



DATA SHEET

AS130-73, AS130-73LF: GaAs SPST High-Isolation Switch 300 kHz–2.5 GHz

Features

- Low insertion loss (0.75 dB @ 0.9 GHz)
- Low DC power consumption
- Ultraminiature SOT-6 package
- Reflective open, J₁ port
- Nonreflective, J₂ port
- Available lead (Pb)-free and RoHS-compliant MSL-1 @ 260 °C per JEDEC J-STD-020

Description

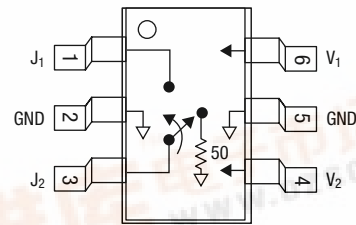
The AS130-73 is a high-isolation GaAs MMIC FET IC SPST switch in the SOT-6 low-cost plastic package for commercial applications. Switch is matched on J₂ port and reflective on J₁ port when in isolation state.

NEW

Skyworks offers lead (Pb)-free, RoHS (Restriction of Hazardous Substances)-compliant packaging.



Pin Out



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

Parameter ⁽¹⁾	Frequency	Min.	Typ.	Max.	Unit
Insertion loss ⁽²⁾	300 kHz–0.5 GHz		0.75	1	dB
	300 kHz–1.0 GHz		0.8	1	dB
	300 kHz–2.0 GHz		0.9	1.1	dB
	300 kHz–2.5 GHz		1	1.2	dB
Isolation	300 kHz–0.5 GHz	46	53		dB
	300 kHz–1.0 GHz	35	41		dB
	300 kHz–2.0 GHz	23	28		dB
	300 kHz–2.5 GHz	18	24		dB
VSWR ⁽³⁾	300 kHz–1.0 GHz		1.15:1	1.2:1	dB
	300 kHz–2.5 GHz		1.3:1	1.5:1	dB

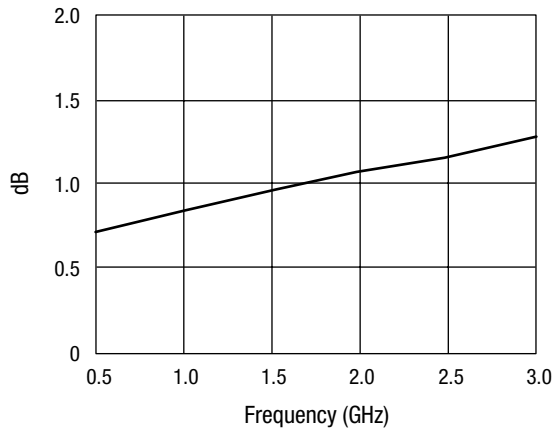


Operating Characteristics at 25 °C (0, -5 V)

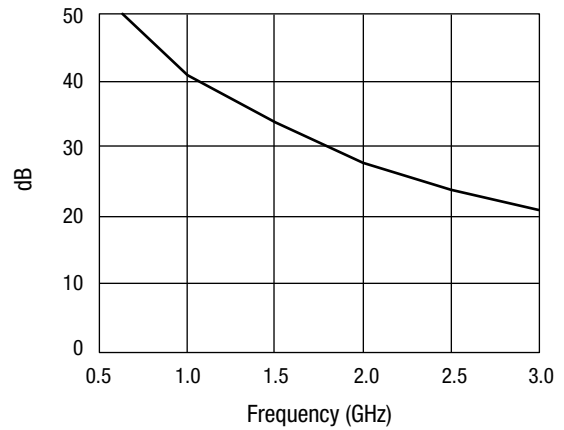
Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching characteristics						
Rise, fall	10/90% or 90/10% RF			5		ns
On, off	50% CTL to 90/10% RF			10		ns
Video feedthru	T _{RISE} = 1 ns, BW = 500 MHz			15		mV
Input Power for 1 dB compression		0.5–2 GHz		25		dBm
Intermodulation intercept point (IP3)	For two-tone input power 13 dBm	0.5–2 GHz		44		dBm
Thermal resistance				25		°C/W
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. Insertion loss changes by 0.003 dB/°C.
3. Insertion loss state and isolation state @ J₂ port.

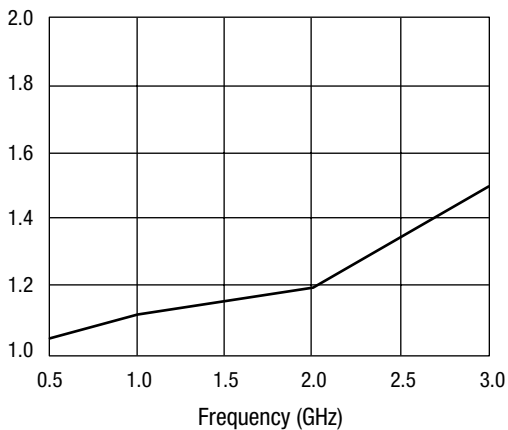
Typical Performance Data (0, -5 V)



Insertion Loss vs. Frequency



Isolation vs. Frequency



VSWR vs. Frequency

Truth Table

V ₁	V ₂	J ₁ -J ₂
-5	0	Insertion loss
0	-5	Isolation

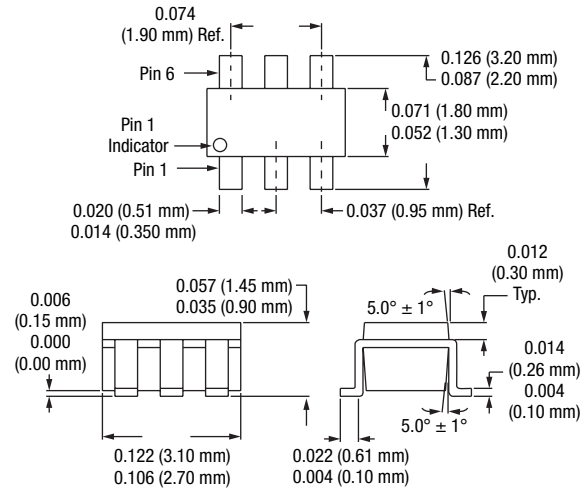
Absolute Maximum Ratings

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

Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum specifications. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

CAUTION: Although this device is designed to be as robust as possible, ESD (Electrostatic Discharge) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions must be employed at all times.

SOT-6



Recommended Solder Reflow Profiles

Refer to the [“Recommended Solder Reflow Profile”](#) Application Note.

Tape and Reel Information

Refer to the [“Discrete Devices and IC Switch/Attenuators Tape and Reel Package Orientation”](#) Application Note.

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