

# FMSW1108 DATA SHEET

# N Reflective SPDT GaN High Power PIN Diode Switch from 500 MHz to 6 GHz Rated at 100 Watts 100ns Speed with Heatsink

The FMSW1108 is a high power Reflective SPDT PIN Diode Switch that operates from 500 MHz to 6 GHz and incorporates an integrated heatsink to ensure optimum thermal dissipation for highly reliable operation. The module utilizes Gallium Nitride (GaN) and chip-and-wire technology in the manufacturing process that ensures state-of-the-art power performance with excellent power-to-volume ratio that's ideal for broadband high power applications. The 50 ohm reflective design has impressive RF input power handling capability for cold switching up to +50 dBm, and incorporates TTL compatible driver circuitry for accurate logic control. Typical performance includes 1.2 dB insertion loss, 45 dB isolation, 1.2:1 VSWR, and 100 nsec switching speed. Operational temperature range is -45°C to +85°C and the bias voltage requirement is +5Vdc. The rugged and compact package supports N female connectors and is designed to meet a series of environmental conditions including Altitude, Vibration, Humidity, and Shock.

## **Electrical Specifications**

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

Description	Min	Тур	Max	Units
Frequency Range	0.5		6	GHz
Impedance		50		Ohms
VSWR		1.2:1	1.6:1	
Insertion Loss		1.2	1.5	dB
IL Temp. Coefficient		0.003		dB/degC
Isolation	35	45		dB
Switching Time		100	250	ns
P0.1dB		50	dBm	
Input IP3		55		dBm
Input Power (CW)			100	Watts
DC Power Dissipation		0.5		
Watt				
Positive Operating Voltage	ge	5		Vdc
Current @ 5 Vdc		100		mA
Operating Temperature	-45		+85	deg C

#### **Performance by Frequency**

Description	F1	F2	F3	F4	F5	Units
Frequency Range	0.5 to 3	3 to 6				GHz
VSWR, Max	1.6:1	1.6:1				
VSWR, Typ	1.4:1	1.4:1				
Insertion Loss, Ma	x 1.3	1.5				dB
Insertion Loss, Ty	p 1.1	1.3				dB
Isolation, Min	40	35				dB
Isolation, Typ	48	38				dB

**Electrical Specification Notes:** 

Internal TTL Driver will become damaged if Negative Voltage is applied



#### Features:

- Reflective SPDT High Power PIN Diode Switch
- GaN Semiconductor Technology
- Reflective Design
- Frequency Range: 500 MHz to 18 GHz
- Insertion Loss: 1.2 dB typ
- Isolation: 45 dB typ
- VSWR: 1.2:1 typMaximum RF Input
- Power: +50 dBm
- Input IP3: 55 dBm typ
- Switching Speed: 100 nsec typ
- TTL Compatible Driver Circuitry
- 50 Ohm Design
- N Female Connectors
- Compact Package Design withstands up to 95% Relative Humidity
- -45°C to +85°C Operating Temperature

### **Applications:**

- Aerospace & Defense
- Microwvae Radio
- Military & Commercial Communication
- VSAT
- SATCOM
- Test & Measuurement
- · Wireless Infrastructure
- Fiber Optics

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\*Cold Switching: Before changing any TTL signal(s), the RF input power must be blanked or the switch could become 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**

 Length
 1.46 in [37.08 mm]

 Width
 1.26 in [32 mm]

 Height
 0.75 in [19.05 mm]

 Weight
 1.93 lbs [875.43 g]

 Design
 Reflective, SPDT

 RF Connector
 N Female

# **Environmental Specifications**

**Temperature** 

Operating Range -45 to +85 deg C Storage Range -55 to +125 deg C

Humidity
Shock
100% RH @ 35°C, 95% RH @ 40°C
20G for 11ms Half Sinewave, 3 axis both directions
25g RMS (15° 2KHz) endurance, 1 hr per axis
Altitude
30,000 ft. (Epoxy Sealed Controlled Environment)

**Compliance Certifications** (see product page for current document)

# **Plotted and Other Data**

Notes:

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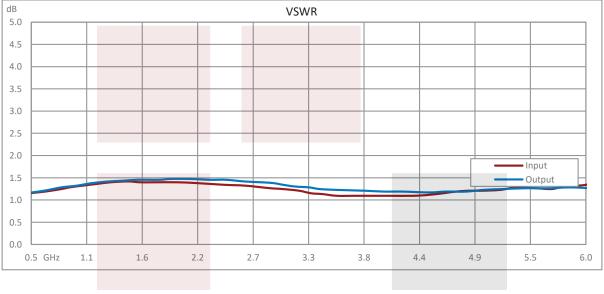
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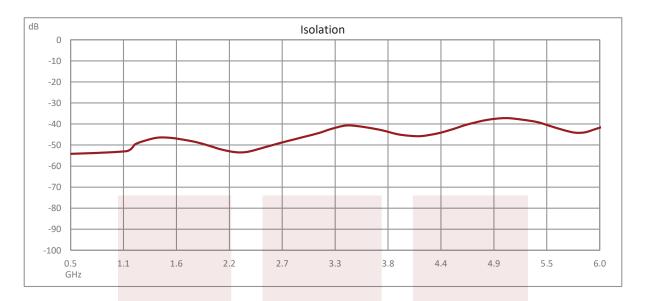
### **Typical Performance Data**











N Reflective SPDT GaN High Power PIN Diode Switch from 500 MHz to 6 GHz Rated at 100 Watts 100ns Speed with Heatsink 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 Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: N Reflective SPDT GaN High Power PIN Diode Switch from 500 MHz to 6 GHz Rated at 100 Watts 100ns Speed with Heatsink FMSW1108

URL: https://www.fairviewmicrowave.com/n-spdt-pin-diode-switch-6-ghz-100-watts-fmsw1108-p.aspx

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