

Field Replaceable SMA SP3T PIN Diode Switch From 500 MHz to 18 GHz Rated at +20 dBm

FMSW6221 is a Single Pole Three Throw (SP3T) Reflective PIN Diode Switch that operates from 0.5 to 18 GHz. Performance includes 3.2 dB typ insertion loss, 55 dB min Isolation, and 100 nsec max switching speed. The design incorporates TTL-compatible driver circuitry for accurate logic control. Operational temperature range is -40°C to +85°C and dual voltage controls of +5 VDC and -15 VDC are required. The rugged package design is compact, features field replaceable female SMA connectors, and is designed to meet MIL-STD 202F environmental test conditions which include humidity, shock, vibration, altitude, and temperature cycle.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	0.5		18	GHz
Impedance		50		Ohms
VSWR			2:1	
Insertion Loss		3.2		dB
Isolation	55			dB
Switching Time			100	ns
Input Power (CW)			0.1	Watts
Survival Power			1	Watts
Positive Operating Voltage		5		Vdc
Negative Operating Voltage		-15		Vdc
Current @ 5 Vdc		120		mA
Current @ -15 Vdc		50		mA
Operating Temperature	-40		+85	deg C

Mechanical Specifications

Length	1.2 in [30.48 mm]
Width	1.2 in [30.48 mm]
Height	0.5 in [12.7 mm]
Weight	0.056 lbs [25.4 g]
Finish	Blue Paint

Configuration

Design	Reflective, SP3T
RF Connector	SMA Female
RF Connector Option	Field Replaceable
Control Connector	Solder Pin

Environmental Specifications

Temperature

Operating Range	-40 to +85 deg C
Storage Range	-55 to +125 deg C

Humidity	MIL-STD-202F, Method 103B, Condition B
Shock	MIL-STD-202F, Method 213B, Condition B



Features:

- SP3T Reflective Switch
- 0.5 GHz to 18.0 GHz
- Insertion Loss 3.2 dB typ
- Isolation 55 dB min
- Power Input 20 dBm CW max
- Switching Speed 100 nsec max

Applications:

- Test & Measurement
- Military Communication
- Commercial Communication
- Wireless Communications
- SATCOM
- Military Electronic Systems
- RF Test Stations

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Vibration
 Altitude
 Temperature Cycling
 ESD Sensitivity

MIL-STD-202F, Method 204D, Condition B
 MIL-STD-202F, Method 105C, Condition B
 MIL-STD-202F, Method 107D, Condition A
 ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.



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

REACH Compliant

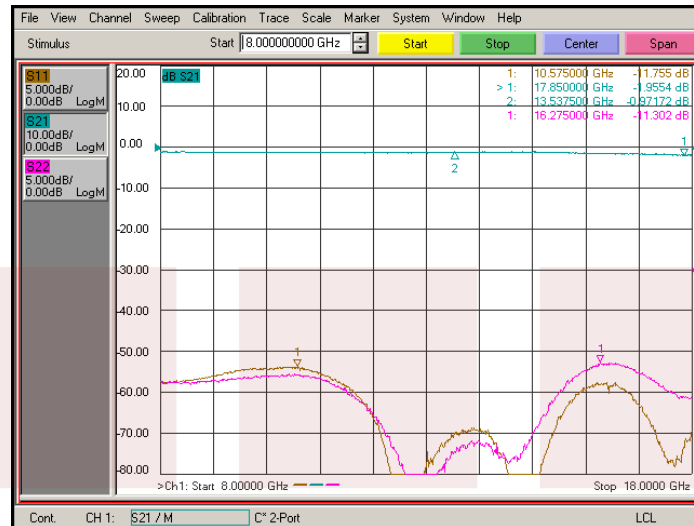
12/17/2015

Plotted and Other Data

Notes:

Typical Performance Data

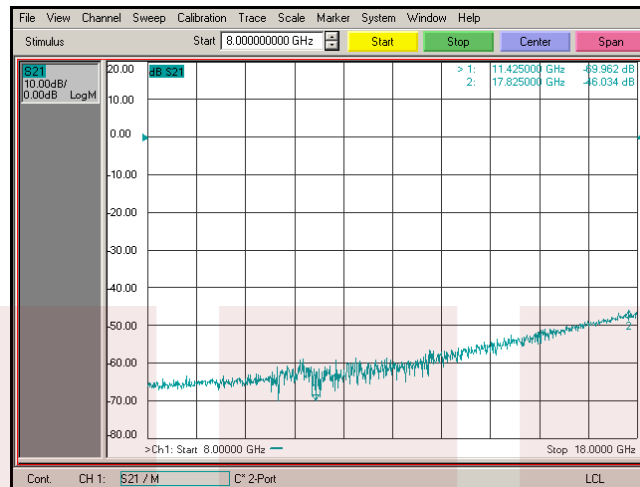
(J1-J2) Insertion Loss and Return Loss



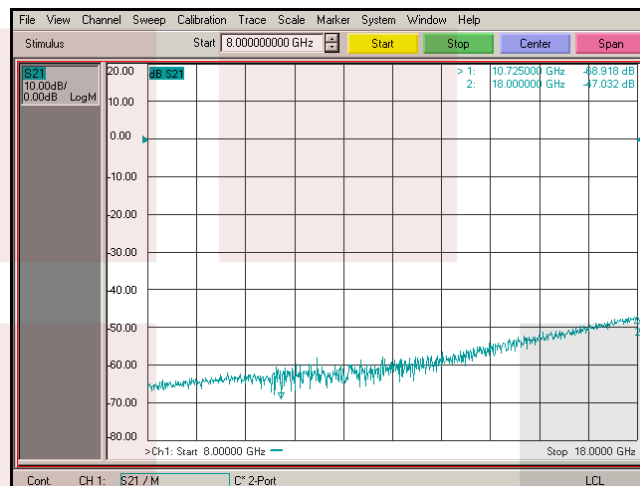
(J1-J3) Insertion Loss and Return Loss



(J1 – J2) Isolation and Return Loss

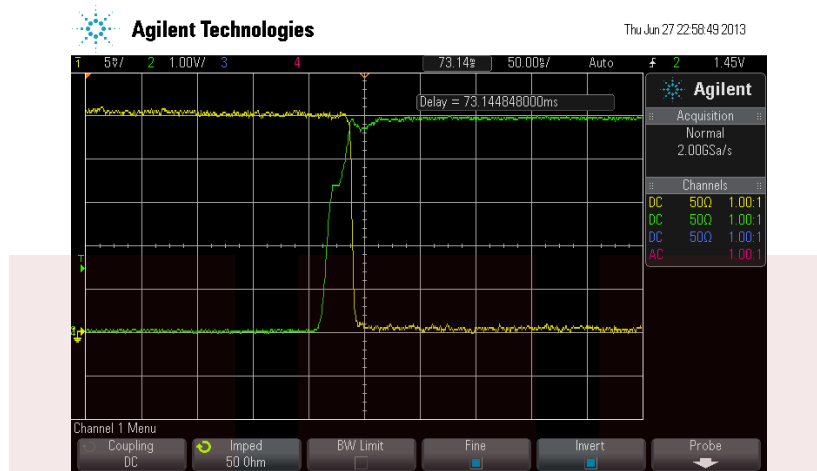


(J1 – J3) Isolation and Return Loss

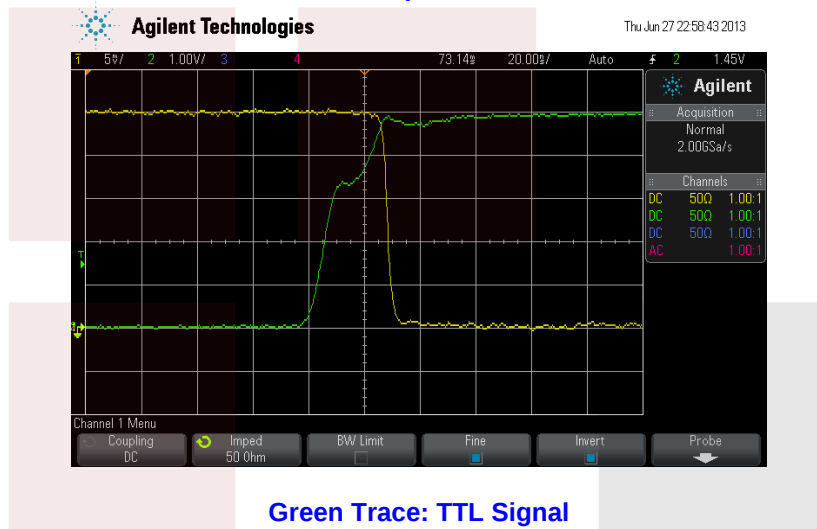


Switching Speed OFF Delay & Fall Time

50ns per Div.



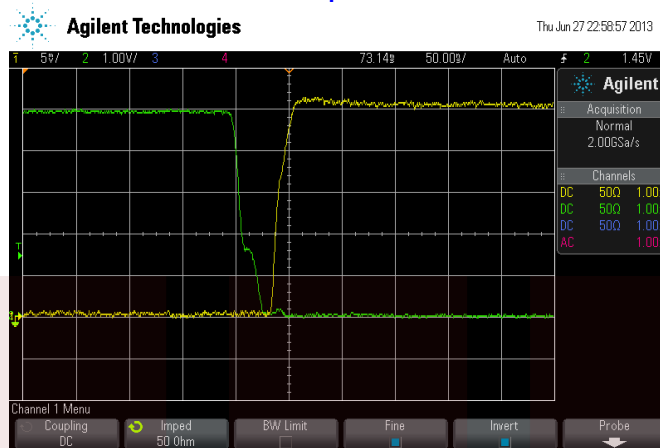
20ns per Div.



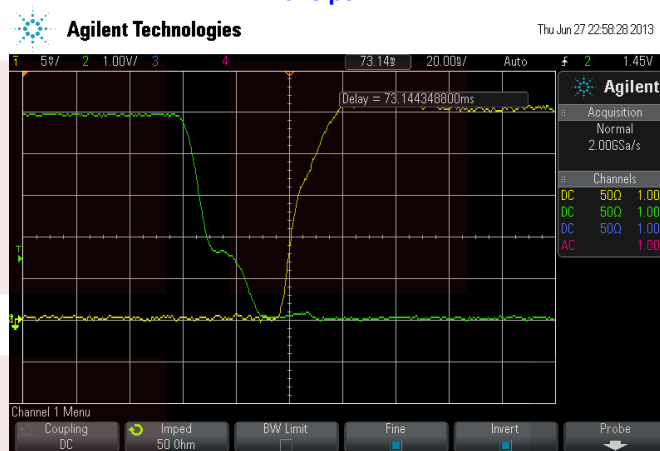
Green Trace: TTL Signal
Yellow Trace: RF Signal

ON Delay & Rise Time

50ns per Div.



20ns per Div.



Green Trace: TTL Signal
Yellow Trace: RF Signal

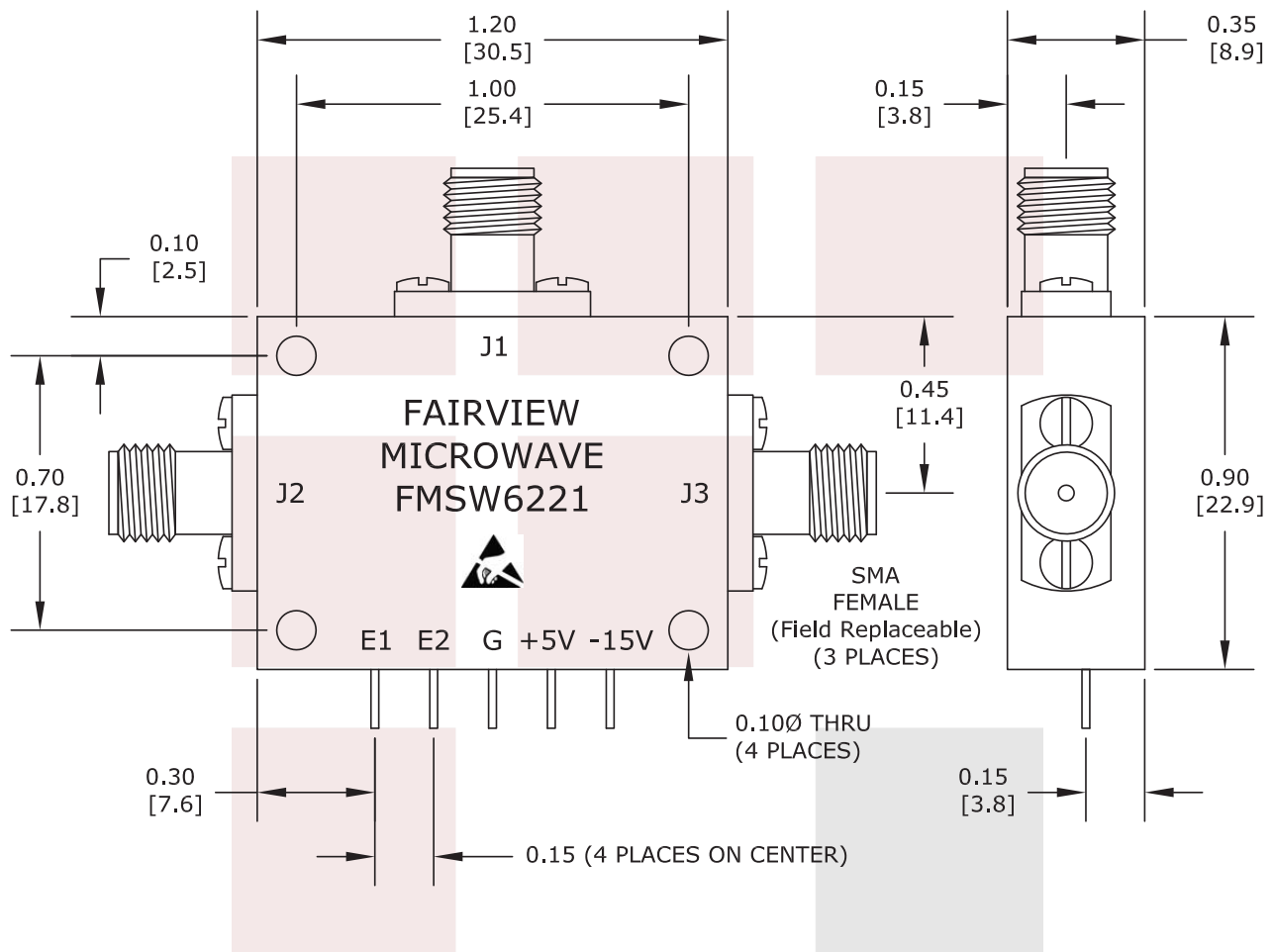
Field Replaceable SMA SP3T PIN Diode Switch From 500 MHz to 18 GHz Rated at +20 dBm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [Field Replaceable SMA SP3T PIN Diode Switch From 500 MHz to 18 GHz Rated at +20 dBm FMSW6221](#)

URL: <https://www.fairviewmicrowave.com/sma-sp3t-pin-diode-switch-18-ghz-20-dbm-fmsw6221-p.aspx>

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ALL DIMENSIONS ARE IN INCHES.
TOLERANCES:
X.XX ±0.010
X.XXX ±0.005

* THESE DIMENSIONS AND TOLERANCES
SUPERSEDE NOTE #1 ON TITLE BLOCK.

2 BIT TTL LOGIC TABLE		
E1	E2	FUNCTION
0	1	J1-J2 LOW LOSS
1	0	J1-J3 LOW LOSS

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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
Field Replaceable SMA SP3T PIN Diode Switch From
500 MHz to 18 GHz Rated at +20 dBm

DWG NO	FMSW6221		CAGE CODE	3FKR5	
CAD FILE	041916	SHEET	SCALE	N/A	SIZE A 2233