PHEMT GaAs IC SPDT Switch DC–2.5 GHz

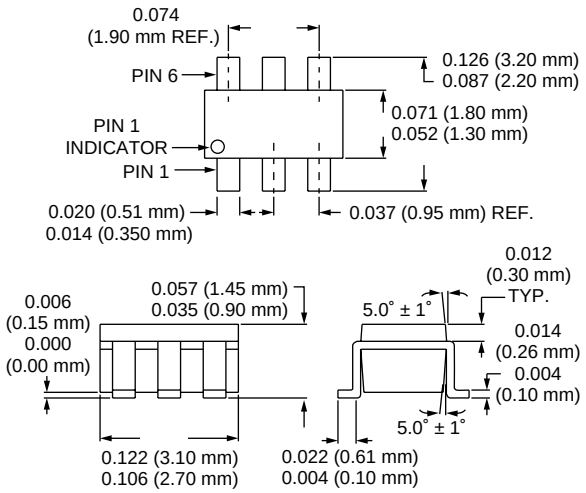
SKYWORKS

AS182-73

Features

- $P_{1\ dB}$ +30 dBm Typical @ +3 V
- IP3 43 dBm Typical @ +3 V
- Low Insertion Loss (0.3 dB @ 0.9 GHz)
- Low DC Power Consumption
- Ultra Miniature Low Cost SOT-6 Plastic Package

SOT-6



Description

The AS182-73 is an IC FET SPDT switch in a low cost SOT-6 plastic package. The AS182-73 features low insertion loss and positive voltage operation with very low DC power consumption. This switch is suitable for handset applications.

Electrical Specifications at 25°C (0, +3 V)

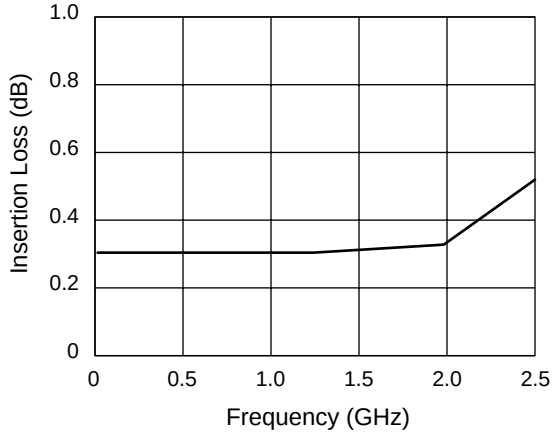
Parameter[1]	Frequency[2]	Min.	Typ.	Max.	Unit
Insertion Loss[3]	DC–1.0 GHz DC–2.0 GHz DC–2.5 GHz		0.30 0.30 0.55	0.4 0.4 0.6	dB dB dB
Isolation	DC–1.0 GHz DC–2.0 GHz DC–2.5 GHz	18 12 11	20 14 13		dB dB dB
VSWR[4]	DC–2.5 GHz		1.2:1	1.6:1	

Operating Characteristics at 25°C (0, +3 V)

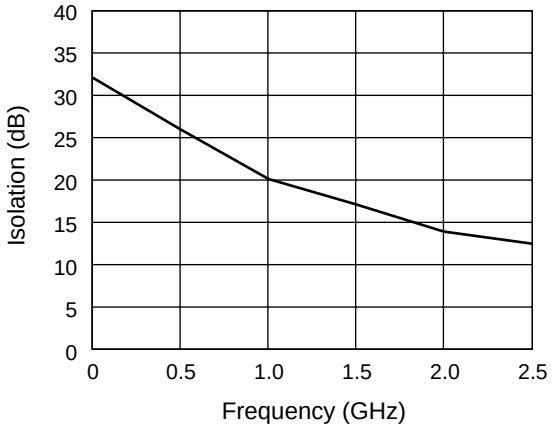
Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching Characteristics[5]	Rise, Fall (10/90% or 90/10% RF) On, Off (50% CTL to 90/10% RF) Video Feedthru			10 20 25		ns ns mV
Input Power for 1 dB Compression	0/+3 V 0/+5 V	0.5–2.5 GHz 0.5–2.5 GHz		+30 +34		dBm dBm
Intermodulation Intercept Point (IP3)	For Two-tone Input Power +15 dBm 0/+3 V 0/+5 V	 0.5–2.5 GHz 0.5–2.5 GHz		 +43 +50		 dBm dBm
Control Voltages	V_{Low} = 0 to 0.2 V @ 20 µA Max. V_{High} = +3 V @ 100 µA Max. to +5 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.
5. Video feedthru measured with 1 ns risetime pulse and 500 MHz bandwidth.

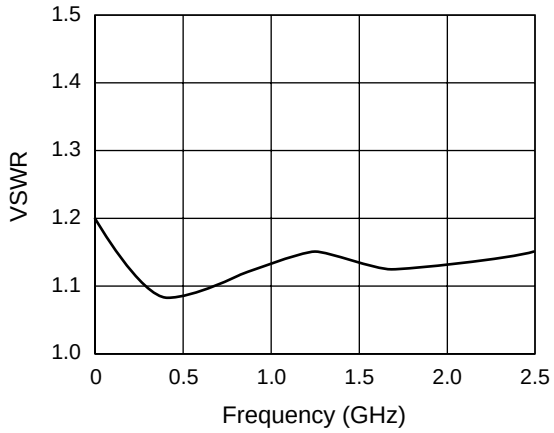
Typical Performance Data (0, +3 V)



Insertion Loss vs. Frequency



Isolation vs. Frequency



VSWR vs. Frequency

Absolute Maximum Ratings

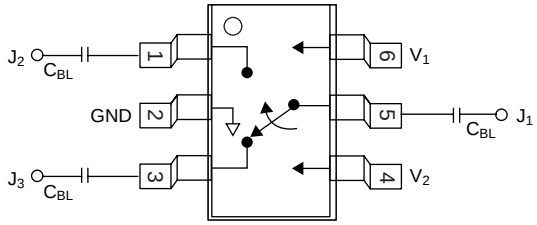
Characteristic	Value
RF Input Power	6 W > 500 MHz 0/+7 V Control
Control Voltage	-0.2 V, +8 V
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Θ_{JC}	25°C/W

Truth Table

V_1	V_2	J_1–J_2	J_1–J_3
0	V_{High}	Isolation	Insertion Loss
V_{High}	0	Insertion Loss	Isolation

V_{High} = +3 to +5 V.

Pin Out



DC blocking capacitors (C_{BL}) must be supplied externally for positive voltage operation.
C_{BL} = 100 pF for operation >500 MHz.