

### S-BAND SPDT SWITCH

#### DESCRIPTION

The  $\mu$ PG107B is a S-Band SPDT (Single Pole Double Throw) switch which was developed for radar application. The device can operate from DC to 3.4 GHz. It is housed in a 8 pin ceramic flat package that is easy to install and realize high reliability.

#### FEATURES

- Wide operating frequency band : DC to 3.4 GHz
- Switching speed = 5 ns
- Hermetically sealed package assures high reliability

#### ORDERING INFORMATION

PART NUMBER	PACKAGE
$\mu$ PG107B	K-12, 8 PIN CERAMIC

#### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C)

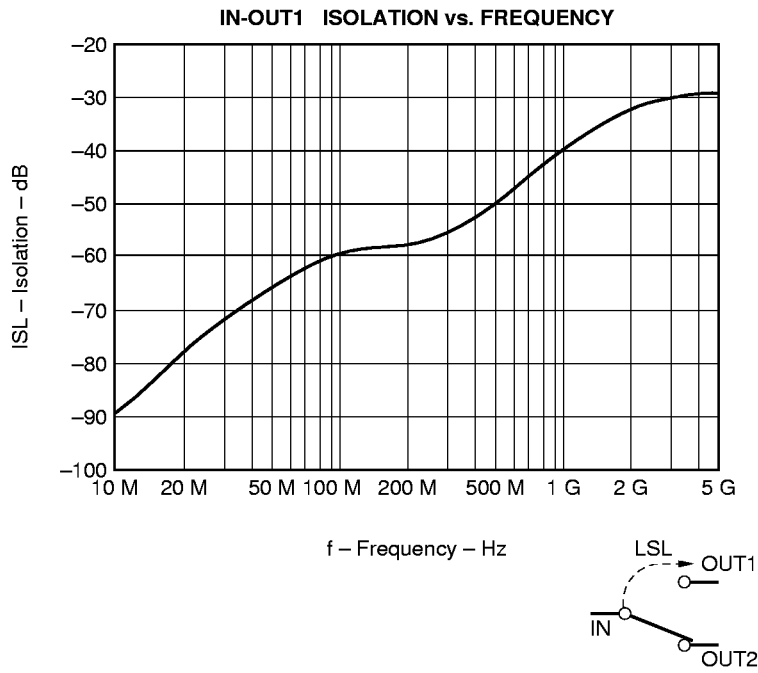
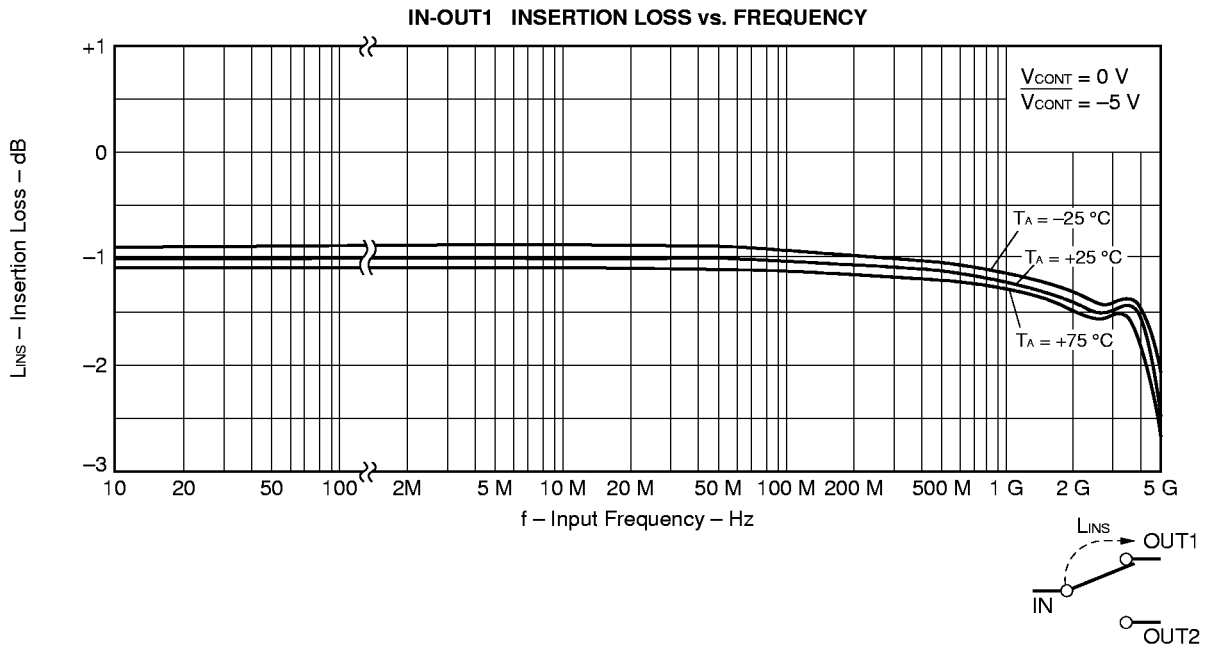
Control Voltage	V <sub>CONT</sub>	-6 to +0.6	V
Input Power	P <sub>in</sub>	+33	dBm
Total Power Dissipation	P <sub>tot</sub> *	1.5	W
Operating Case Temperature Range	T <sub>C</sub>	-65 to +125	°C
Storage Temperature	T <sub>stg</sub>	-65 to +175	°C

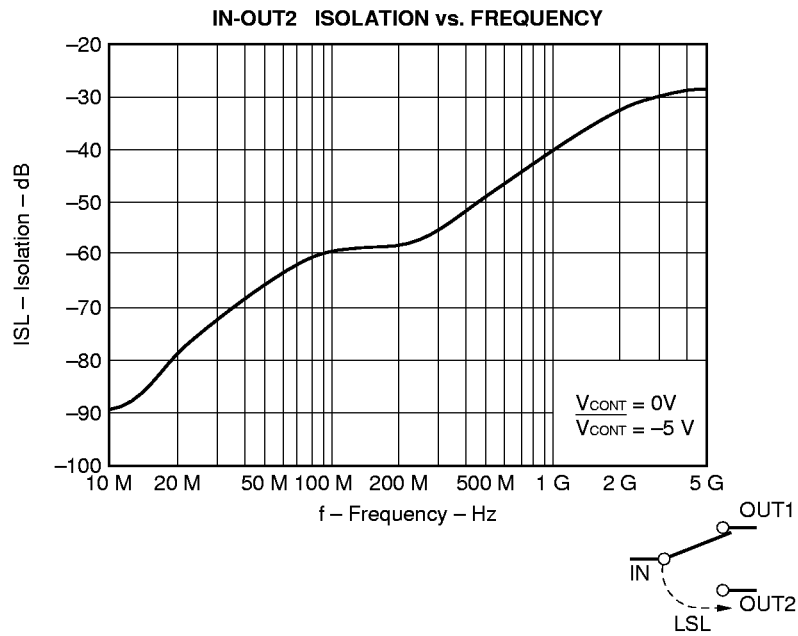
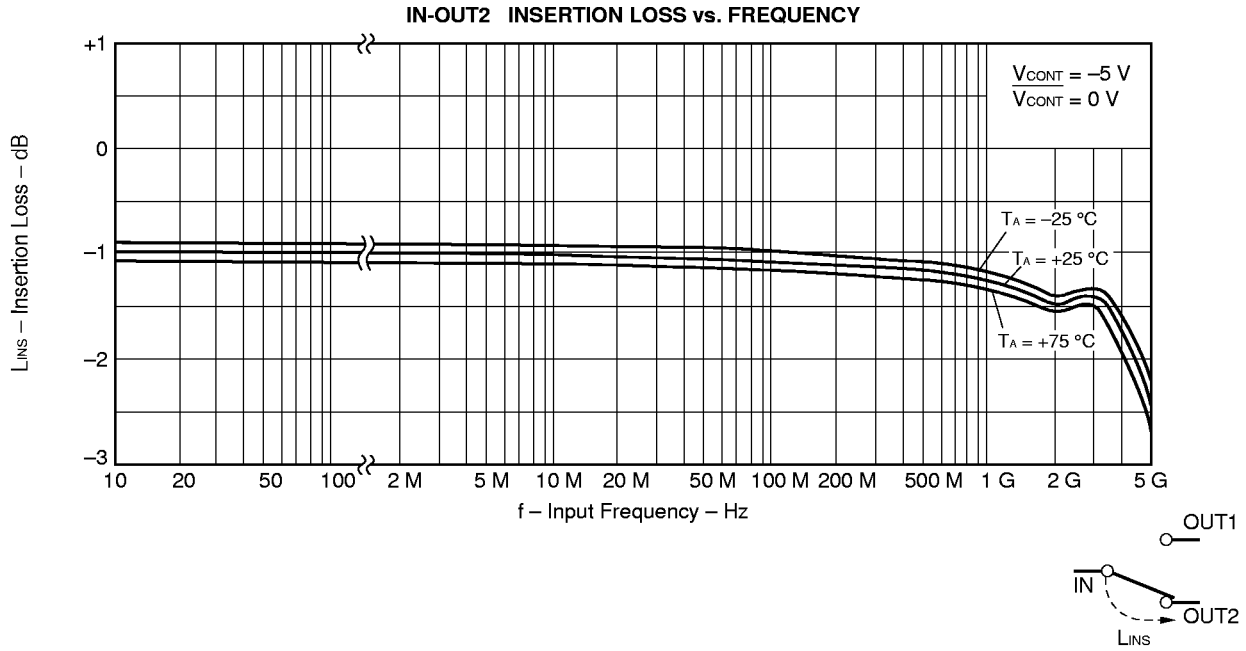
\* T<sub>C</sub> ≤ 125 °C

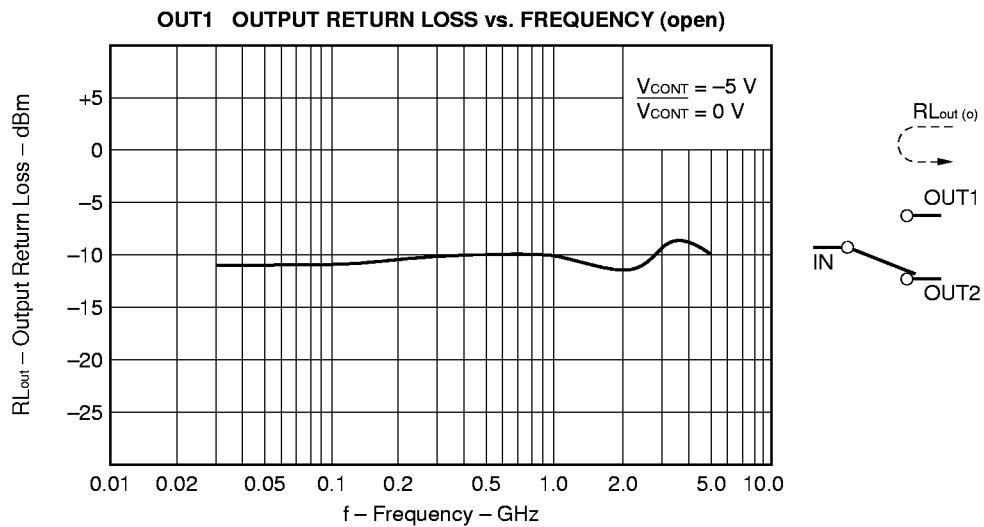
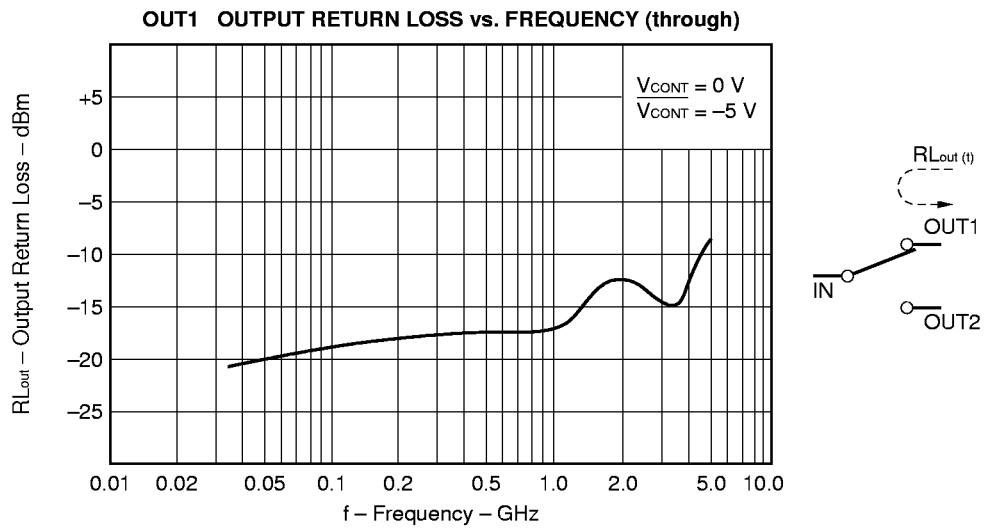
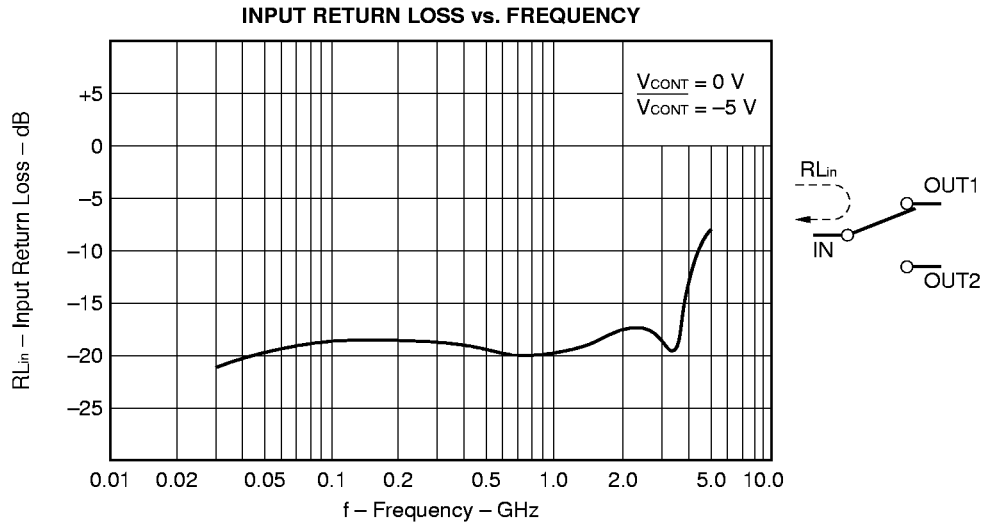
#### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)

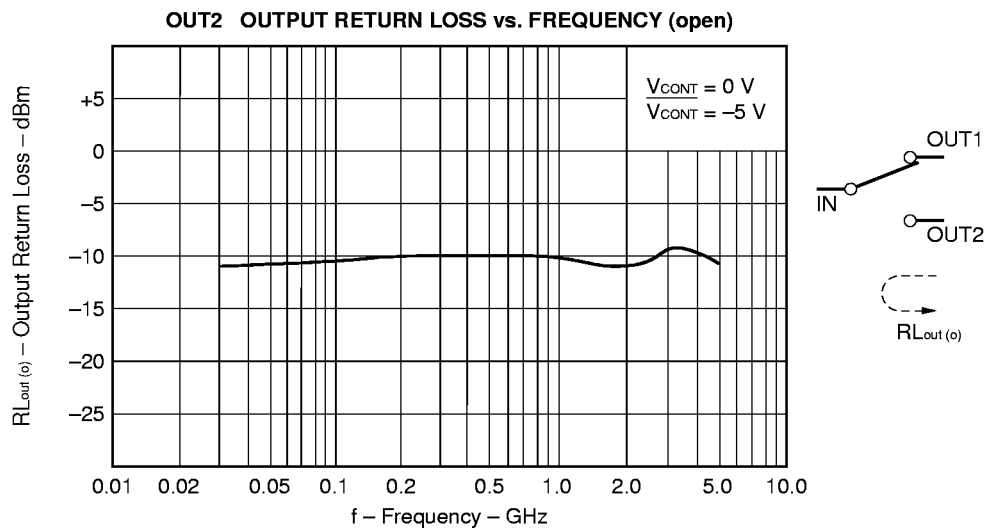
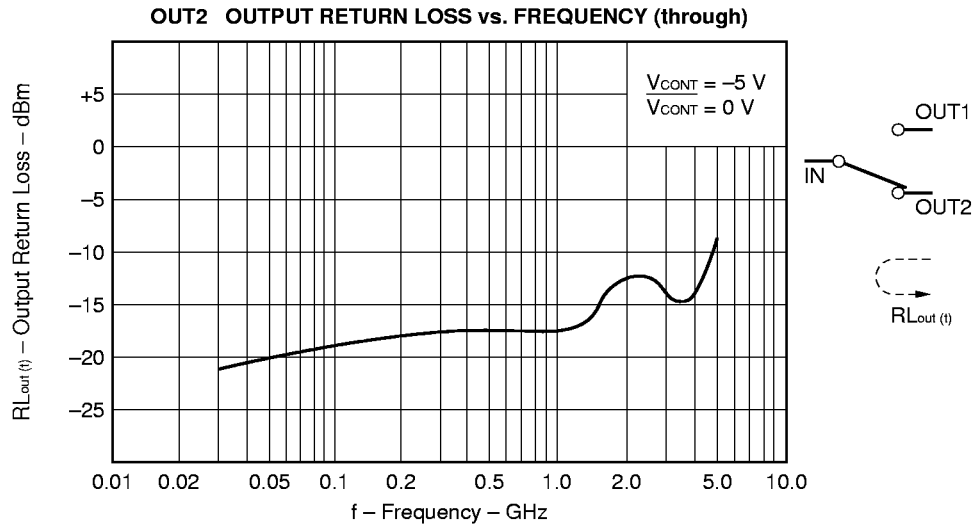
CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS	
						f = DC to 3.4 GHz	V <sub>CONT</sub> = 0 V V <sub>CONT</sub> = -5 V or V <sub>CONT</sub> = -5 V V <sub>CONT</sub> = 0 V
Insertion Loss	L <sub>INS</sub>		1.4	1.7	dB	f = DC to 3.4 GHz	V <sub>CONT</sub> = 0 V V <sub>CONT</sub> = -5 V or V <sub>CONT</sub> = -5 V V <sub>CONT</sub> = 0 V
Input Return Loss	RL <sub>in</sub>	14	17		dB		
Output Return Loss (through)	RL <sub>out(t)</sub>	10	13		dB		
Output Return Loss (open)	RL <sub>out(o)</sub>	8	9		dB		
Output Power at 1 dB Compression Point	P <sub>O(1 dB)</sub>		+25		dBm		
Switching Speed	t <sub>sw</sub>		5		ns		
Isolation	ISL	26	30		dB	f = 3.4 GHz	
		35	40		dB	f = 1.0 GHz	

TYPICAL CHARACTERISTICS

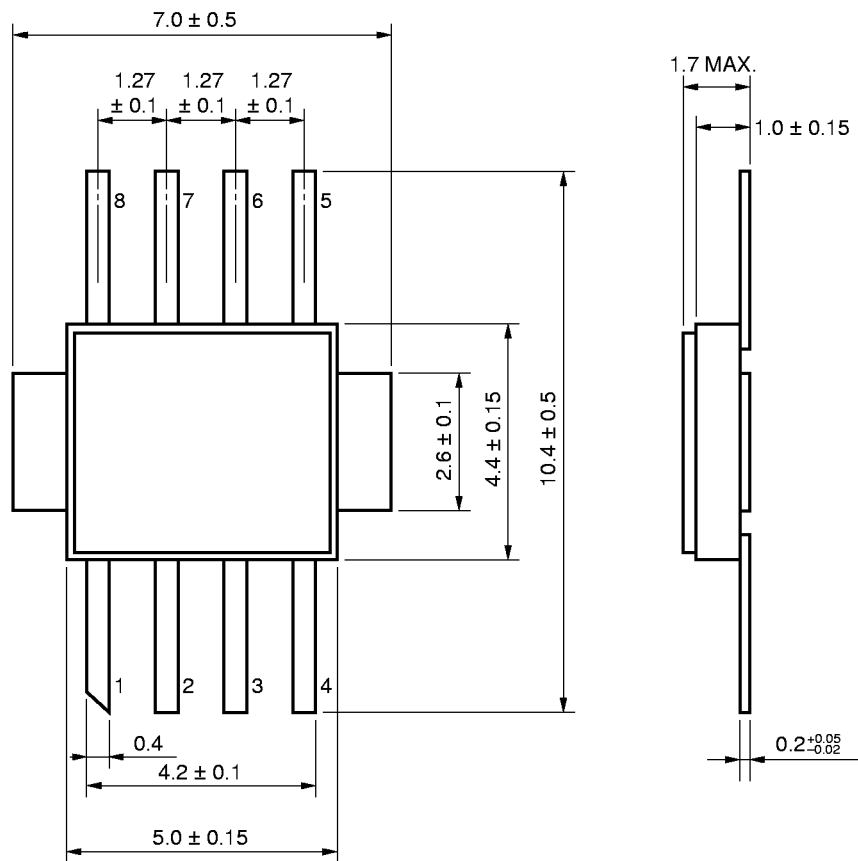








PACKAGE DIMENSIONS (Unit : mm)



- 1:  $V_{CONT}$
- 2: IN
- 3:  $NC^*$
- 4:  $V_{CONT}$
- 5: OUT2
- 6: GND
- 7: GND
- 8: OUT1
- FLANGE: GND
- $NC^*$ : Non Connection

**RECOMMENDED SOLDERING CONDITIONS**

The following conditions (see table below) must be met when soldering this product.

Please consult with our sales offices in case other soldering process is used, or in case soldering is done under different conditions.

**TYPES OF SURFACE MOUNT DEVICE**

For more details, refer to our document “SEMICONDUCTOR DEVICE MOUNTING TECHNOLOGY MANUAL” (C10535E).

Soldering process	Soldering conditions	Symbol
Partial heating method	Terminal temperature: 260 °C or below, Flow time: 10 seconds or below, Exposure limit*: None	

\* Exposure limit before soldering after dry-pack package is opened.  
Storage conditions: 25 °C and relative humidity at 65 % or less.

**Note** Do not apply more than a single process at once, except for “Partial heating method”.

**PRECAUTION** This IC must be handled with great care to prevent static discharge because its circuitry is composed of GaAs MES FET.

**Caution**

**The Great Care must be taken in dealing with the devices in this guide.  
The reason is that the material of the devices is GaAs (Gallium Arsenide), which is designated as harmful substance according to the law concerned.  
Keep the law concerned and so on, especially in case of removal.**