Coaxial

Power Detector

ZX47-50+
ZX47-50LN+

50Ω, -50dBm to +15dBm, 10 to 8000 MHz

CASE STYLE: HN1173

Connectors	Model
SMA	ZX47-50-S+
SMA	ZX47-50LN-S+

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
DC Power:	
Max. voltage	5.7V
Max. current	120mA
Internal Power Dissipation	0.73W
Input Power	+22dBm

Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections

RF IN	1
DC OUT	5
Vcc (+5V)	2
TEMPERATURE SENSOR	4
GROUND	3

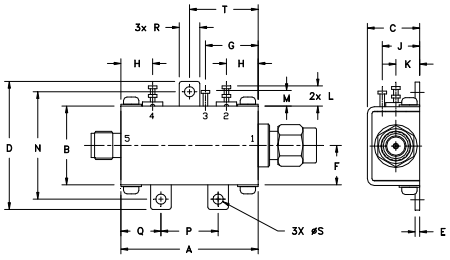
Features

- Low Noise (Output Ripple) for ZX47-50LN+, 20mVp-p Typ. @ 10MHz
- High Dynamic Range
- Wide Bandwidth
- Single Supply Voltage: +5V
- Stability Over Temperature
- Built-in Temperature Sensor
- Protected by US patent 6,790,049

Applications

- RF/IF Power Measurements
- Low Cost Power Monitoring System
- RF Leakage Monitors
- Fast feedback Levelling Circuits
- RF Power Control
- Receiver RF/IF Gain Control
- RSSI measurements

Outline Drawing



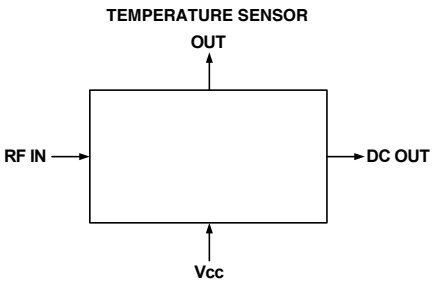
NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminals. See Application Note AN-40-10 .

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K
1.20	**.69**	**.46**	**1.12**	**.04**	**.34**	**.46**	**.28**	**.33**	**.21**
30.48	17.53	11.68	28.45	1.02	8.64	11.68	7.11	8.38	5.33

L	M	N	P	Q	R	S	T	wt.
.18	**.14**	**.94**	**.50**	**.35**	**.18**	**.106**	**.60**	grams
4.57	3.56	23.88	12.70	8.89	4.57	2.69	15.24	31.8

Simplified Functional Diagram

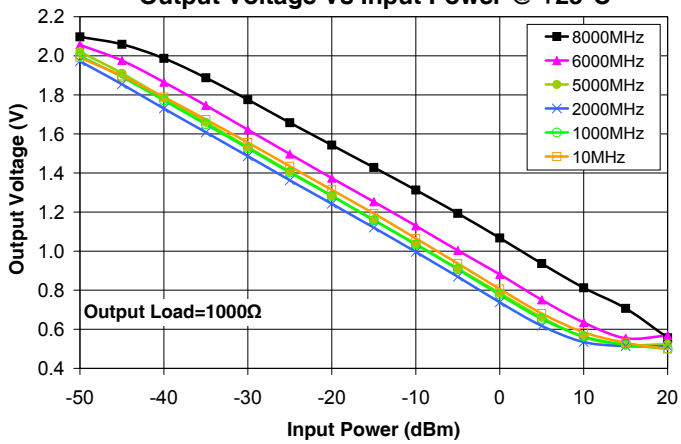


Electrical Specifications (T_{AMB} = 25°C)

FREQ. (MHz) Min.	FREQ. (MHz) Max.	DYNAMIC RANGE AT ±1dB ERROR (dBm) Typ.	OUTPUT VOLT. RANGE (V) Typ.	SLOPE (mV/dB) (Note 1) Typ.	VSWR (:1) Typ.	PULSE RESPONSE TIME (nSec) Typ. ZX47-50+ Rise	ZX47-50+ Fall	ZX47-50LN+ Rise	ZX47-50LN+ Fall	TEMP. SENSOR OUTPUT SLOPE (mV/°C) (Note 2) Typ.	DC OPERATING POWER Vcc (Volts) Min.	Vcc (Volts) Typ.	Vcc (Volts) Max.	Note 3 Current (mA) Typ.
10	1000	-45 to +10	0.50 - 2.10	-25	1.05	400	10	800	400	2.00	4.5	5.0	5.5	100
1000	5000	-50 to +5			1.20									
5000	6000	-45 to +10			1.30									
6000	8000	-40 to +15			1.20									

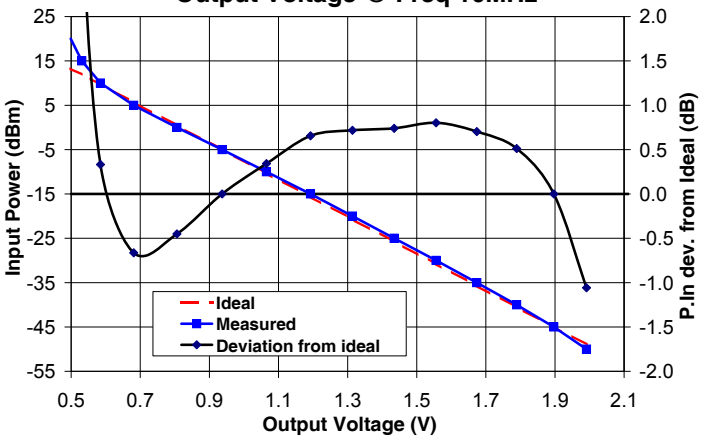
Notes:
1. The negative slope indicates that Output Voltage decreases as Input Power increases. See "Output Voltage vs Input Power" graph below.
2. Temperature sensor output provides a DC Output Voltage which increases linearly with temperature rise. Recommended minimum load for this port is 2 kΩ.
3. Recommended minimum load at DC out port is 100 Ω. See maximum ratings for no damage.

Output Voltage Vs Input Power @ +25°C

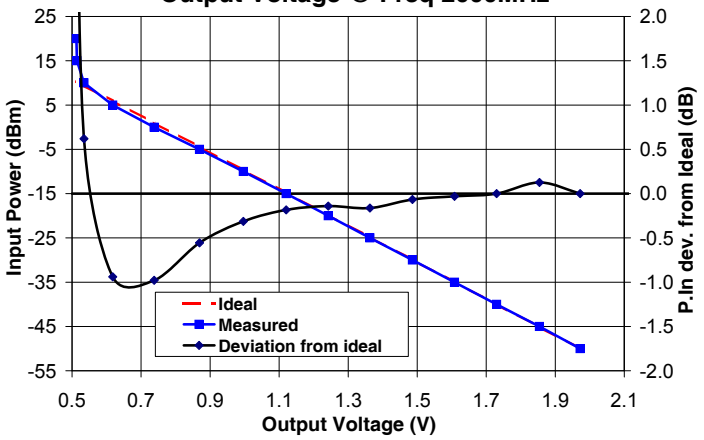


Performance Curves

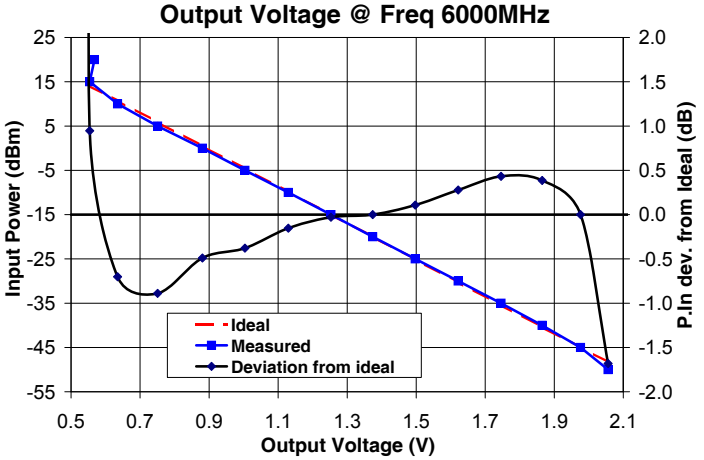
Power Input Deviation from Ideal Vs Output Voltage @ Freq 10MHz



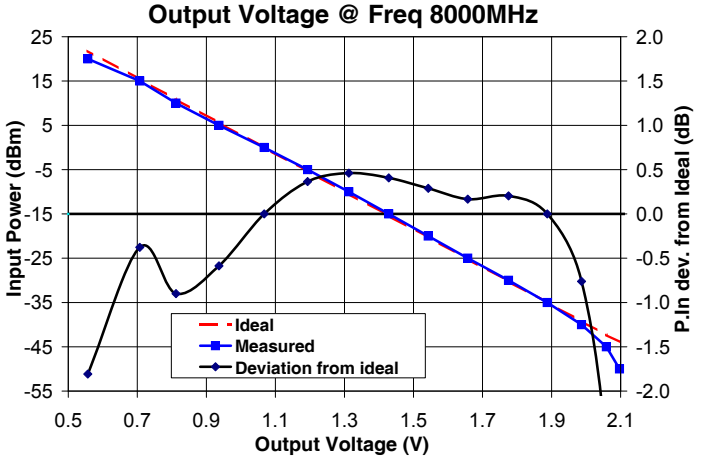
Power Input Deviation from Ideal Vs Output Voltage @ Freq 2000MHz



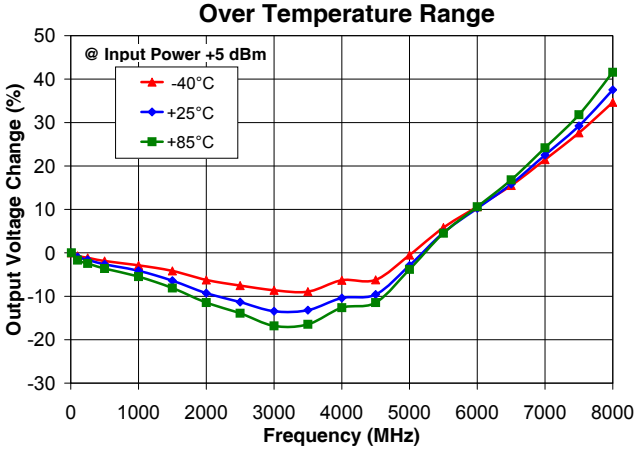
Power Input Deviation from Ideal Vs Output Voltage @ Freq 6000MHz



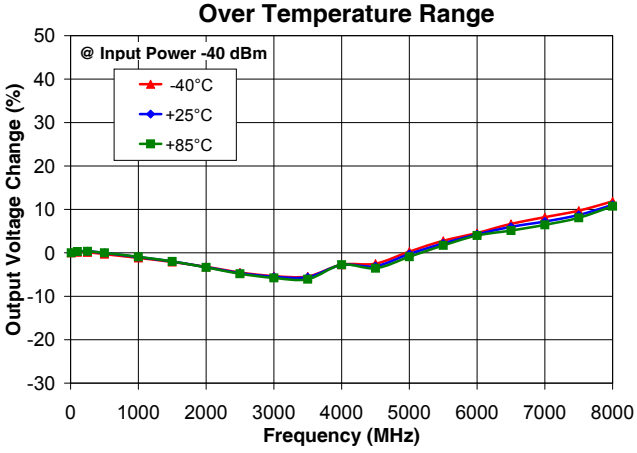
Power Input Deviation from Ideal Vs Output Voltage @ Freq 8000MHz



Output Voltage Change Vs Freq Over Temperature Range



Output Voltage Change Vs Freq Over Temperature Range



Notes
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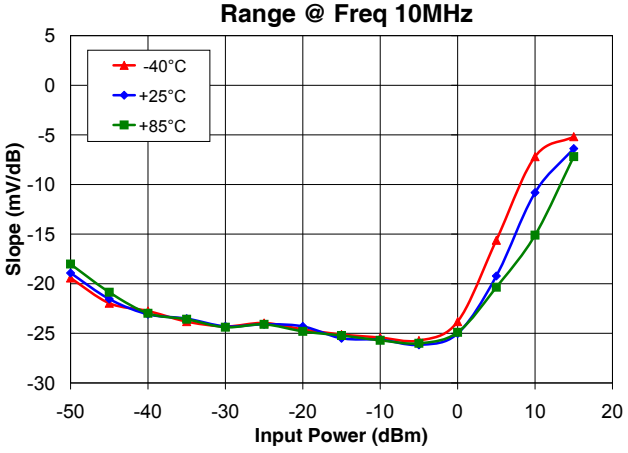
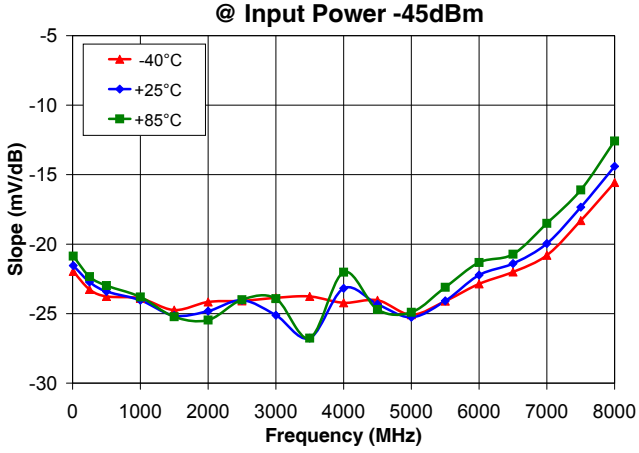
Performance Curves

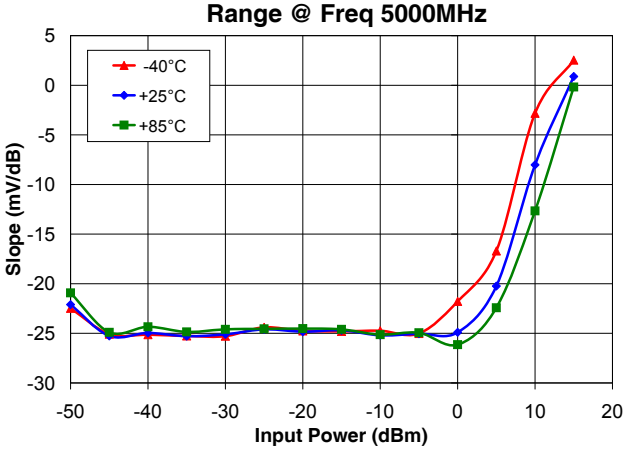
Slope Vs Input Power Over Temperature Range @ Freq 10MHz



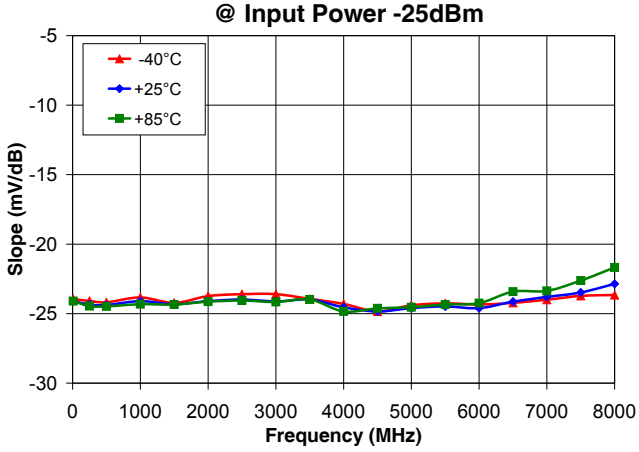
Slope Vs Freq Over Temperature Range @ Input Power -45dBm



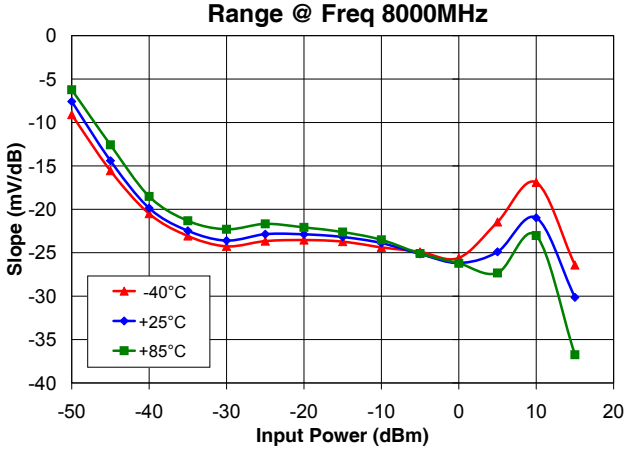
Slope Vs Input Power Over Temperature Range @ Freq 5000MHz



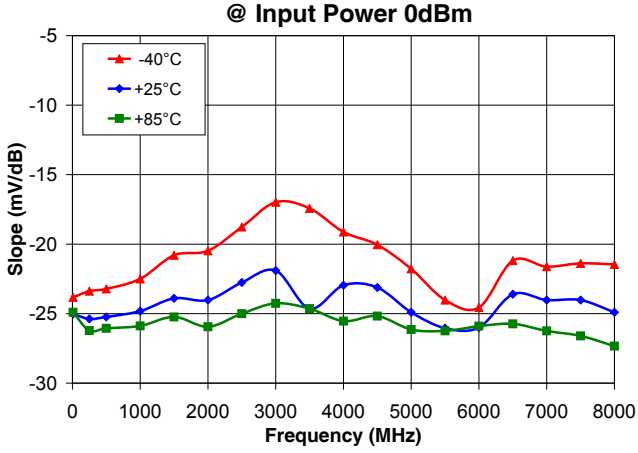
Slope Vs Freq Over Temperature Range @ Input Power -25dBm



Slope Vs Input Power Over Temperature Range @ Freq 8000MHz



Slope Vs Freq Over Temerature Range @ Input Power 0dBm



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