

PHEMT GaAs IC High Power 4-CTL DPDT Switch DC–6 GHz



AS236-321

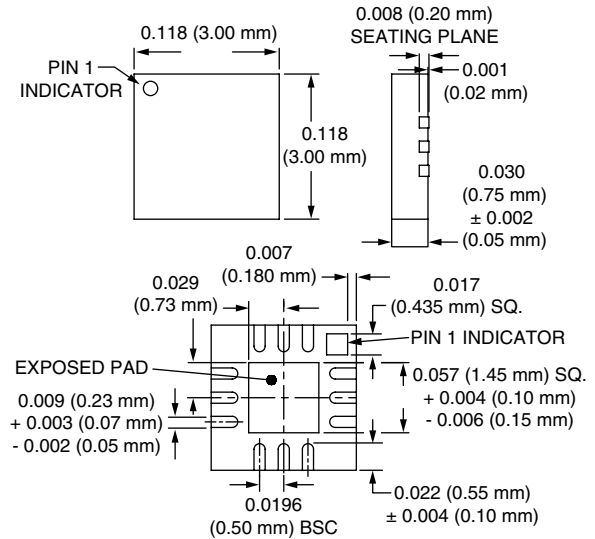
Features

- Application 802.11 a (5.2–5.8 GHz) and 802.11b (2.4 GHz) Diversity
- Operating Frequency DC–6GHz
- Positive Low Voltage Control (0/3 V Operation)
- Low Insertion Loss Less Than 1.2 dB DC–6 GHz
- High Linearity 53 dBm IIP3
- Miniature QFN-12 Plastic Package
- PHEMT Process

Description

Skyworks' AS236-321 is a broadband DPDT switch designed to combine T/R and antenna diversity switching functions on a single IC. The device is designed to handle high power and maintain high linearity at low control voltages. This low cost switch is ideal for Wi-Fi systems and is capable of covering both the 2.4 GHz and 5 GHz bands.

QFN-12



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

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Insertion Loss	Between Any Pair of Ports	2.400–2.500 GHz		0.85		dB
		5.150–5.350 GHz		0.90		dB
		5.750–5.875 GHz		1.10		dB
Return Loss	Any Port Between Any Pair of Ports	2.400–2.500 GHz		18		dB
		5.150–5.350 GHz		21		dB
		5.750–5.875 GHz		22		dB
Isolation	A1–T _X , A2–R _X , A2–T _X , or A1–R _X Between Any Pair of the Other Ports	2.400–2.500 GHz		25		dB
		5.150–5.350 GHz		20		dB
		5.750–5.875 GHz		19		dB
	A1–A2 or T _X –R _X Between Any Pair of the Other Ports	2.400–2.500 GHz		22		dB
		5.150–5.350 GHz	15			dB
		5.750–5.875 GHz	15			dB

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

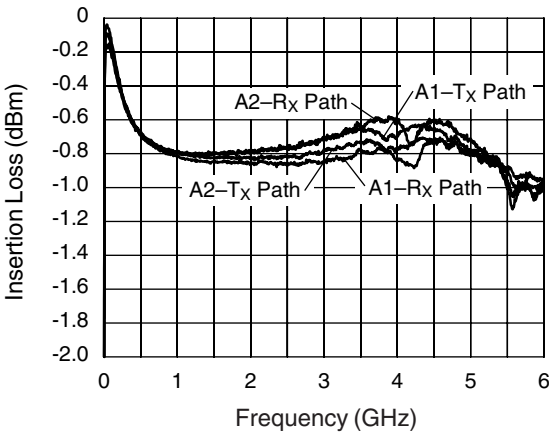
Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching Characteristics	Rise, Fall (10/90% or 90/10% RF) On, Off (50% CTL to 90/10% RF) Video Feedthru			20 50 50		ns ns mV
IIP3	0/+3 V	2.4–5.875 GHz	51	53		dBm
P ₁ dB	0/+3 V	2.4–5.875 GHz	34			dBm
Gate Leakage Current				10	30	μA
Control Voltages			2.5	3.0	5.0	V

Truth Table

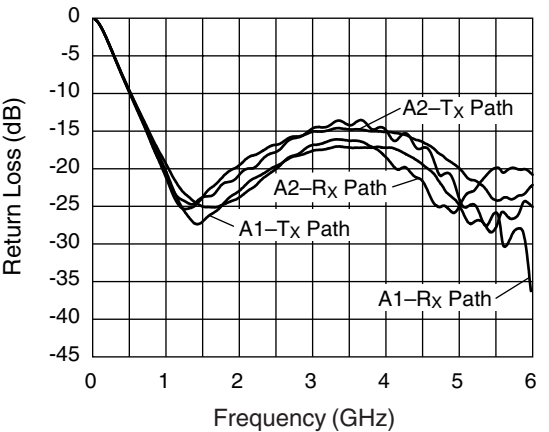
V ₁	V ₂	V ₃	V ₄	A1–T _x	A2–R _x	A2–T _x	A1–R _x	A1–A2	T _x –R _x
1	0	0	0	IL	ISO*	ISO	ISO	ISO	ISO
0	1	0	0	ISO*	IL	ISO	ISO	ISO	ISO
0	0	1	0	ISO	ISO	IL	ISO*	ISO	ISO
0	0	0	1	ISO	ISO	ISO*	IL	ISO	ISO
0	0	1	1	ISO	ISO	IL	IL	ISO	ISO
1	1	0	0	IL	IL	ISO	ISO	ISO	ISO

ISO*: Not a typical isolation state.

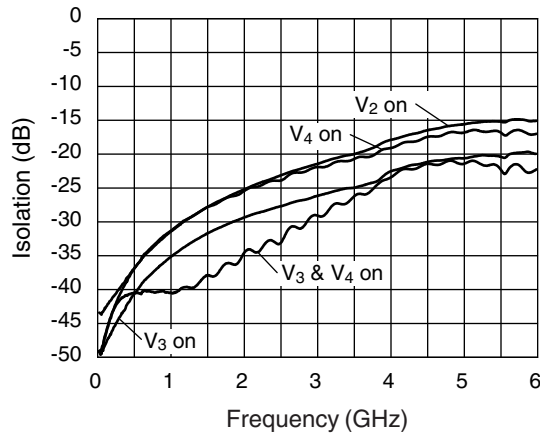
Typical Performance Data



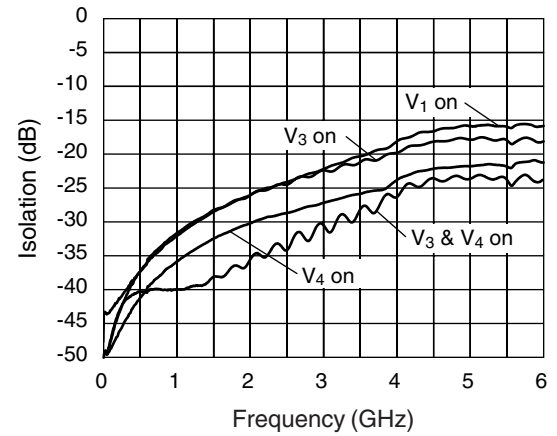
Corrected Insertion Loss



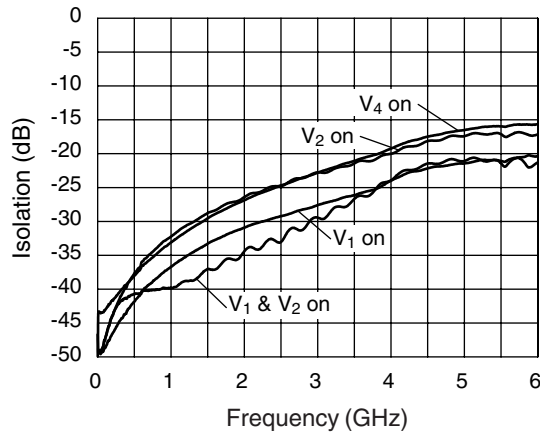
Return Loss vs. Frequency



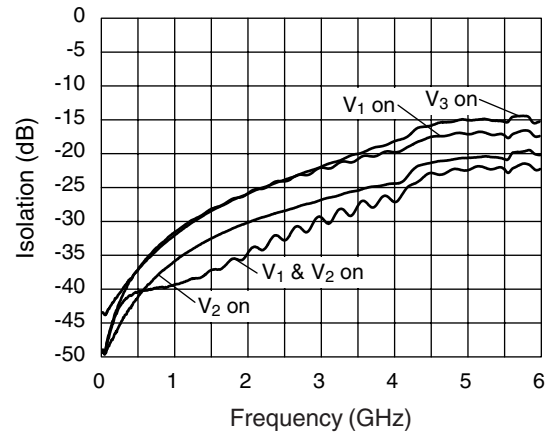
A1-T_x Path Isolation



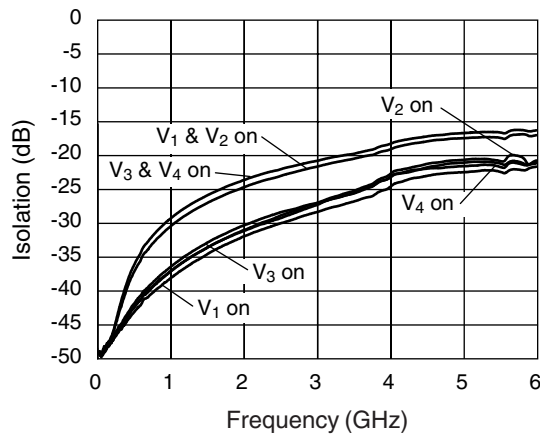
A2-R_x Path Isolation



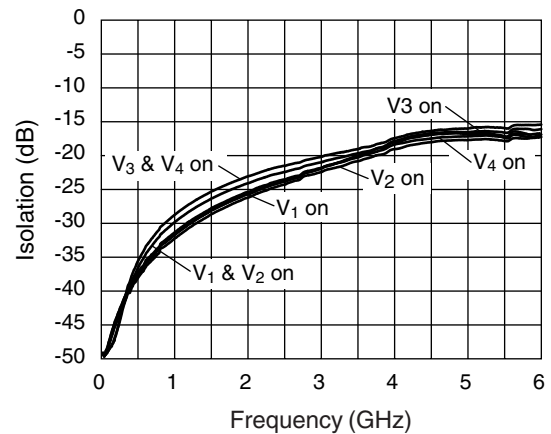
A2-T_x Path Isolation



A1-R_x Path Isolation



A1-A2 Isolation



T_x-R_x Isolation

Pin Out (Top View)

