Electrical Specifications at -40 °C to +85 °C

Z_0 = 50 Ω, V_{CTL} = 0/5 V, unless otherwise noted

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Insertion loss		0.5–1.0 GHz		1.9	2.3	dB
		1.0–2.0 GHz		2.4	2.7	dB
		2.0–2.5 GHz		3.2	3.5	dB
Attenuation range				15.5		dB
Attenuation accuracy[1]		0.4–0.5 GHz	± (0.3 + 4% of attenuation setting in dB)			dB
		0.5–1.0 GHz	± (0.2 + 3% of attenuation setting in dB)			dB
		1.0–2.5 GHz	± (0.3 + 5% of attenuation setting in dB)			dB
VSWR (I/O)[2]		0.4–0.5 GHz		1.9	2.2	
		0.5–2.5 GHz		1.5:1	2.0:1	
Switching characteristics						
Rise, fall	10/90% or 90/10% RF			125		ns
On, off	50% CTL to 90/10% RF			250		ns
Video feedthru	T_{RISE} = 1 ns, BW = 500 MHz			75		mV
Input power for 1 dB compression	V_S = 3 V	0.5–2.5 GHz	20	24		dBm
	V_S = 5 V	0.5–2.5 GHz	24	30		dBm
Intermodulation intercept point (IP3)	For two-tone input power 5 dBm					
	V_S = 3 V	0.5–2.5 GHz	42	48		dBm
	V_S = 5 V	0.5–2.5 GHz	43	49		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. V_S = V_{HIGH} ± 0.2 V					

1. Attenuation referenced to insertion loss.
2. Input/output.

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2   January 30, 2008 • Skyworks Proprietary Information • Products and Product Information are Subject to Change Without Notice. • 200103 Rev. C
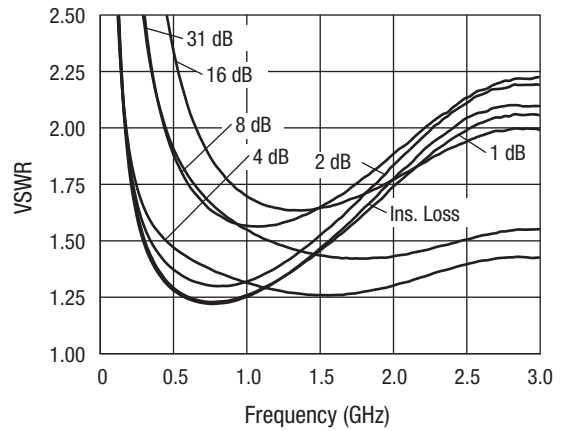
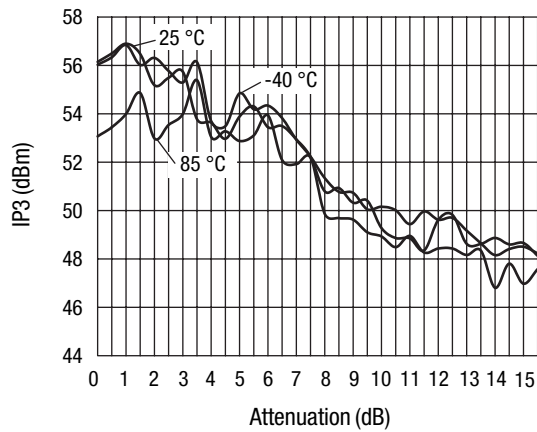## Typical Performance Data (0, 5 V)

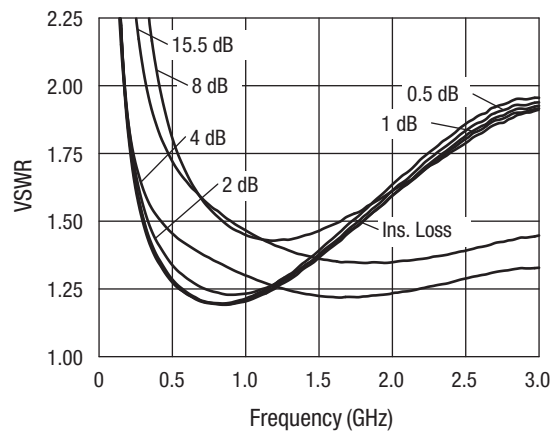### $Z_0 = 50$ Ω, $V_{CTL} = 0/5$ V, unless otherwise noted
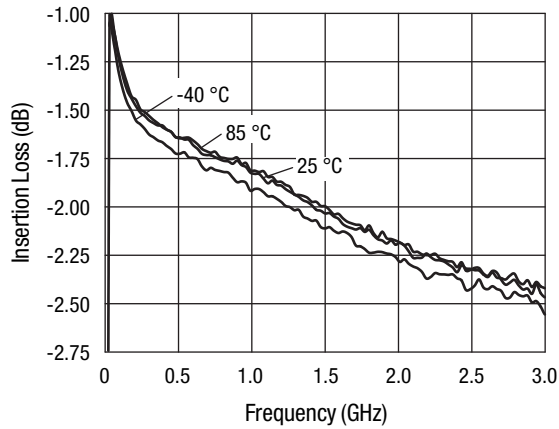
Insertion Loss vs. Frequency

VSWR vs. Frequency (25 °C)

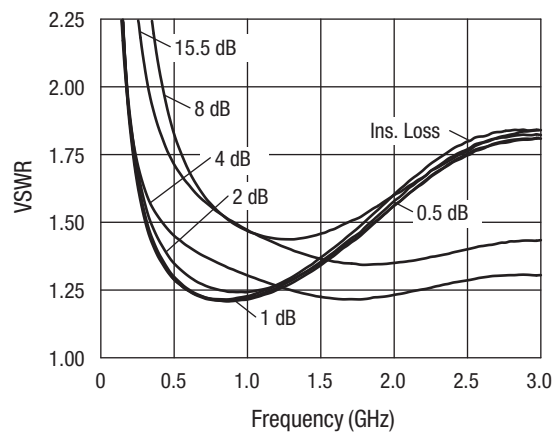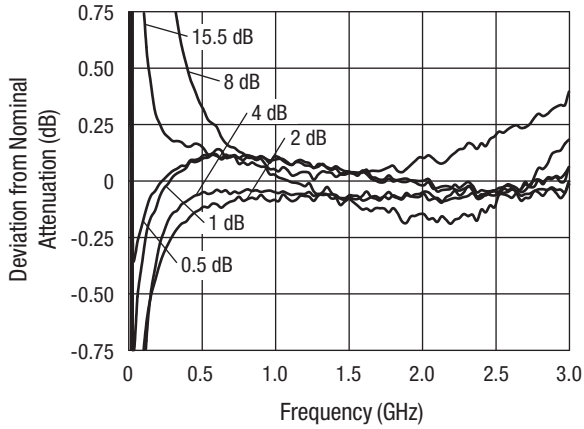**IP3 vs. Attenuation and Temperature (500 MHz)**

VSWR vs. Frequency (85 °C)

Compression Point vs. Attenuation, Voltage, and Temperature

Attenuation State	Control Voltage (V)	Input Power @ 1 dB Compression		
		25 °C (dBm)	85 °C (dBm)	-40 °C (dBm)
Ins. loss	5	30.7	30.1	30.1
0.5	5	31.6	31.1	31.1
1	5	31	30.5	30.2
2	5	31.4	30.9	30.5
4	5	36.8	36.8	36.8
8	5	27.4	33.8	27.1
15.5	5	32.9	31.2	33.3

Frequency = 0.5–2.5 GHz.

VSWR vs. Frequency (-40 °C)

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Attenuation Accuracy vs. Frequency (25 ˚C)
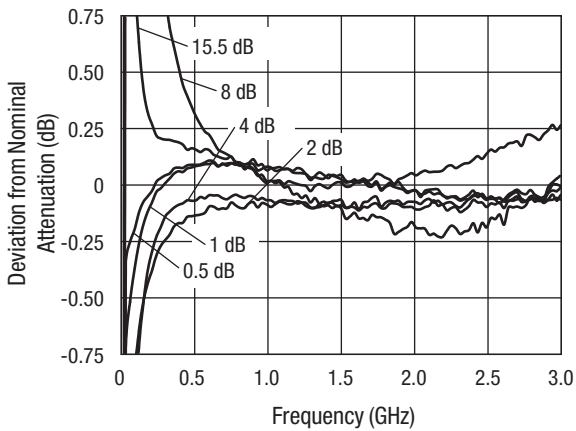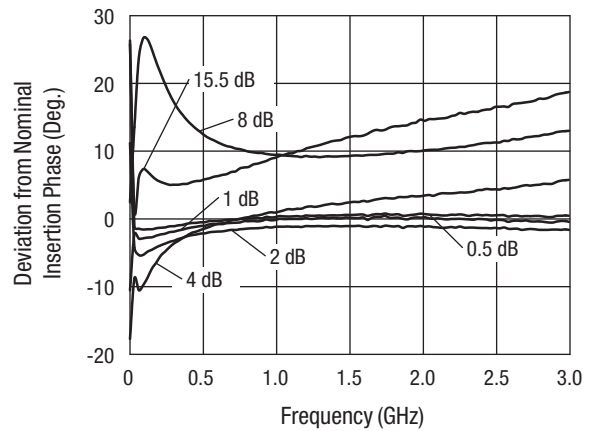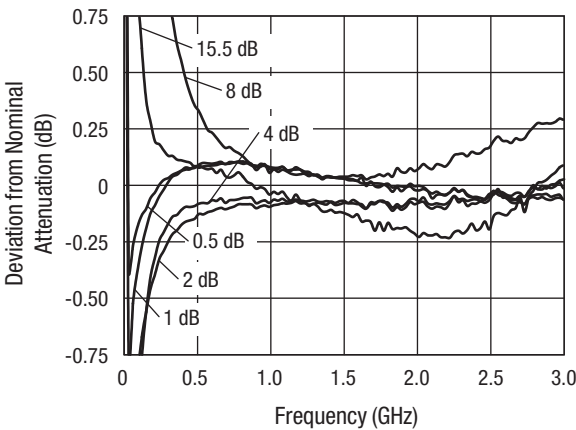
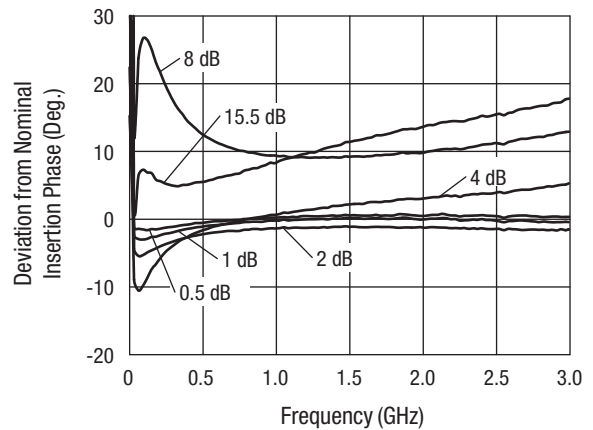

**Attenuation Phase Accuracy
vs. Frequency (25 ˚C)**

Attenuation Accuracy vs. Frequency (85 ˚C)
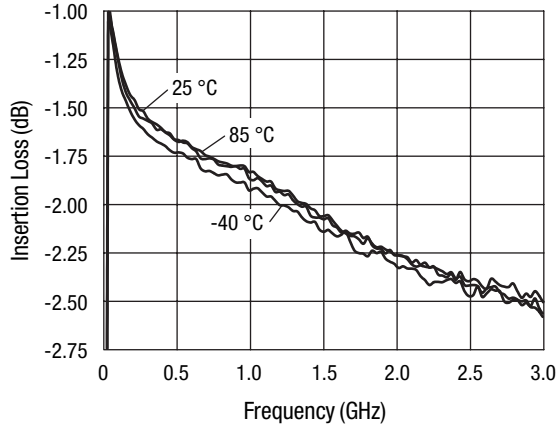

**Attenuation Phase Accuracy
vs. Frequency (85 ˚C)**

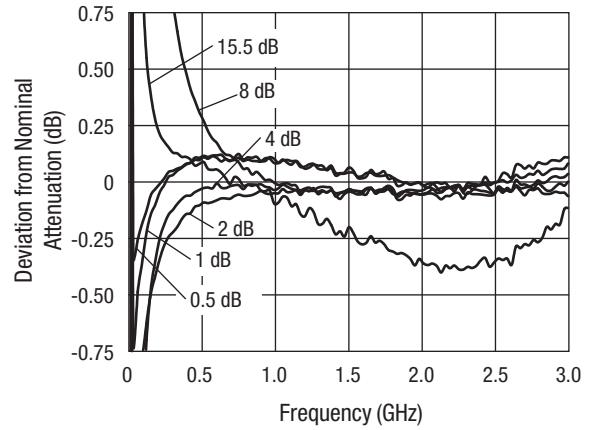**Attenuation Accuracy vs. Frequency (-40 ˚C)**

**Attenuation Phase Accuracy
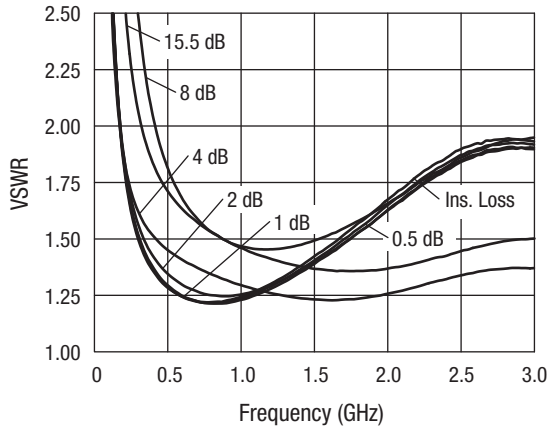vs. Frequency (-40 ˚C)**

Typical Performance Data (0, 3 V)

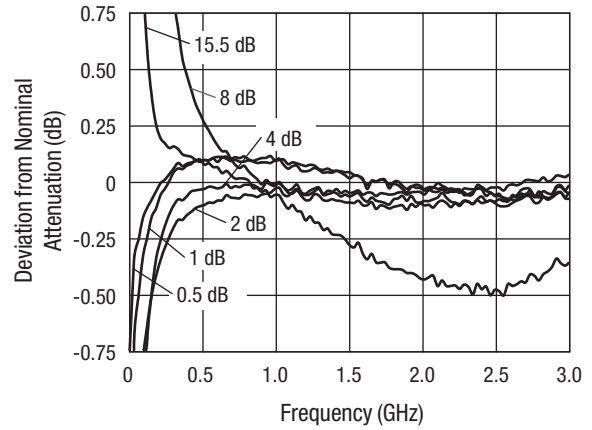**Z_0 = 50 Ω, V_{CTL} = 0/5 V, unless otherwise noted**

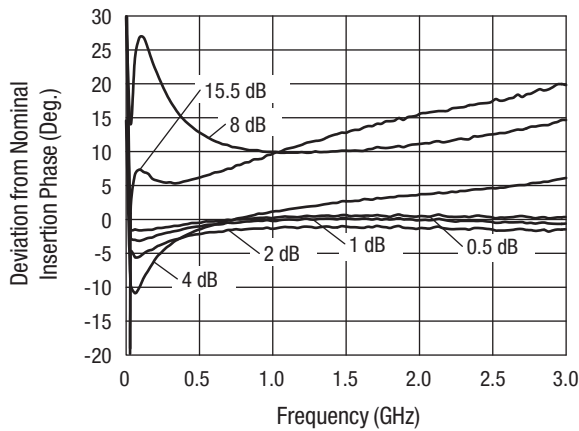**Insertion Loss vs. Frequency**

Attenuation Accuracy vs. Frequency (25 °C)
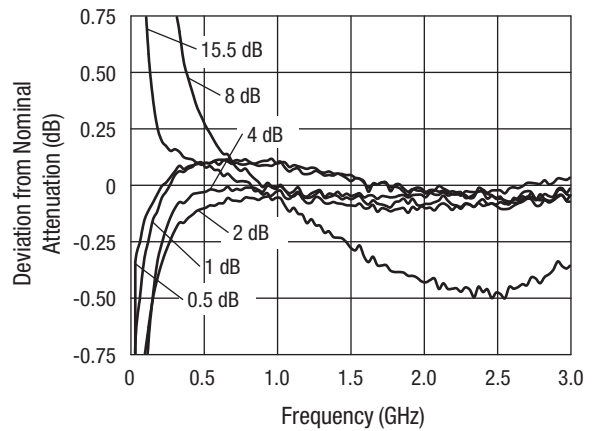

VSWR vs. Frequency (25 °C)

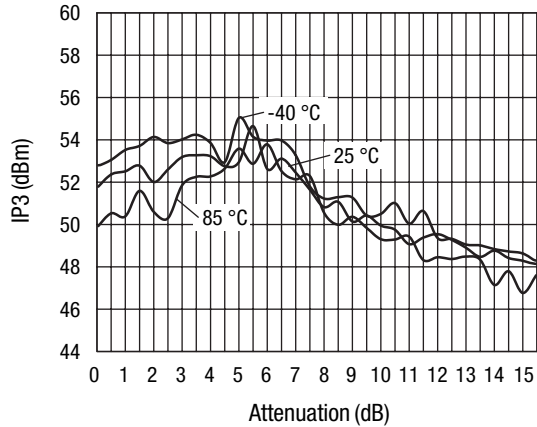**Attenuation Accuracy vs. Frequency (85 °C)**

**Attenuation Phase Accuracy
vs. Frequency (25 °C)**

Attenuation Accuracy vs. Frequency (-40 °C)

IP3 vs. Attenuation and Temperature (500 MHz)

Compression Point vs. Attenuation, Voltage, and Temperature

Attenuation State	Control Voltage (V)	Input Power @ 1 dB Compression		
		25 °C (dBm)	85 °C (dBm)	-40 °C (dBm)
Ins. Loss	3	24.1	23.7	24.1
0.5	3	24.4	24	25
1	3	24.4	23.8	24.3
2	3	24.7	24.1	24.5
4	3	36.8	36.8	36.8
8	3	26.7	26.8	29.6
15.5	3	27.1	25.6	28.7

Frequency = 0.5–2.5 GHz.

Truth Table

V₁	V₂	V₃	V₄	V₅	Attenuation
8 dB	4 dB	2 dB	1 dB	0.5 dB	J₁–J₂
V_HIGH	V_HIGH	V_HIGH	V_HIGH	V_HIGH	Reference I.L.
V_HIGH	V_HIGH	V_HIGH	V_HIGH	0	0.5 dB
V_HIGH	V_HIGH	V_HIGH	0	V_HIGH	1 dB
V_HIGH	V_HIGH	0	V_HIGH	V_HIGH	2 dB
V_HIGH	0	V_HIGH	V_HIGH	V_HIGH	4 dB
0	V_HIGH	V_HIGH	V_HIGH	V_HIGH	8 dB
0	0	0	0	0	15.5 dB max. atten.

V_{HIGH} = 3 to 5 V (V_S = V_{HIGH} ± 0.2 V).

Absolute Maximum Ratings

Characteristic	Value
RF input power	2 W > 500 MHz 0/8 V 0.75 W @ 50 MHz 0/8 V
Supply voltage	8 V
Control voltage	-0.2 V, +8 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.
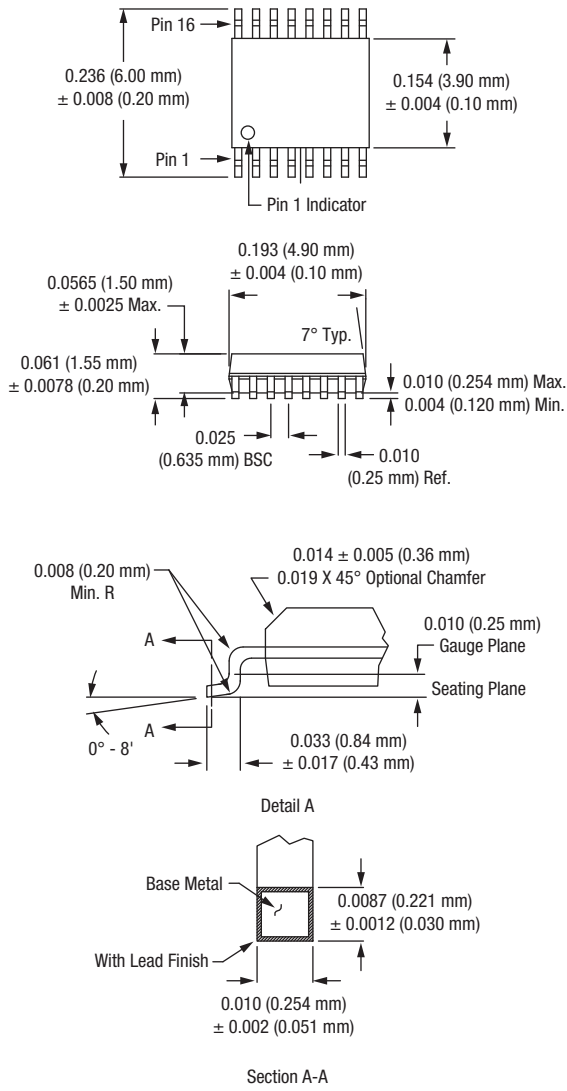
Recommended Solder Reflow Profiles

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.

SSOP-16

Pin 16

0.236 (6.00 mm)
± 0.008 (0.20 mm)

0.154 (3.90 mm)
± 0.004 (0.10 mm)

Pin 1

Pin 1 Indicator

0.193 (4.90 mm)
± 0.004 (0.10 mm)

0.0565 (1.50 mm)
± 0.0025 Max.

7° Typ.

0.061 (1.55 mm)
± 0.0078 (0.20 mm)

0.010 (0.254 mm) Max.
0.004 (0.120 mm) Min.

0.025
(0.635 mm) BSC

0.010
(0.25 mm) Ref.

0.014 ± 0.005 (0.36 mm)
0.019 X 45° Optional Chamfer

0.008 (0.20 mm)
Min. R

A

0.010 (0.25 mm)
Gauge Plane

Seating Plane

A

0° - 8'

0.033 (0.84 mm)
± 0.017 (0.43 mm)

Detail A

Base Metal

0.0087 (0.221 mm)
± 0.0012 (0.030 mm)

With Lead Finish

0.010 (0.254 mm)
± 0.002 (0.051 mm)

Section A-A

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