PRELIMINARY DATA SHEET

SKY13264-340LF: 4 x 2 Switch Matrix 250 MHz–2.15 GHz

Applications

- DBS switching applications, cable modems, cable TV

Features

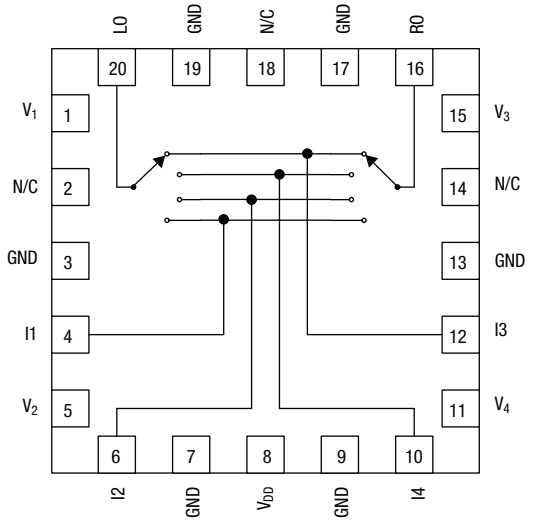
- Four inputs, two outputs
- Any input can be directed to either output
- Only four control lines required
- High interport isolation: 40 dB typ. up to 0.95 GHz
- Miniature QFN-20 4 x 4 mm package
- Available lead (Pb)-free and RoHS-compliant MSL-1 @ 260 °C per JEDEC J-STD-020

Description

The SKY13264-340LF is a four-input to two-output switch in a low-cost QFN-20 4 x 4 mm package. The SKY13264-340LF enables 16 states, directing any of the four inputs to either of the two outputs. States are selected by four positive voltage control inputs. The switch can operate over the temperature range of -40 °C to +85 °C.

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

Functional Block Diagram and Pin Out



Electrical Specifications

V_{CTL} = 0 V/5V, T = 25 °C, P_{INPUT} = -20 dBm, Z_0 = 50 Ω, unless otherwise noted.

Parameter	Conditions	Frequency	Min.	Typ.	Max.	Unit
Insertion loss		0.25–0.95 GHz 0.95–2.15 GHz		7.5 8.5	8 9	dB dB
Insertion loss flatness		0.25–0.95 GHz 0.95–2.15 GHz		1 1	1.5 1.5	dB dB
Isolation		0.25–0.95 GHz 0.95–2.15 GHz	38 30	40 33		dB dB
Return loss	I1, I2, I3, I4 LO, RO	0.25–2.15 GHz	10 8	15 10		dB dB

Operating Characteristics

T = 25 °C, Z_0 = 50 Ω, unless otherwise noted

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Input power for 1 dB compression	V_{DD} = 5 V	0.25–2.15 GHz		15		dBm
Control voltages	V_{LOW} = 0 V to 0.2 V @ 50 µA maximum V_{HIGH} = 2.5 V to V_{CC} @ 50 µA maximum					

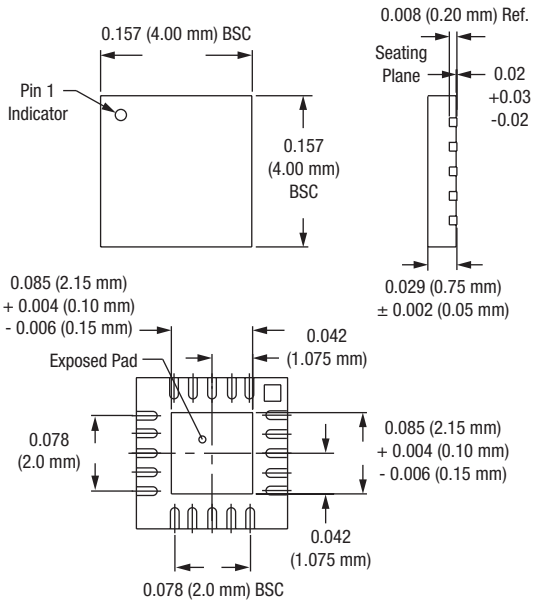
Absolute Maximum Ratings

Characteristic	Value
RF input power	15 dBm
Supply voltage	6 V
Control voltage	$0 \le V_C \le 6$ 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.*

QFN-20 (4 x 4)



Truth Table[1]

		Controls			
		LO Left Output		RO Right Output	
State	Signal Path (Insertion Loss Path)[1]	V_1	V_2	V_3	V_4
0	I1 → LO, I1 → RO	0	0	0	0
1	I1 → LO, I2 → RO	0	0	0	1
2	I1 → LO, I3 → RO	0	0	1	0
3	I1 → LO, I4 → RO	0	0	1	1
4	I2 → LO, I1 → RO	0	1	0	0
5	I2 → LO, I2 → RO	0	1	0	1
6	I2 → LO, I3 → RO	0	1	1	0
7	I2 → LO, I4 → RO	0	1	1	1
8	I3 → LO, I1 → RO	1	0	0	0
9	I3 → LO, I2 → RO	1	0	0	1
10	I3 → LO, I3 → RO	1	0	1	0
11	I3 → LO, I4 → RO	1	0	1	1
12	I4 → LO, I1 → RO	1	1	0	0
13	I4 → LO, I2 → RO	1	1	0	1
14	I4 → LO, I3 → RO	1	1	1	0
15	I4 → LO, I4 → RO	1	1	1	1

1. All other paths are in isolation state.
"1" = 5 V.
"0" = 0 V.

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.