

# Power Detector

50Ω, -60dBm to +5dBm, 10 to 8000 MHz

## Maximum Ratings

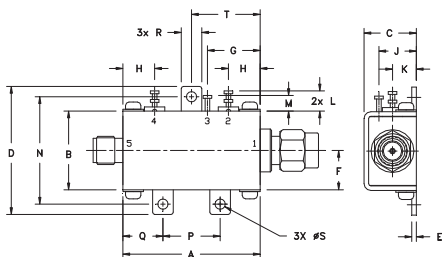
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
DC Power:	
Max. voltage	5.7V
Max. current	120mA
Internal Power Dissipation	0.73W
Input Power	+15dBm

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

## Outline Drawing



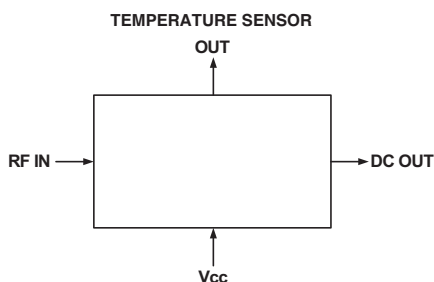
## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K
1.20	.69	.46	1.12	.04	.34	.46	.28	.33	.21
30.48	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



## Features

- Low Noise DC Output for ZX47-60LN+, 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

**ZX47-60+**  
**ZX47-60LN+**



CASE STYLE: HN1173

Connectors	Model	Price	Qty.
SMA	ZX47-60-S+	\$89.95 ea.	(1-9)
SMA	ZX47-60LN-S+	\$89.95 ea.	(1-9)

## +RoHS Compliant

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

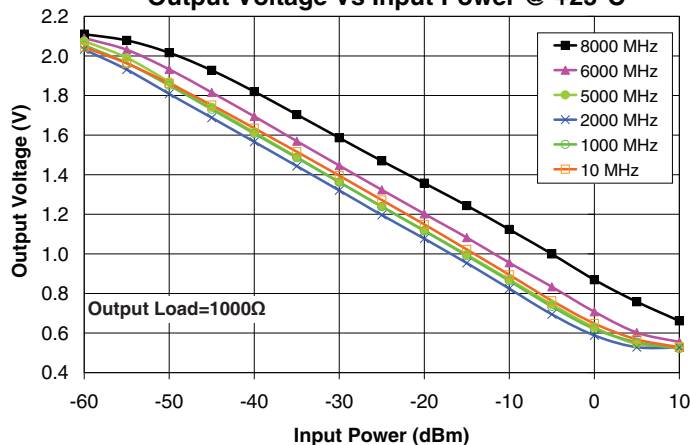
## Electrical Specifications (T<sub>AMB</sub> = 25°C)

FREQ. (MHz)		DYNAMIC RANGE AT ±1dB ERROR (dBm)	OUTPUT VOLT. RANGE (V)	SLOPE (mV/dB) (Note 1)	VSWR (:1)	PULSE RESPONSE TIME (nSec) Typ.				TEMP. SENSOR OUTPUT SLOPE (mV/°C) (Note 2)	DC OPERATING POWER				
Min.	Max.	Typ.	Typ.	Typ.	Typ.	ZX47-60+ Rise Fall		ZX47-60LN+ Rise Fall		Typ.	Min.	Typ.	Max.	Note 3 Current (mA)	
10	1000	-55 to 0	0.50 - 2.10	-25	1.1										
1000	5000	-60 to -5			1.8										
5000	6000	-55 to +5			1.7	400	10	800	400	2.00	4.5	5.0	5.5	100	
6000	8000	-50 to +5			1.4										

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.

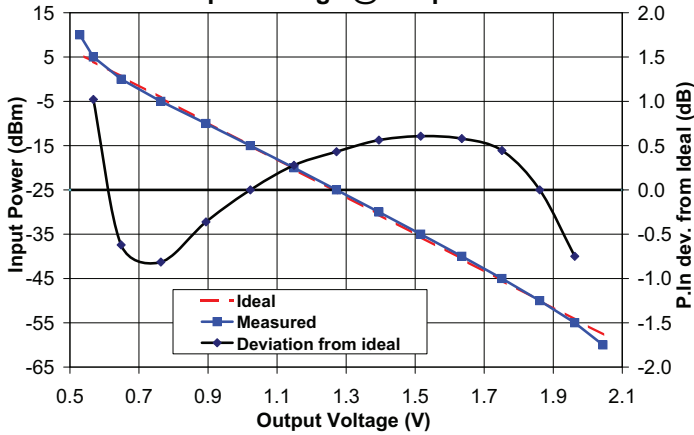
## Output Voltage Vs Input Power @ +25°C



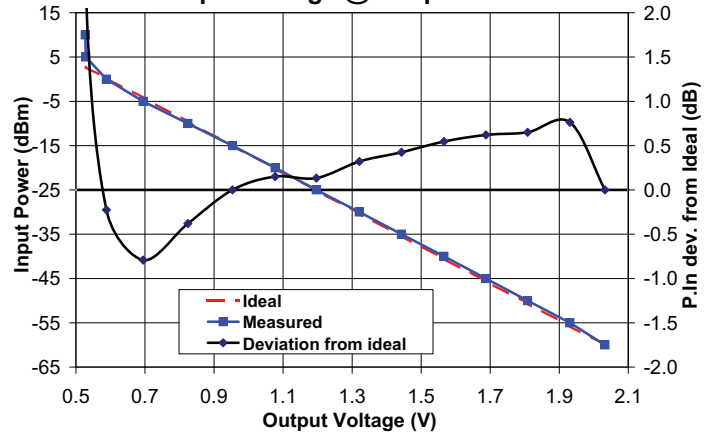
# Performance Curves

ZX47-60+  
ZX47-60LN+

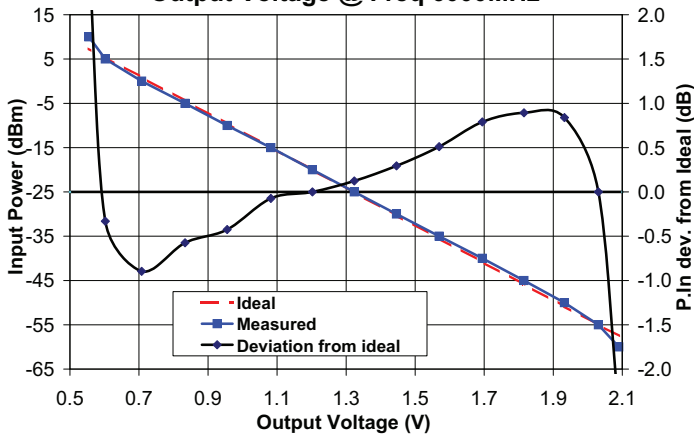
Power Input Deviation from Ideal Vs  
Output Voltage @ Freq 10MHz



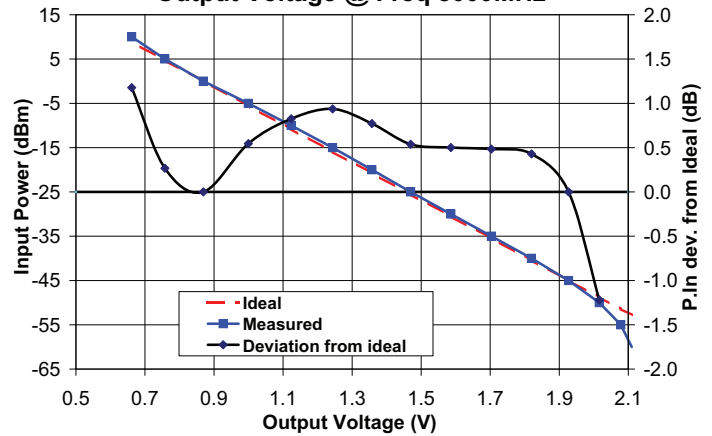
Power Input Deviation from Ideal Vs  
Output Voltage @ Freq 2000MHz



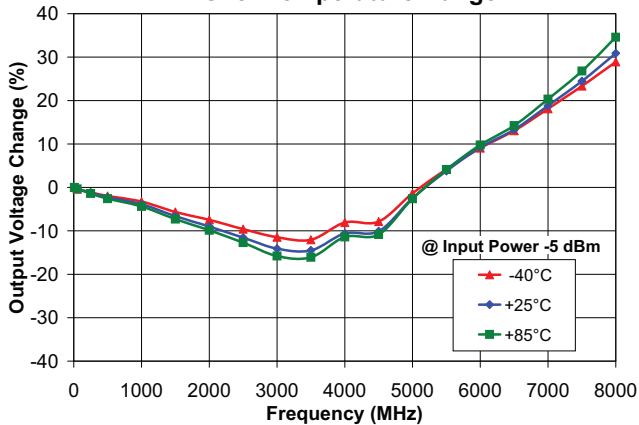
Power Input Deviation from Ideal Vs  
Output Voltage @ Freq 6000MHz



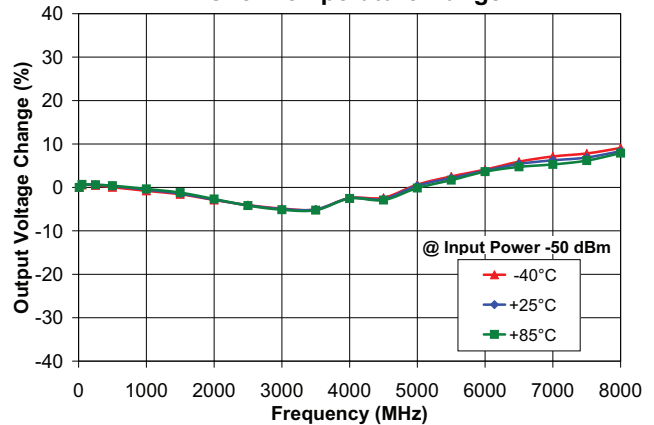
Power Input Deviation from Ideal Vs  
Output Voltage @ Freq 8000MHz



Output Voltage Change Vs Freq  
Over Temperature Range



Output Voltage Change Vs Freq  
Over Temperature Range



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IF/RF MICROWAVE COMPONENTS

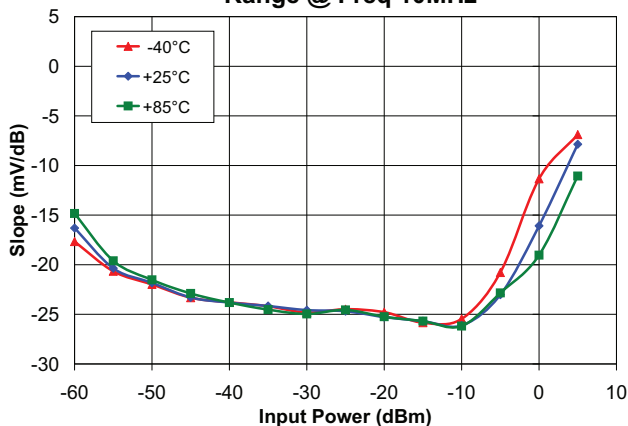
For detailed performance specs  
& shopping online see web site

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

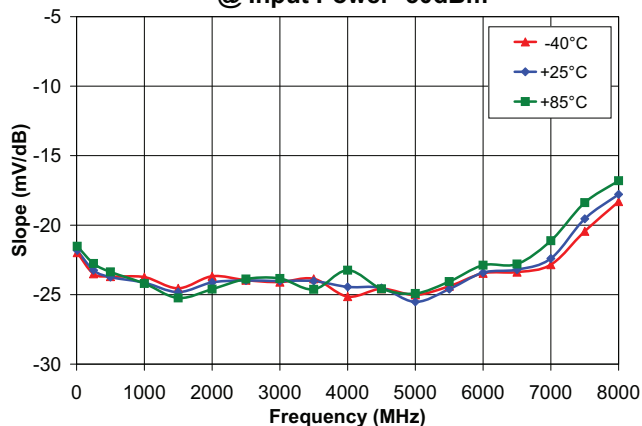
# Performance Curves

ZX47-60+  
ZX47-60LN+

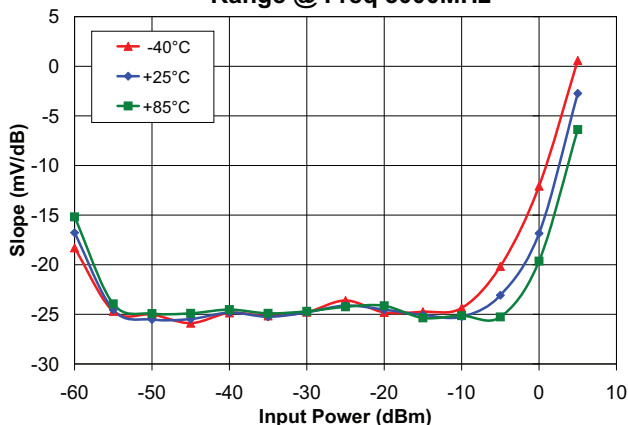
Slope Vs Input Power Over Temperature Range @ Freq 10MHz



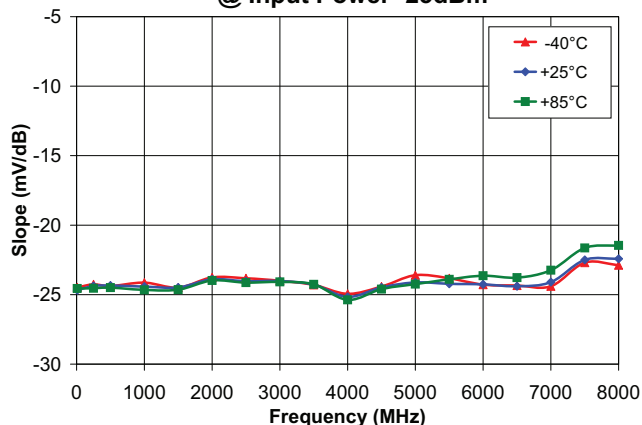
Slope Vs Freq Over Temperature Range @ Input Power -50dBm



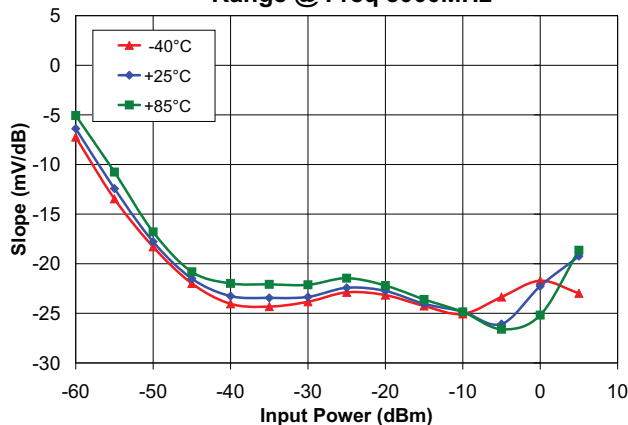
Slope Vs Input Power Over Temperature Range @ Freq 5000MHz



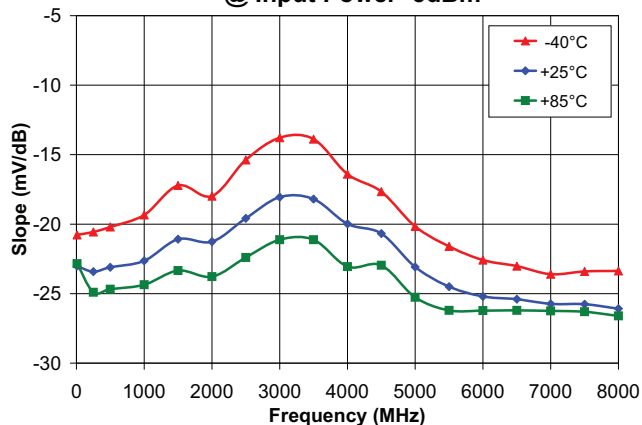
Slope Vs Freq Over Temperature Range @ Input Power -25dBm



Slope Vs Input Power Over Temperature Range @ Freq 8000MHz



Slope Vs Freq Over Temperature Range @ Input Power -5dBm



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