



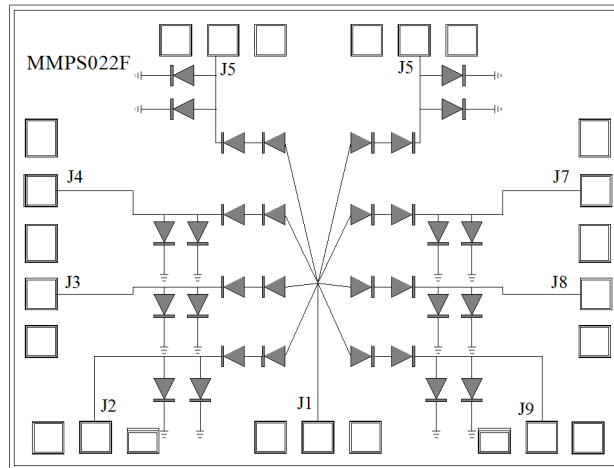
Features

- PIN Diode SP8T Reflective design
- Frequency:0.1-40GHz
- Isolation: 40dB Typical
- Insertion Loss: 1.3dB Typical
- Control Voltage:+5/-5V
- Switching Speed:10ns
- Die Size: 1.95 x 1.47 x 0.1 mm

Typical Applications

- Voltage control
- Fast Switching Speed
- Low Insertion Loss and High Isolation
- Customization available upon request

Functional Block Diagram



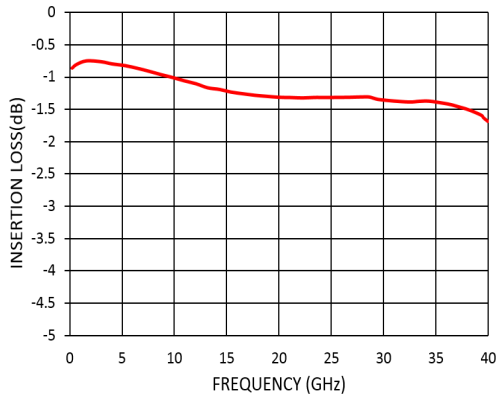
Electrical Specifications

TA = +25°C, VCTL=+5/-5V , ±10 mA Typical

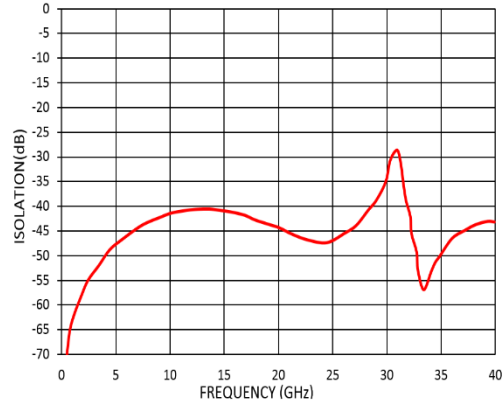
Parameters	Min.	Typ.	Max.	Units
Frequency	0.1		40	GHz
Insertion Loss		1.3	1.5	dB
Isolation	35	40		dB
Input Return Loss		-12		dB
Output Return Loss		-16		dB
P1dB - Output 1dB Compression		24		dBm
IIP3-Input Third Order Intercept		40		dBm
Switching Speed		10		ns



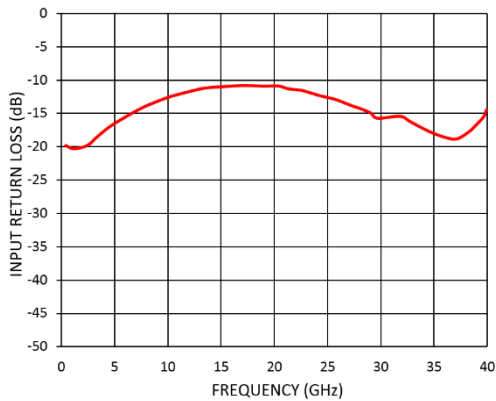
Insertion Loss vs. Frequency



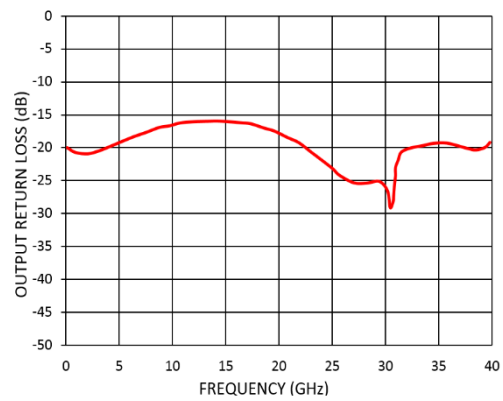
Isolation vs. Frequency



Input Return Loss vs. Frequency



Output Return Loss vs. Frequency





Absolute Maximum Ratings

Max Incident C.W. RF Power	+31dBm
DC Reverse Voltage	25V
Bias Current	±50 mA
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +150 °C

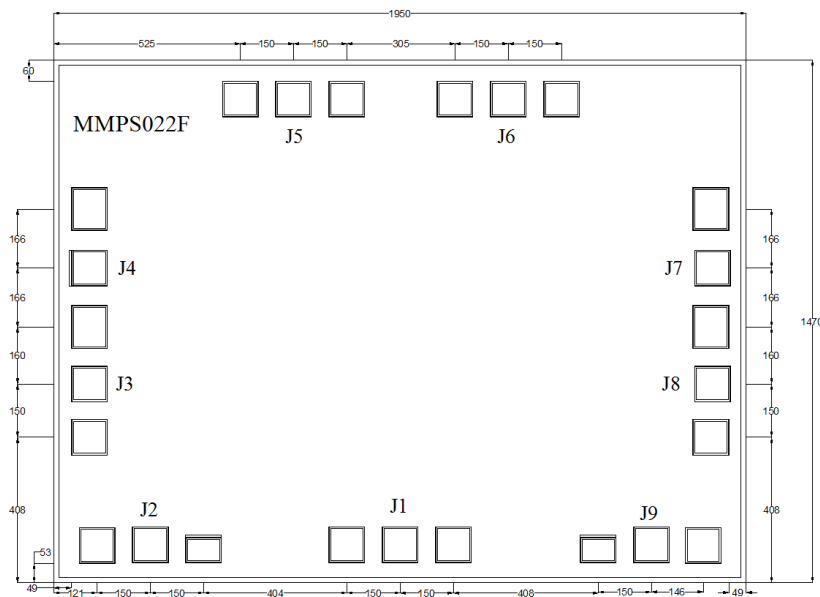


ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

MMPS022F

PIN Diode MMIC SP8T Reflective Switch 0.1-40GHz

Outline Drawing: All Dimensions in μm

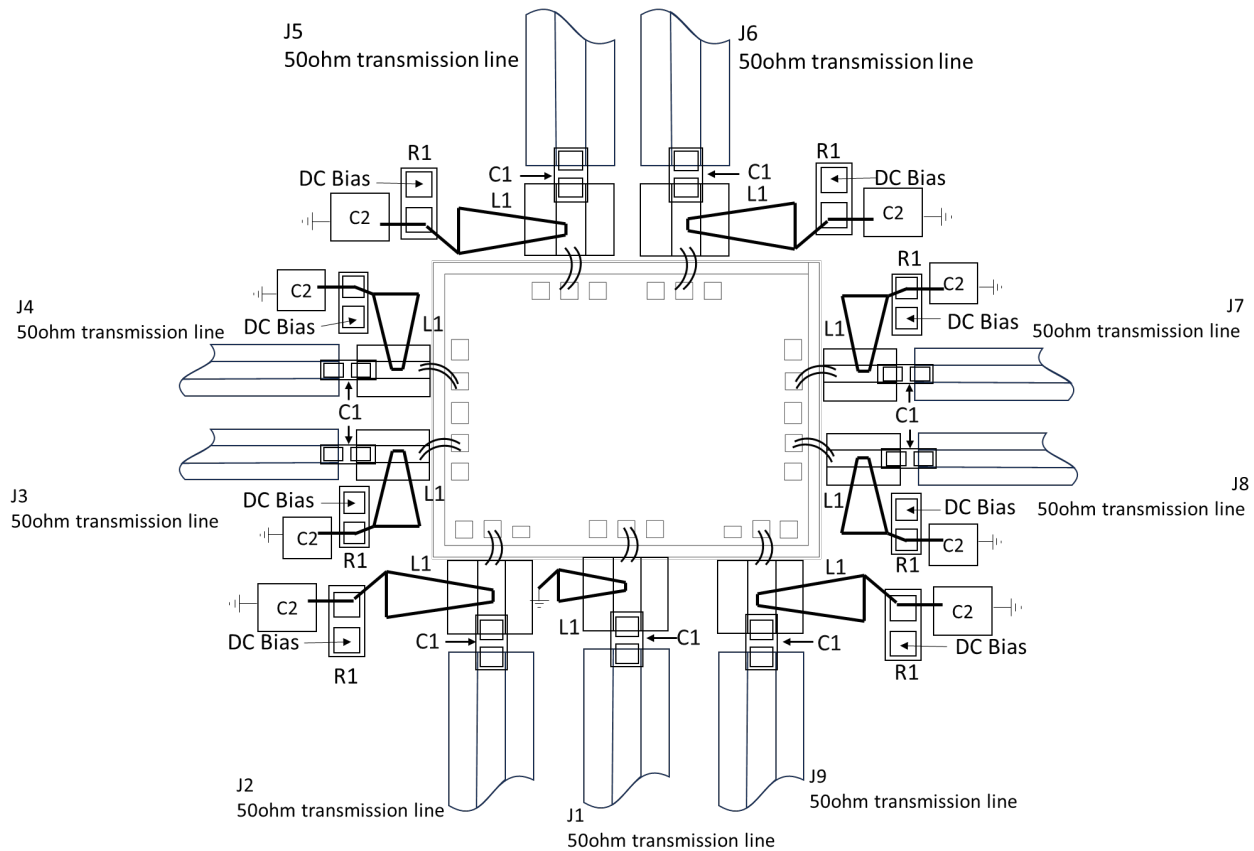


True Table

Control Voltage								State							
J2	J3	J4	J5	J6	J7	J8	J9	J2→J1	J3→J1	J4→J1	J5→J1	J6→J1	J7→J1	J8→J1	J9→J1
-5V	+5V	+5V	+5V	+5V	+5V	+5V	+5V	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
+5V	-5V	+5V	+5V	+5V	+5V	+5V	+5V	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
+5V	+5V	-5V	+5V	+5V	+5V	+5V	+5V	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
+5V	+5V	+5V	-5V	+5V	+5V	+5V	+5V	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
+5V	+5V	+5V	+5V	-5V	+5V	+5V	+5V	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
+5V	+5V	+5V	+5V	+5V	-5V	+5V	+5V	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
+5V	+5V	+5V	+5V	+5V	+5V	-5V	+5V	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
+5V	+5V	+5V	+5V	+5V	+5V	+5V	-5V	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON



Assembly Drawing



Notes:

1. Die thickness: 100 μ m
2. Typical bond pad is 100*100 μ m²
3. Bond pad metallization: Gold
4. Backside metallization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

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Item	Description
C1	0.1 μ F Capacitor Example: Passiveplus Part:0402BB104KW500
L1	0.84 μ H Inductance Example: Piconics Part: CC45T47K240G5
R1	200 Ω Resistor Example: YAGEO Part: RC0402FR-07200RL
C2	39pF Capacitor Example: Skyworks Part: SC10002430