

PRELIMINARY DATA SHEET

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

Applications

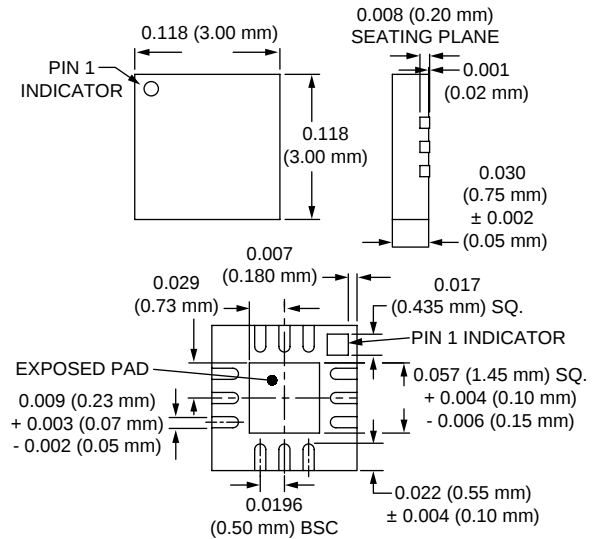
- CDMA handsets
- UMTS handsets

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.

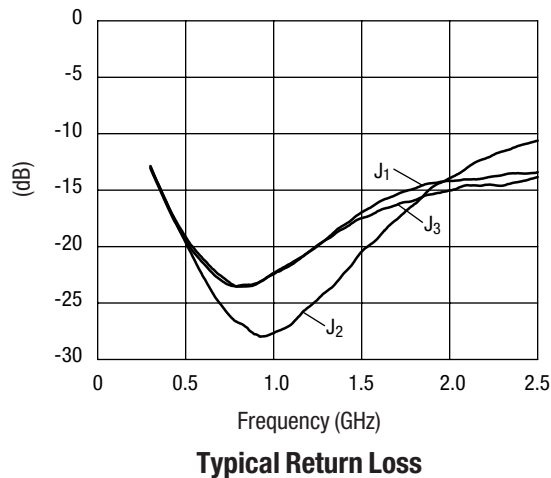
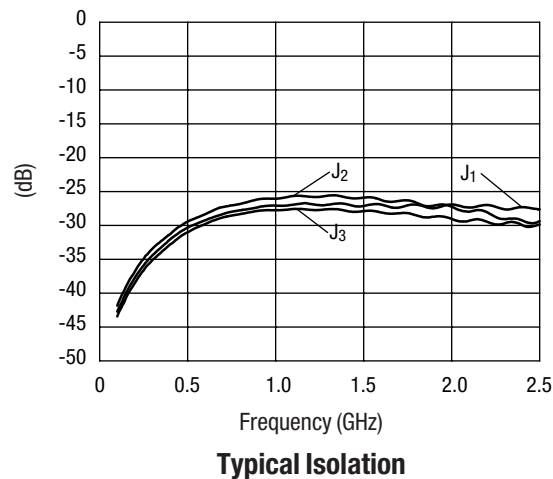
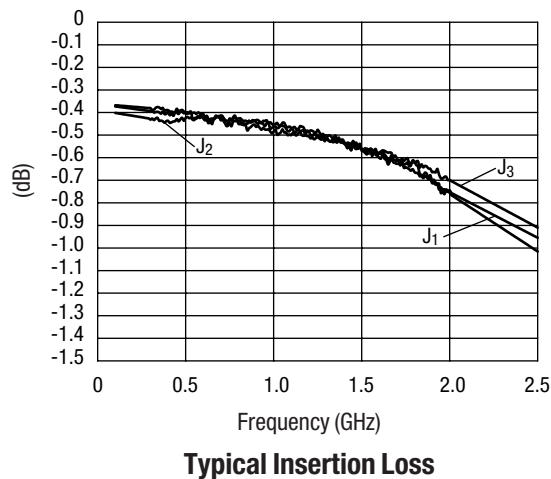
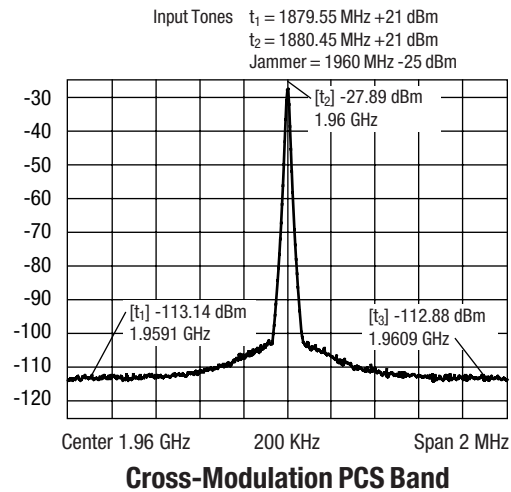
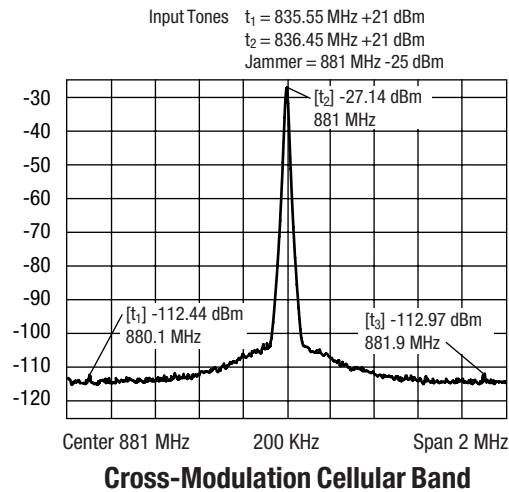
QFN-12

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

Parameter	Frequency	Min.	Typ.	Max.	Unit
Insertion loss	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	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	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

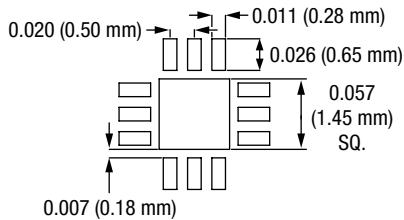


Truth Table

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

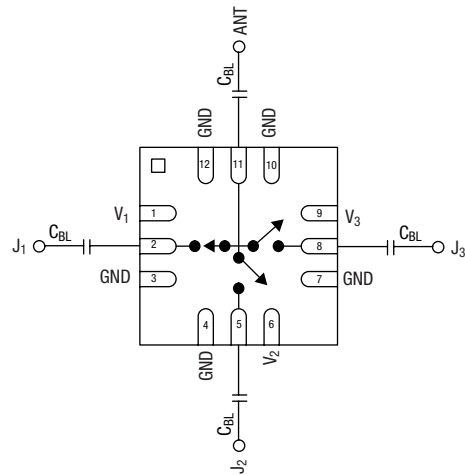
V_{LOW} = 0 V.
V_{HIGH} = 2.5–5 V.

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

