

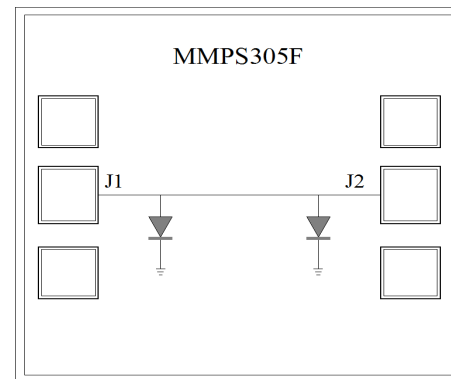
### Features

- PIN Diode SPST Reflective design
- Frequency: 0.05-50GHz
- Isolation: 45dB Typical
- Insertion Loss: 0.8dB Typical
- Control Voltage: +5/-5V
- Switching Speed: 10ns Typical
- Die Size: 0.750 x 0.725 x 0.1 mm

### Typical Applications

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

### Functional Block Diagram



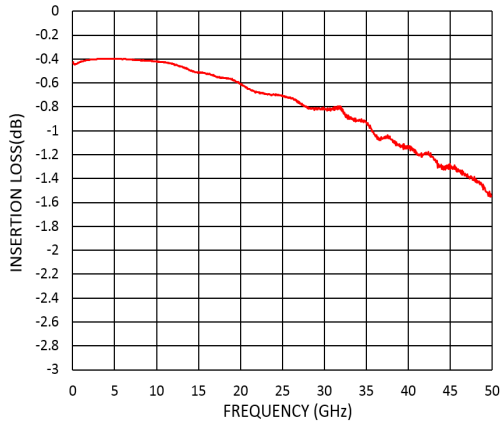
### Electrical Specifications

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

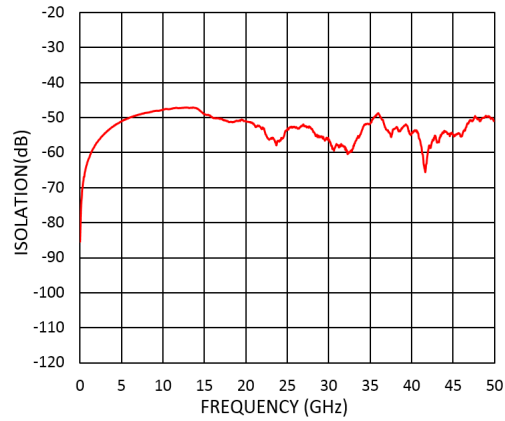
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	0.05		26.5	26.5		50	GHz
Insertion Loss		0.8	1.0		1.5	1.8	dB
Isolation		50			50		dB
Input Return Loss (ON State)		20			12		dB
Output Return Loss (OFF State)		20			12		dB
P1dB - Output 1dB Compression		30			28		dBm
IIP3-Input Third Order Intercept		43			40		dBm
Switching Speed		10			10		ns



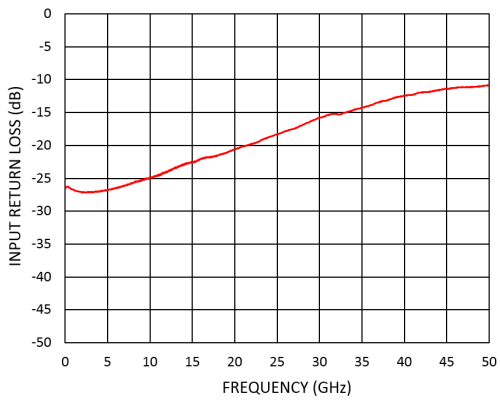
### Insertion Loss vs. Frequency



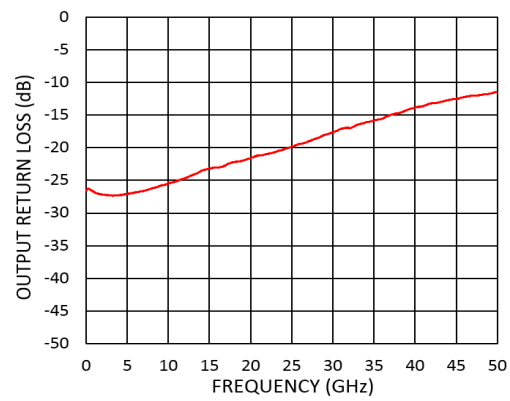
### Isolation vs. Frequency



### RL-On vs. Frequency



### RL-On vs. Frequency



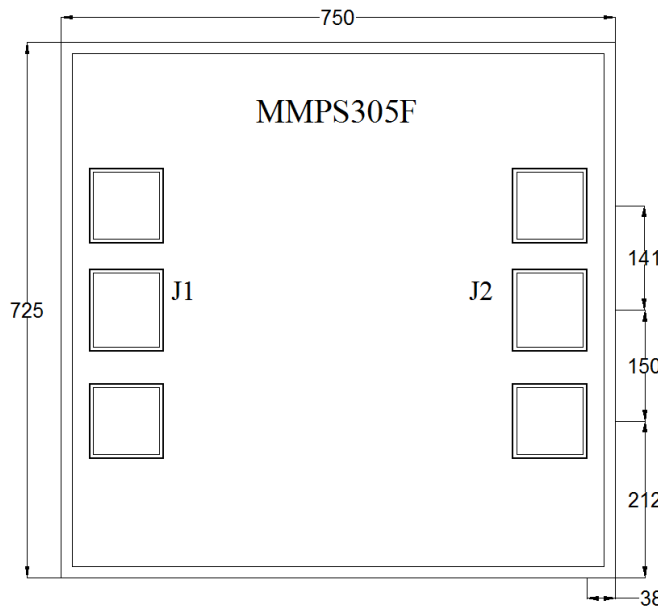
**Absolute Maximum Ratings**

Max Incident C.W. RF Power	+33dBm
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

**Outline Drawing:**  
All Dimensions in μm



**True Table**

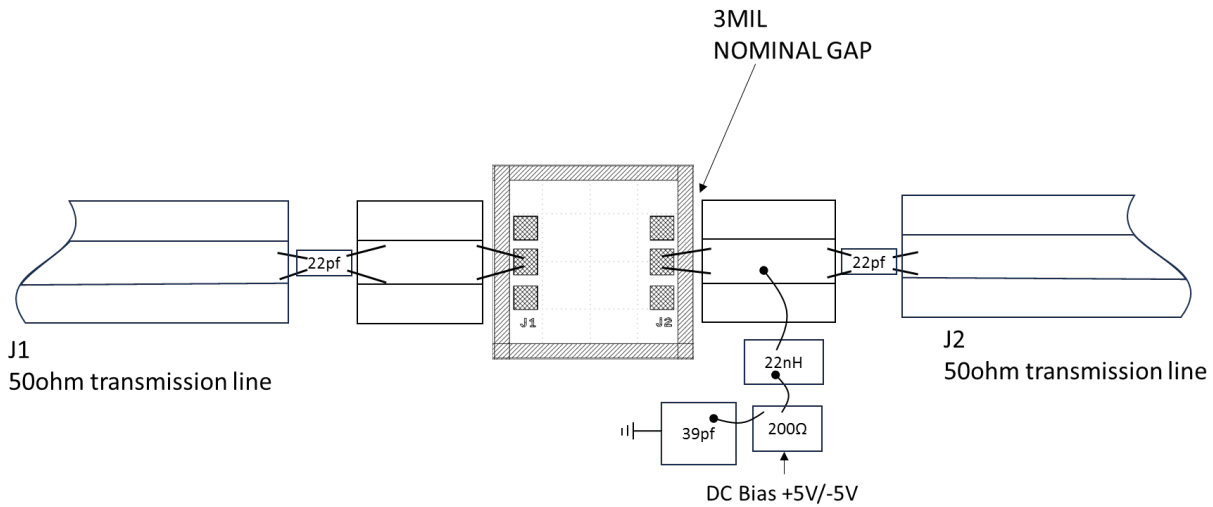
Control Voltage	State
J2	J2→J1
-5V	ON
+5V	OFF



### Assembly Drawing

MMPS305F

PIN Diode MMIC SPST Reflective Switch 0.05-26.5GHz



#### Notes:

1. Die thickness: 100µm
2. Typical bond pad is 100\*100 µm<sup>2</sup>
3. Bond pad metallization: Gold
4. Backside metallization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

Miller MMIC Inc. All rights reserved

Miller MMIC, Inc. holds exclusive rights to the information presented in its Data Sheet and any accompanying materials. As a premier supplier of cutting-edge RF solutions, Miller MMIC has made this information easily accessible to its clients.

Although Miller MMIC believes the information provided in its Data Sheet to be trustworthy, the company does not offer any guarantees as to its accuracy. Therefore, Miller MMIC bears no responsibility for the use of this information. It is worth mentioning that the information within the Data Sheet may be altered without prior notification.

Customers are encouraged to obtain and verify the most recent and pertinent information before placing any orders for Miller MMIC products. The information in the Data Sheet does not confer, either explicitly or implicitly, any rights or licenses with regards to patents or other forms of intellectual property to any third party.

The information provided in the Data Sheet, or its utilization, does not bestow any patent rights, licenses, or other forms of intellectual property rights to any individual or entity, whether in regards to the information itself or anything described by such information. Furthermore, Miller MMIC products are not intended for use as critical components in applications where failure could result in severe injury or death, such as medical or life-saving equipment, or life-sustaining applications, or in any situation where failure could cause serious personal injury or death.