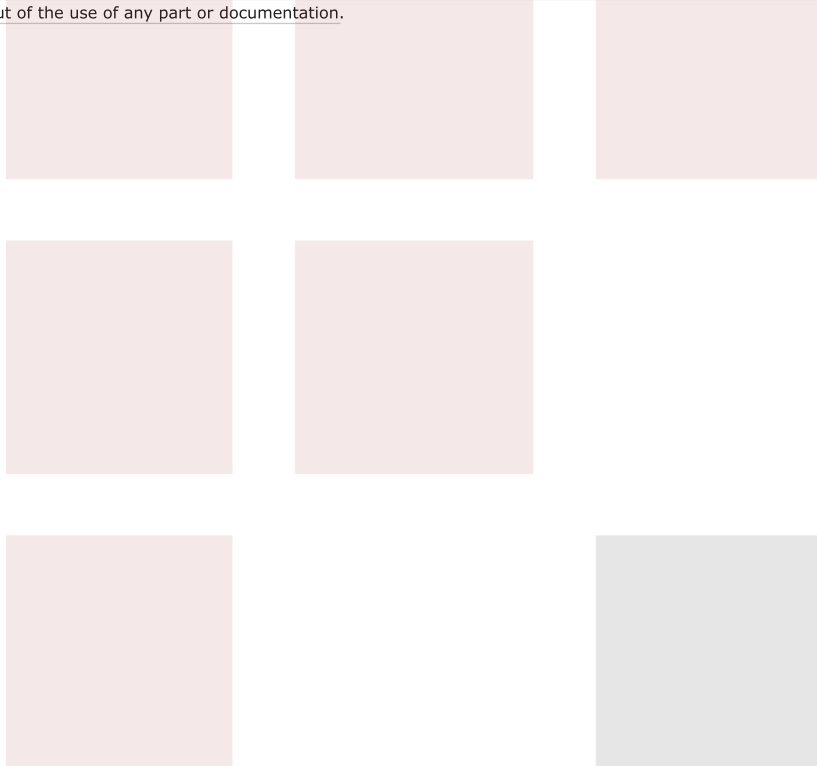


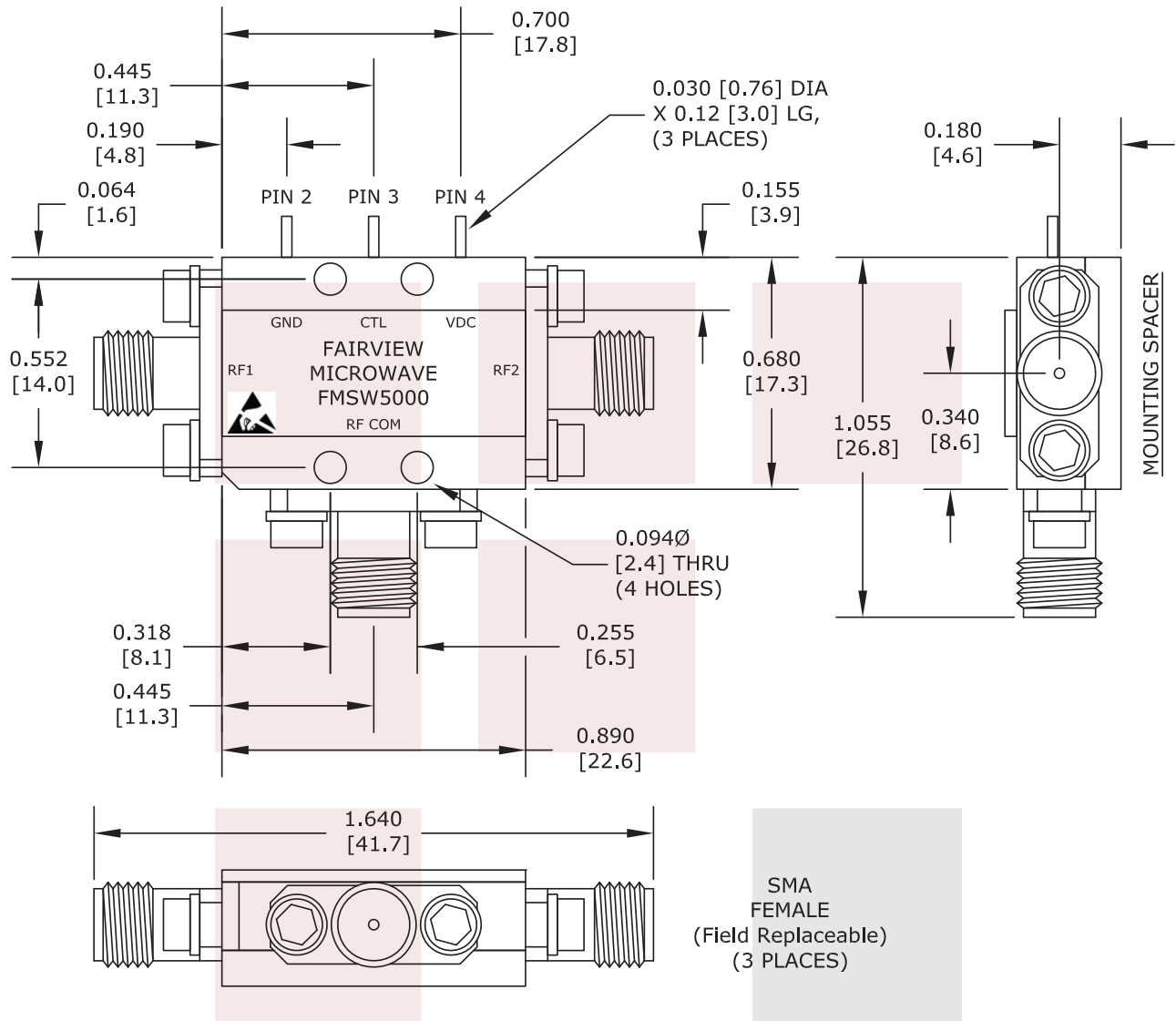
SPDT High Isolation PIN Diode Switch DC to 20 GHz, 35 dB, 23 dBm, 4 dB Loss and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT High Isolation PIN Diode Switch DC to 20 GHz, 35 dB, 23 dBm, 4 dB Loss and SMA FMSW5000](#)

URL: <https://www.fairviewmicrowave.com/high-isolation-pin-diode-switch-20-ghz-35db-4db-fmsw5000-p.aspx>

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LOGIC TABLE		
CONTROL INPUT	SIGNAL PATH STATE	
	VOLT	RFC to RF1
HIGH (+5 VDC)	ON	OFF
LOW (0 VDC)	OFF	ON

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NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. DIMENSIONS ARE IN INCHES [mm].

TITLE
SPDT High Isolation PIN Diode Switch DC to 20 GHz,
35 dB, 23 dBm, 4 dB Loss and SMA

DWG NO	FMSW5000		CAGE CODE			3FKR5
CAD FILE	070816	SHEET	SCALE	N/A	SIZE	A 2233