

PRELIMINARY DATA SHEET

SKY13247-321: PHEMT GaAs IC Ultra-Linear 0.1–2 GHz SP3T Switch

Applications

- CDMA handsets
- UMTS handsets

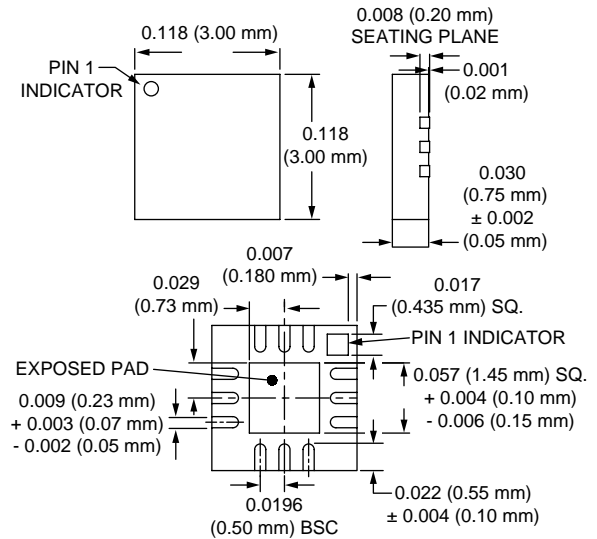
Features

- Ultra-linear cross modulation products (-110 dBm @ 3 V Typ.)
- Low insertion loss (0.5 dB typ. @ 1 GHz)
- High isolation (27 dB typ. @ 1 and 2 GHz)
- Miniature QFN-12 plastic package
- PHEMT process

Description

The SKY13247-321 is a PHEMT GaAs IC SP3T antenna switch operating in the 900 and 1900 MHz frequency bands. Switching between the 3 RF ports is accomplished with 3 control inputs. The part has excellent cross-modulation performance to meet the requirements of CDMA applications.

QFN-12



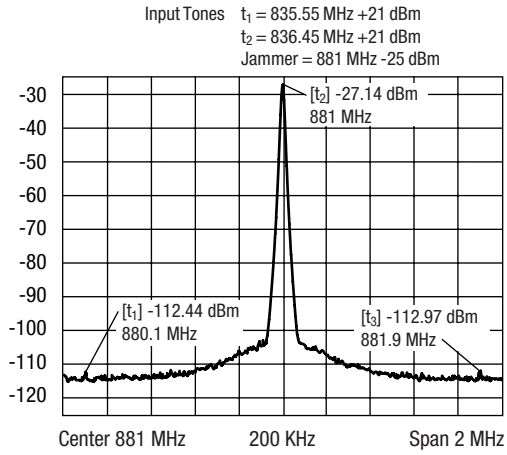
Electrical Specifications at 25°C (0, +3 V)

Parameter	Frequency	Min.	Typ.	Max.	Unit	
Insertion loss	Ant-J ₁ , J ₂ , J ₃	0.1–0.5 GHz		0.40	0.60	dB
		0.5–1.0 GHz		0.45	0.60	dB
		1.0–2.0 GHz		0.75	0.85	dB
Isolation	Ant-J ₁ , J ₂ , J ₃	0.1–0.5 GHz	25	30		dB
		0.5–1.0 GHz	24	26		dB
		1.0–2.0 GHz	24	27		dB
Return loss	Ant-J ₁ , J ₂ , J ₃	0.1–2.0 GHz		15		dB

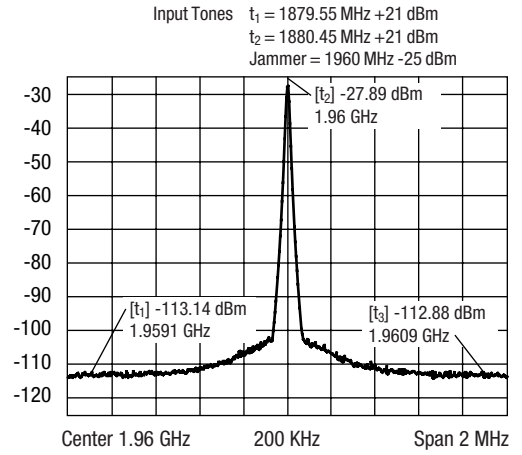
Operating Characteristics at 25°C (0, +3 V)

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Cross modulation	t ₁ = 835.55 MHz +21 dBm t ₂ = 836.45 MHz +21 dBm Jammer = 881 MHz -25 dBm			-110		dBm
Cross modulation	t ₁ = 1879.55 MHz +21 dBm t ₂ = 1880.45 MHz +21 dBm Jammer = 1960 MHz -25 dBm			-110		dBm
Control voltages	V _{LOW}		0	0	0.2	V
	V _{HIGH}		2.5	3.0	5.0	V
Control currents	V _{LOW}			1.0	30	μA
	V _{HIGH}			5.0	30	μA

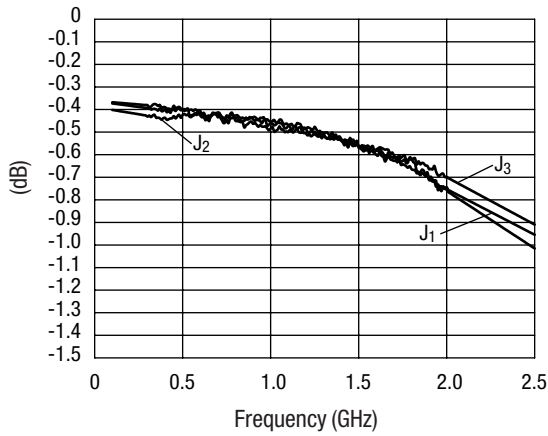
Typical Performance Data



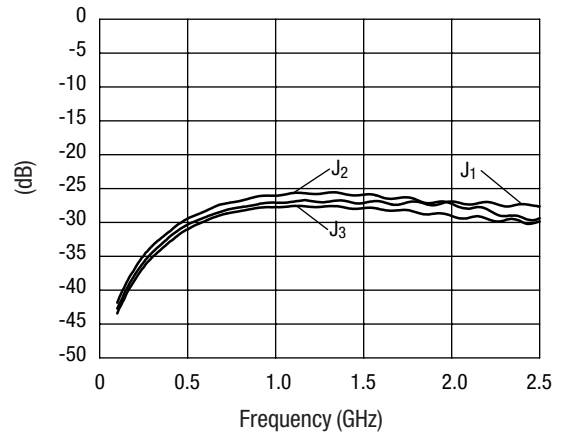
Cross-Modulation Cellular Band



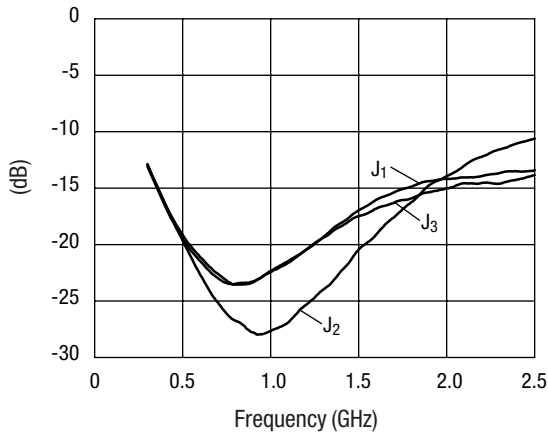
Cross-Modulation PCS Band



Typical Insertion Loss



Typical Isolation



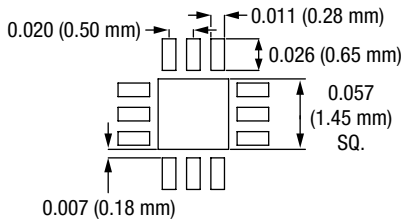
Typical Return Loss

Truth Table

V ₁	V ₂	V ₃	Ant-J ₁	Ant-J ₂	Ant-J ₃
V _{HIGH}	V _{LOW}	V _{LOW}	Ins. Loss	Isolation	Isolation
V _{LOW}	V _{HIGH}	V _{LOW}	Isolation	Ins. Loss	Isolation
V _{LOW}	V _{LOW}	V _{HIGH}	Isolation	Isolation	Ins. Loss

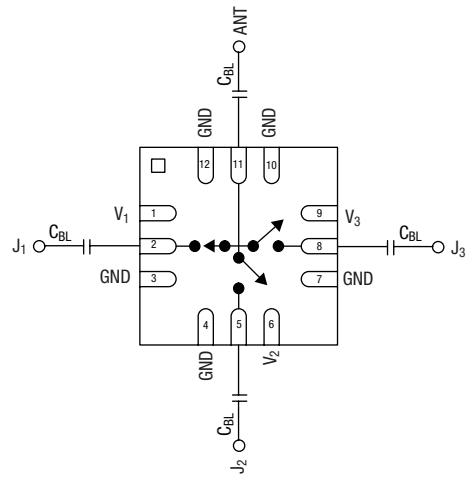
V_{LOW} = 0 V.
V_{HIGH} = 2.5–5 V.

**Suggested Mount Land Pattern
3 x 3 QFN 12-Lead (-321)**



Dimensions in inches (mm).

Pin Out (Top View)



DC blocking capacitors (C_{BL}) must be supplied externally.
C_{BL} = 39 pF for operating frequency >500 MHz.
Exposed paddle on bottom of package must be grounded.

Cross-Modulation Test Setup

