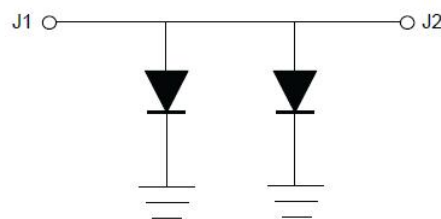


GaAs PIN Reflective Single-pole Single-throw Switch Chip, 0.1-40GHz

Performance characteristics

- Frequency range: 0.1-40GHz
- Insertion loss: 0.4dB typ.
- Isolation: 40dB typ.
- P-1dB: 32dBm@17GHz
- 50Ohm Input/output
- 100% on-film test
- Chip size: 1.4 x 0.66 x 0.1mm
- Silicon nitride passivation, scratch protection

Functional block diagram



Product introduction

GSW1 is a GaAs PIN reflective single-pole single-throw switch chip with 50 Ω matching input/output, frequency range covering 0.1 ~ 40GHz, and -5V/+5V control. With excellent switching characteristics and port standing wave over the entire operating frequency range, it is ideal for microwave hybrid integrated circuits and multi-chip modules as well as low-power systems. The switch chip adopts on-chip through hole metallization process to ensure good grounding, does not require additional grounding measures, and is simple and convenient to use. The back of the chip is metallized and suitable for eutectic sintering or conductive adhesive bonding processes.

Usage limit parameter¹

Maximum input voltage	25V
Maximum input power	+36dBm CW
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

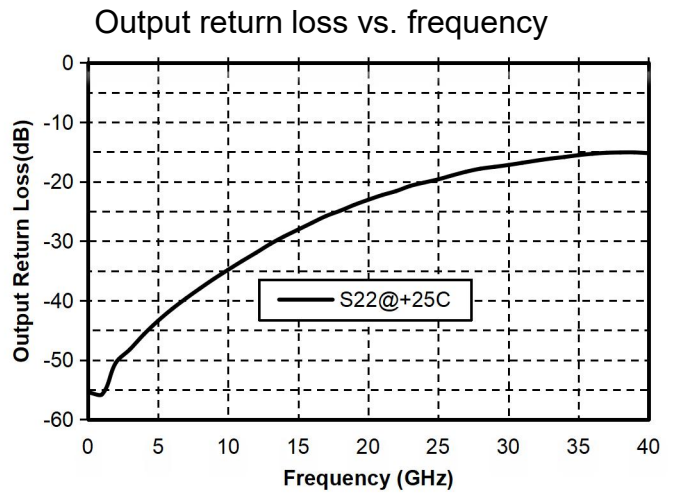
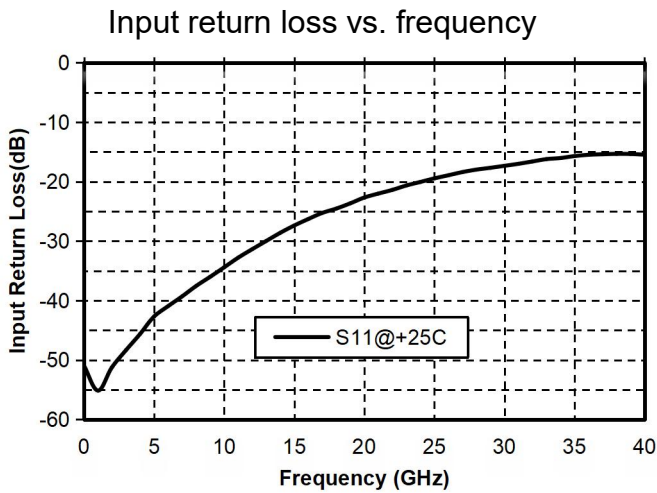
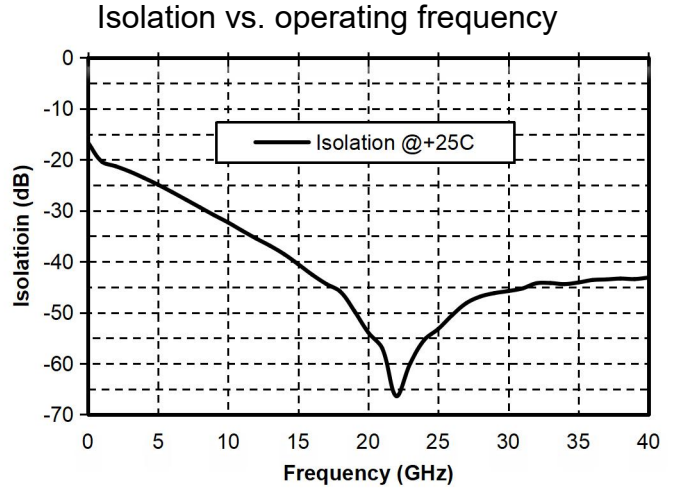
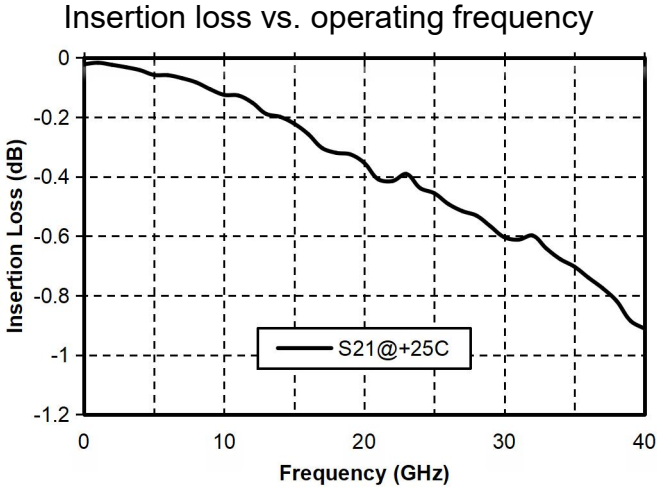
【1】 Exceeding any of these maximum limits may cause permanent damage

Electrical property parameter($T_A = +25^\circ\text{C}$)

Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	0.1-18			GHz
Insertion loss	-	0.15	0.3	dB
isolation	16	31	-	dB
Input return loss	24	37	-	dB
Output return loss	24	36	-	dB
Frequency range	18-40			GHz
Insertion loss	-	0.6	0.9	dB
isolation	43	48	-	dB
Input return loss	15	18	-	dB
Output return loss	15	18	-	dB
P-1dB@17GHz	-	32	-	dBm
Switching speed	-	10	-	ns

GaAs PIN Reflective Single-pole Single-throw Switch Chip, 0.1-40GHz

Main index test curve



Typical Driver Connections

CONTROL LEVEL (DC CURRENT)	RF OUTPUT STATE
IN(J1) or OUT(J2)	IN(J1)-OUT(J2)
-5V	Low Loss
+10mA	Isolation

GaAs PIN Reflective Single-pole Single-throw Switch Chip, 0.1-40GHz

External structure



Unit: micron

Close pressure point definition

Bonding point serial number	Functional symbol	Function description
1	J1 (IN)	At the RF signal end, a straight capacitor must be installed
2	J2 (OUT)	At the RF signal end, a straight capacitor must be installed
Chip bottom	GND	The bottom of the chip must be properly grounded to the RF and DC

Recommended circuit diagram

