Coaxial

Power Detector

ZX47-50+

50Ω, - 50dBm to +15dBm, 10 - 8000 MHz

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

Features

- High Dynamic Range
- Wide Bandwidth
- Single Supply Voltage: +5V
- Stability Over Temperature
- Built-in Temperature Sensor
- Protected by US patent 6,790,049

CASE STYLE: HN1173

Connectors	Model	Price	Qty.
SMA	ZX47-50-S+	$89.95 ea.	(1-9)

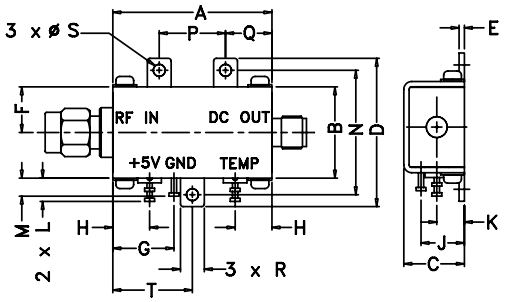
+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

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



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**
30.5	17.5	11.6	28.4	1.0	8.7	11.7	7.1	8.3	5.3

L	M	N	P	Q	R	S	T	wt.
.18	**.14**	**.94**	**.50**	**.35**	**.18**	**.09**	**.60**	grams
4.5	3.5	23.8	12.7	8.9	4.6	2.3	15.2	**31.8**

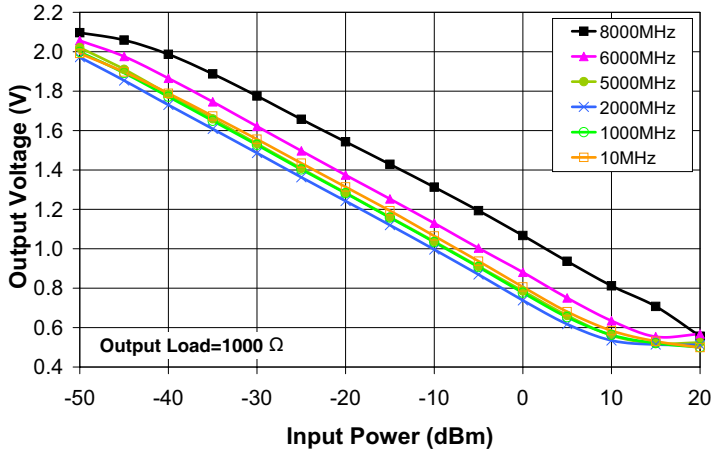
Electrical Specifications (T_{AMB}= 25°C)

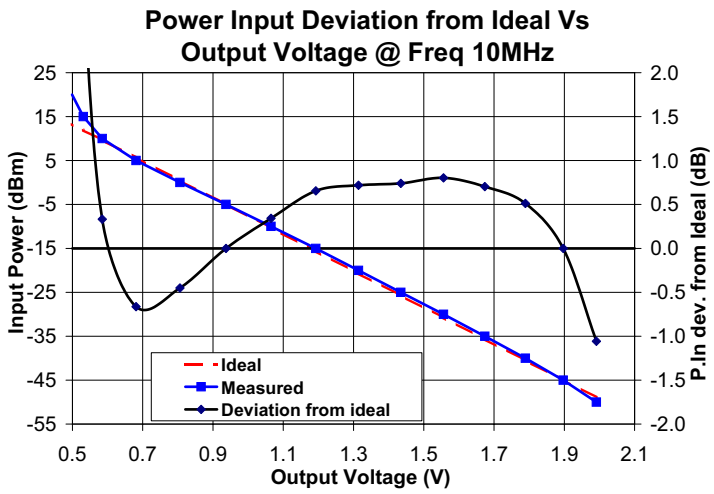
FREQ. (MHz) Min.	Max.	DYNAMIC RANGE @ ± 1 dB ERROR (dBm) Typ.	OUTPUT VOLTAGE RANGE (V) Typ.	SLOPE (note 1) (mV/dB) Typ.	VSWR Typ.	PULSE RESPONSE TIME Rise (nsec) Typ.	Fall (nsec) Typ.	TEMPERATURE SENSOR OUTPUT SLOPE (note 2) (mV/°C) Typ.	DC OPERATING POWER Vcc (volts) Min.	Typ.	Max.	(note 3) Current (mA) Typ.
10	1000	-45 to +10	0.50 - 2.10	-25	1.05	400	10	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							

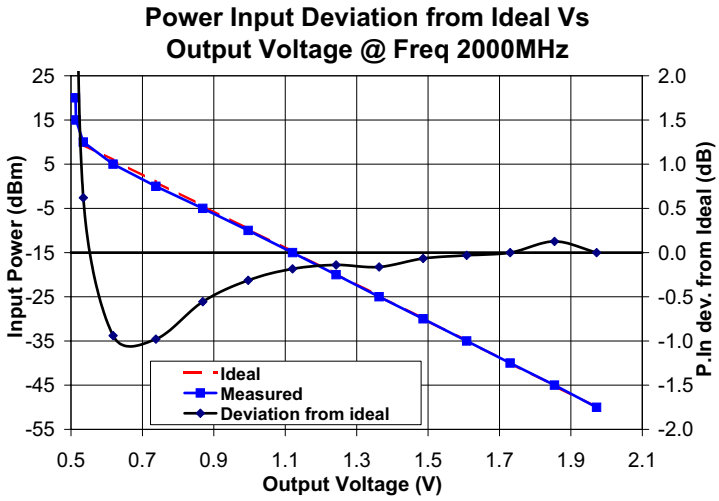
Notes:

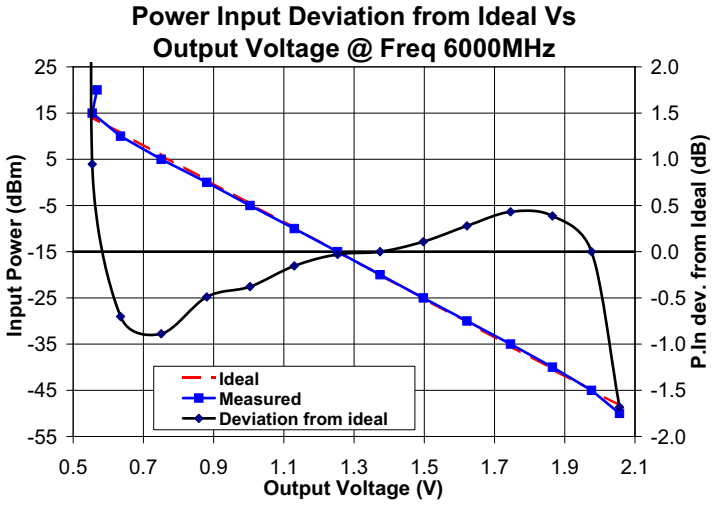
1. The negative slope indicates that Output Voltage decreases as Input Power increases. See "Output Voltage vs Input Power" graph below.
2. Temperature sensor output (TEMP pin on Outline Drawing) provides a DC Output Voltage which increases linearly with temperature rise. Recommended minimum load for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

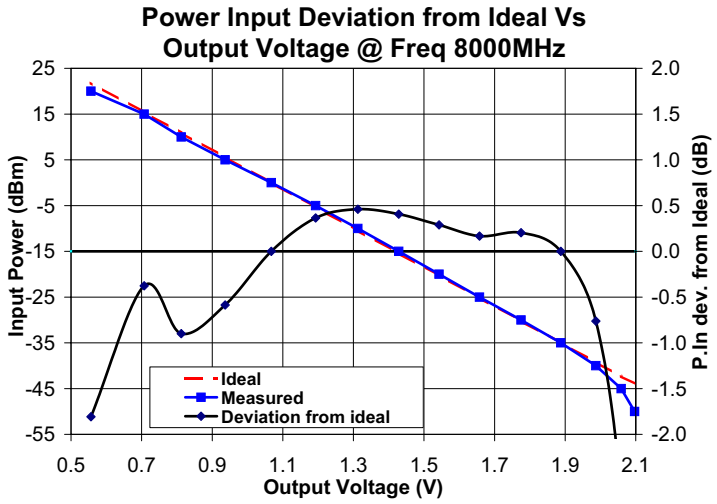
Output Voltage Vs Input Power @ +25°C

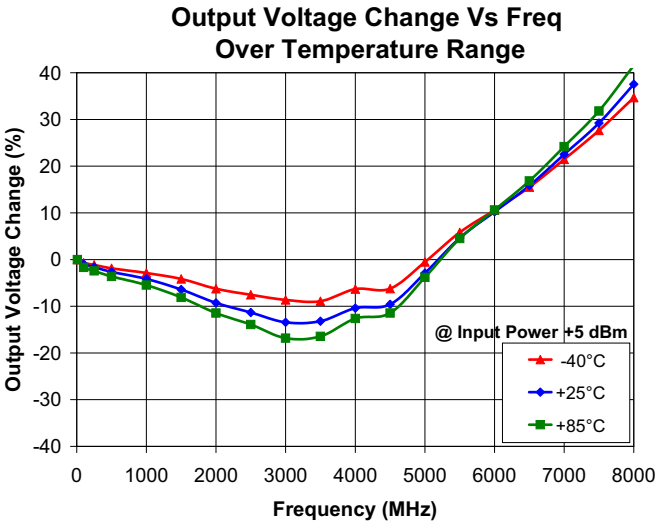


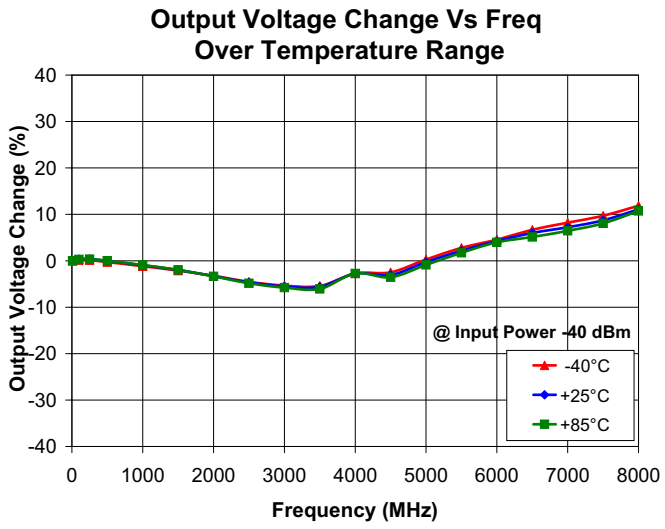

Power Input Deviation from Ideal Vs
Output Voltage @ Freq 10MHz
Input Power (dBm)
P.In dev. from Ideal (dB)
Output Voltage (V)
Ideal
Measured
Deviation from ideal


Power Input Deviation from Ideal Vs
Output Voltage @ Freq 2000MHz
Input Power (dBm)
P.In dev. from Ideal (dB)
Output Voltage (V)
Ideal
Measured
Deviation from ideal

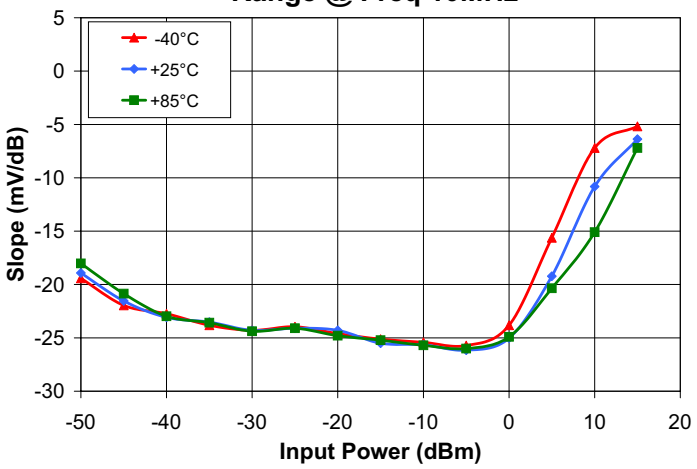

Power Input Deviation from Ideal Vs
Output Voltage @ Freq 6000MHz
Input Power (dBm)
P.In dev. from Ideal (dB)
Output Voltage (V)
Ideal
Measured
Deviation from ideal


Power Input Deviation from Ideal Vs
Output Voltage @ Freq 8000MHz
Input Power (dBm)
P.In dev. from Ideal (dB)
Output Voltage (V)
Ideal
Measured
Deviation from ideal

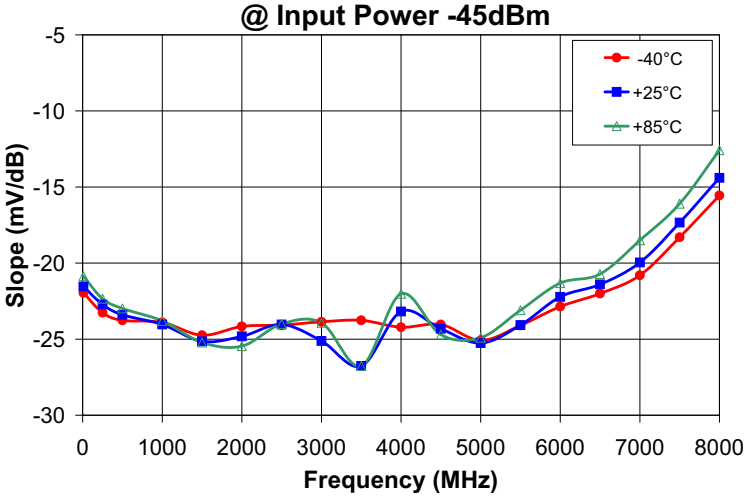

Output Voltage Change Vs Freq
Over Temperature Range
Output Voltage Change (%)
Frequency (MHz)
@ Input Power +5 dBm
-40°C
+25°C
+85°C


Output Voltage Change Vs Freq
Over Temperature Range
Output Voltage Change (%)
Frequency (MHz)
@ Input Power -40 dBm
-40°C
+25°C
+85°C

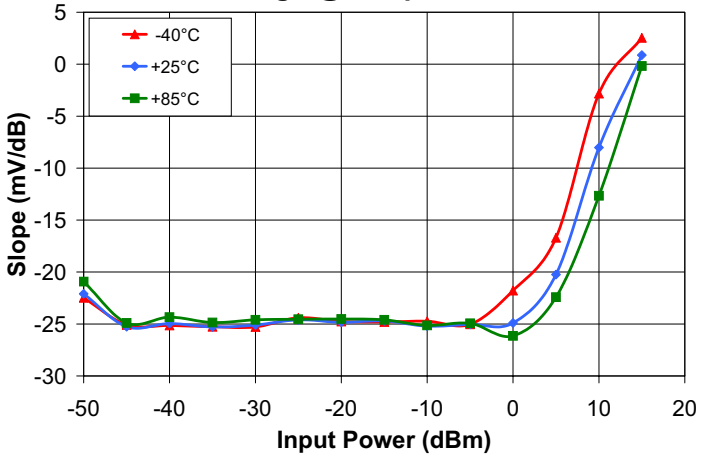
Slope Vs Input Power Over Temperature Range @ Freq 10MHz



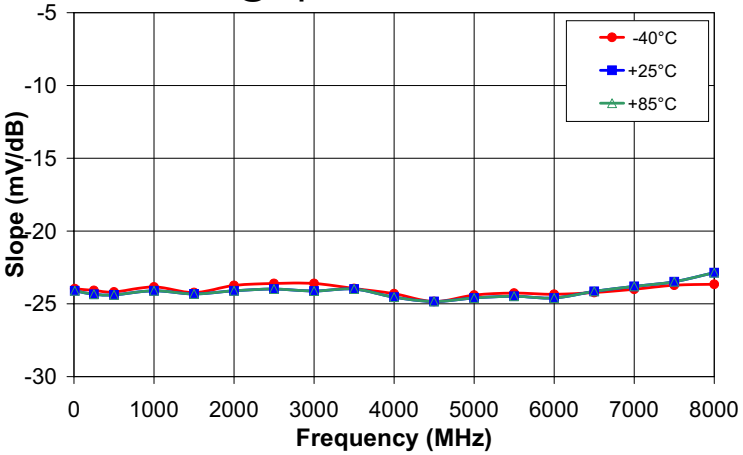
Slope Vs Freq Over Temperature Range @ Input Power -45dBm



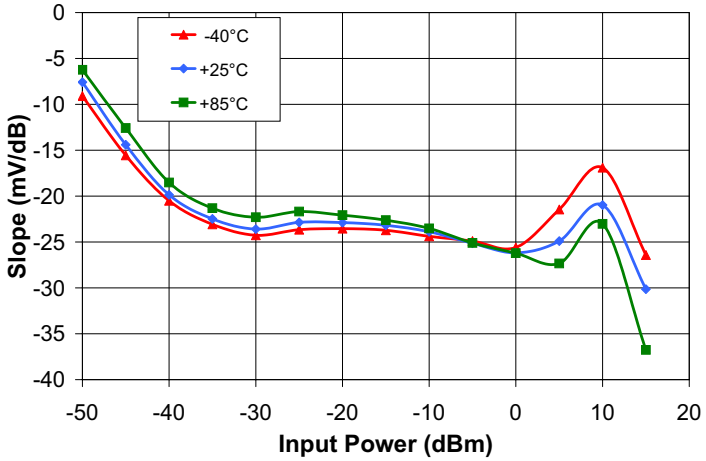
Slope Vs Input Power Over Temperature Range @ Freq 5000MHz



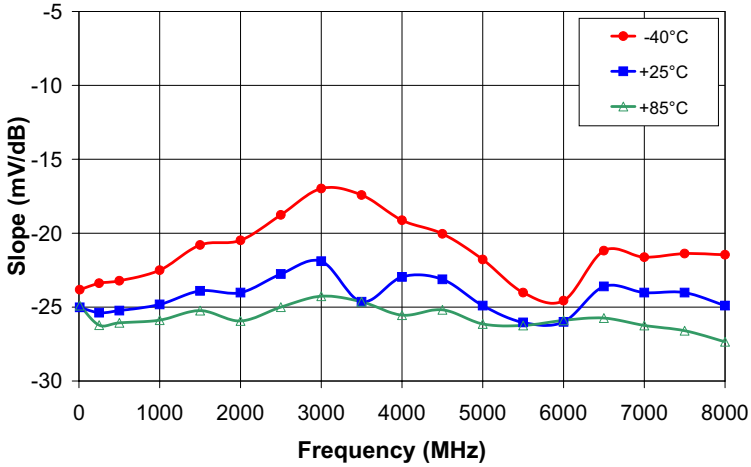
Slope Vs Freq Over Temperature Range @ Input Power -25dBm

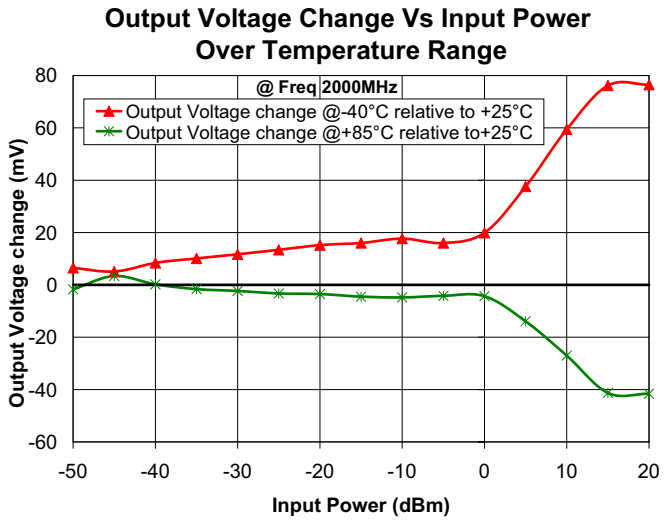


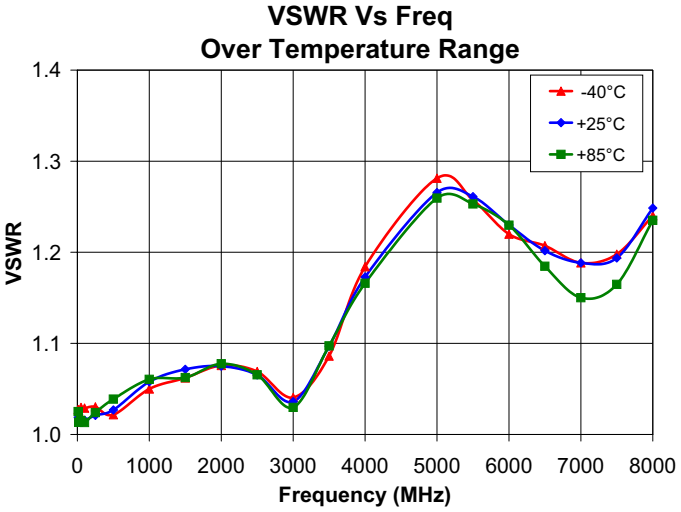
Slope Vs Input Power Over Temperature Range @ Freq 8000MHz

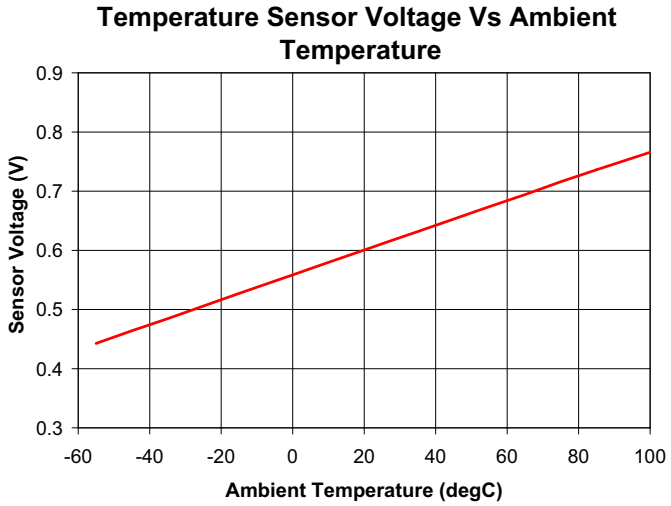


Slope Vs Freq Over Temerature Range @ Input Power 0dBm




Output Voltage Change Vs Input Power
Over Temperature Range
@ Freq 2000MHz
Output Voltage change @-40°C relative to +25°C
Output Voltage change @+85°C relative to+25°C
Output Voltage change (mV)
80
60
40
20
0
-20
-40
-60
-50
-40
-30
-20
-10
0
10
20
Input Power (dBm)


VSWR Vs Freq
Over Temperature Range
-40°C
+25°C
+85°C
VSWR
1.4
1.3
1.2
1.1
1.0
0
1000
2000
3000
4000
5000
6000
7000
8000
Frequency (MHz)


Temperature Sensor Voltage Vs Ambient
Temperature
Sensor Voltage (V)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
-60
-40
-20
0
20
40
60
80
100
Ambient Temperature (degC)