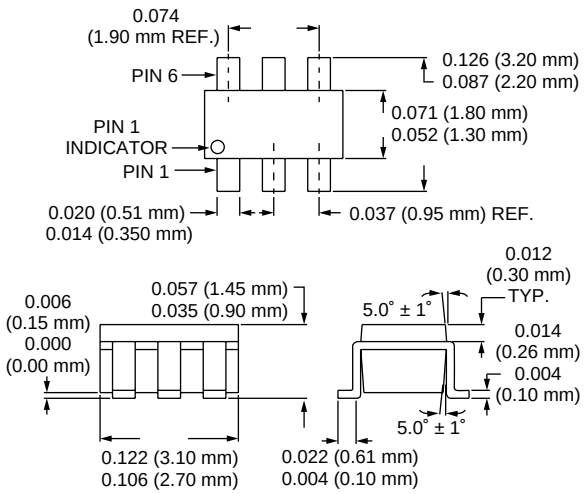
GaAs SPST High Isolation Switch
DC–2.5 GHz

AS130-73

Features

- Low Insertion Loss (0.75 dB @ 0.9 GHz)
- Low DC Power Consumption
- Ultra Miniature SOT-6 Lead Package
- Reflective Open, J_1 Port
- Non-Reflective, J_2 Port

SOT-6



Description

The AS130-73 is a high isolation GaAs MMIC FET IC SPST Switch in the SOT-6 low cost plastic package for commercial applications. Switch is matched on J_2 port and reflective on J_1 port when in isolation state.

Electrical Specifications at 25°C (0, -5 V)

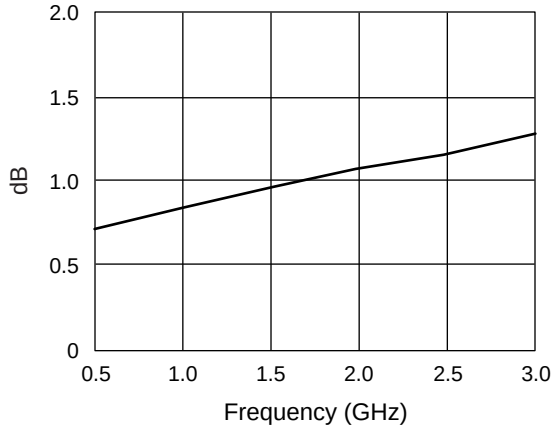
Parameter[1]	Frequency[2]	Min.	Typ.	Max.	Unit
Insertion Loss[3]	DC–0.5 GHz		0.75	1.0	dB
	DC–1.0 GHz		0.8	1.0	dB
	DC–2.0 GHz		0.9	1.1	dB
	DC–2.5 GHz		1.0	1.2	dB
Isolation	DC–0.5 GHz	46	53		dB
	DC–1.0 GHz	35	41		dB
	DC–2.0 GHz	23	28		dB
	DC–2.5 GHz	18	24		dB
VSWR[4]	DC–1.0 GHz		1.15:1	1.2:1	dB
	DC–2.5 GHz		1.3:1	1.5:1	dB

Operating Characteristics at 25°C (0, -5 V)

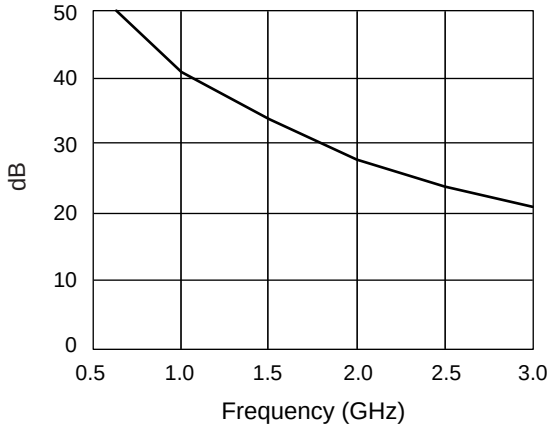
Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching Characteristics[5]	Rise, Fall (10/90% or 90/10% RF)			5		ns
	On, Off (50% CTL to 90/10% RF)			10		ns
	Video Feedthru			15		mV
Input Power for 1 dB Compression		0.5–2.0 GHz		+25		dBm
Intermodulation Intercept Point (IP3)	For Two-tone Input Power +13 dBm	0.5–2.0 GHz		+44		dBm
Control Voltages	V_{Low} = 0 to -0.2 V @ 20 µA Max. V_{High} = -5 V @ 50 µA to -8 V @ 200 µA Max.					

1. All measurements made in a 50 Ω system, unless otherwise specified.
2. DC = 300 kHz.
3. Insertion loss changes by 0.003 dB/°C.
4. Insertion loss state and isolation state @ J_2 port.
5. Video feedthru measured with 1 ns risetime pulse and 500 MHz bandwidth.

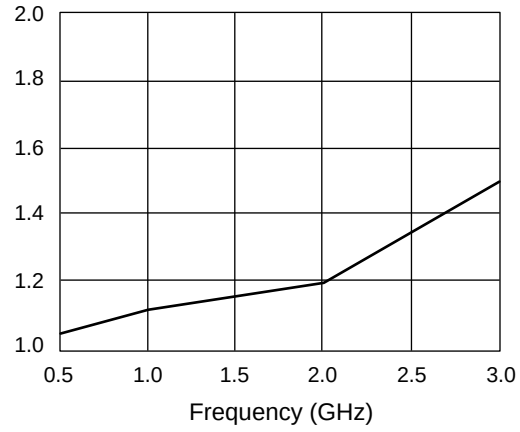
Typical Performance Data (0, -5 V)



Insertion Loss vs. Frequency



Isolation vs. Frequency



VSWR vs. Frequency

Absolute Maximum Ratings

Characteristic	Value
RF Input Power	2 W Max > 500 MHz, 0/-8 V Control
Control Voltage	+0.2 V, -8 V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Θ_{JC}	25°C/W

Truth Table

V_1	V_2	J_1–J_2
-5	0	Insertion Loss
0	-5	Isolation

Pin Out