

# Broadband High Power Amplifier

Product Name : RCA0530H44E, Code Name :

Doc. Name : Preliminary Short Spec.

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<p><b>Preliminary Short Specification</b> for <b>RCA0530H44E</b></p>
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Created	Printed	Document Number	Revision	Manufacturer
2016/1/22	2017/7/24		D	<b>RFcore co.,Ltd</b>
File : RCA0530H44E Short Spec.docx				

*The Specifications is subject to change before finalization*

Customer Service: Tel. 82-31-708-7575

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<http://www.rfcore.com>

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ELECTRICAL SPECIFICATIONS		@ 50 Ohms load, 28 Vdc, Tc = 35 °C
Parameter	Specification	Remark
Frequency Range	500 ~ 3000 MHz	
Saturated Output Power	45 dBm typ. 43 dBm min.	@ CW, 50 ohms load
Small Signal Gain	44 dB min.	Input Level = - 15 dBm
Small Signal Gain Flatness	Peak to Peak 7 dB	Input Level = - 15 dBm
Large Signal Gain	40 dB min.	Input Level = 0 dBm
Large Signal Gain Flatness	Peak to Peak 6 dB	Input Level = 0 dBm
Maximum Input Power for no damage	10 dBm	
Input VSWR	Less than 2.0 : 1	
Maximum load VSWR for amplifier working	3.5 : 1	Works with degraded performance.
Maximum Output Load Condition for survival	Infinite VSWR	Take a look video <a href="http://www.youtube.com/watch?v=1kLBxPf4--M">http://www.youtube.com/watch?v=1kLBxPf4--M</a> You can look for this video in youtube.com with keyword 'RFcore' or 'VSWR protection'
On/Off Switching Time	1 usec typ.	
DC Input Voltage	28 ± 1 Vdc	
Current Consumption	3.5 A typ. 4.5 A max.	@ Pout = 43 dBm
RF Input Signal Format	CW	

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Interface Pin Description		
Connector	Description	Specification
I/O Interface(D-Sub 9Pin Male)	1. Enable(Active Low)	(Enable = 0V, Disable = 5V) pull-up @ 5V with 10k ohm
	2. Forward Power Monitor	Logarithmic Detector(0.05V/dB)
	3. VSWR Fail Alarm	TTL HIGH(5V) @ high VSWR VSWR alarm will be activated at a certain ratio between 4 and infinite VSWR. The alarm is not latched signal.
	4. Reflected Power Monitor	Logarithmic Detector(0.05V/dB)
	5. Temperature Monitor	$V_T = 10(\text{mV}) * T_c(^{\circ}\text{C}) + 500(\text{mV})$ , $T_c = \text{Case Temperature} \pm 5^{\circ}\text{C}$
	6. Vcc	
	7. Vcc	
	8. GND	
	9. GND	

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## ENVIRONMENTAL SPECIFICATIONS

Parameter	Specification	Remark
Operating Case Temperature	-30 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	

## MECHANICAL SPECIFICATIONS

Parameter	Specification	Remark
Dimension	145 * 95 * 25 mm	
Weight	Less than 590 g	
RF Input Connector	SMA Female	
RF Output Connector	SMA Female	
I/O Interface Connector	D-Sub 9Pin Male	
Cooling	Adequate Heat-sink required	

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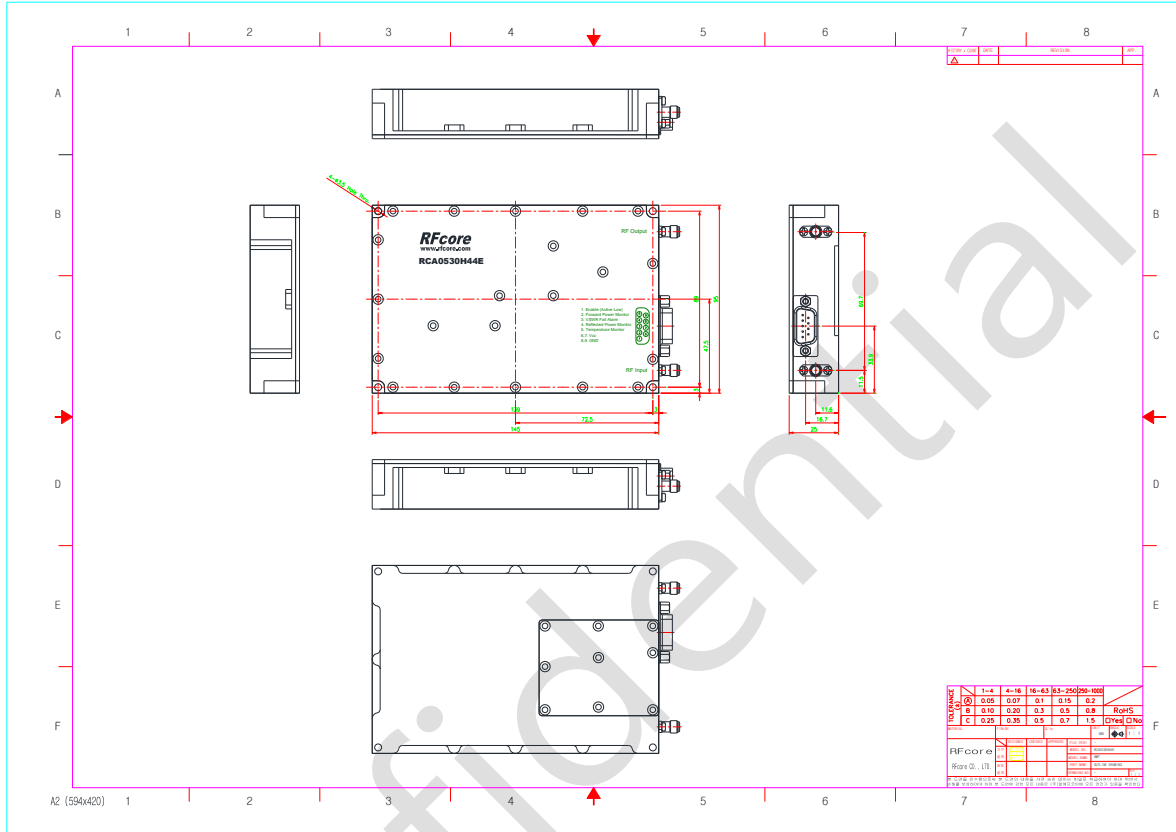
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## MECHANICAL DRAWING



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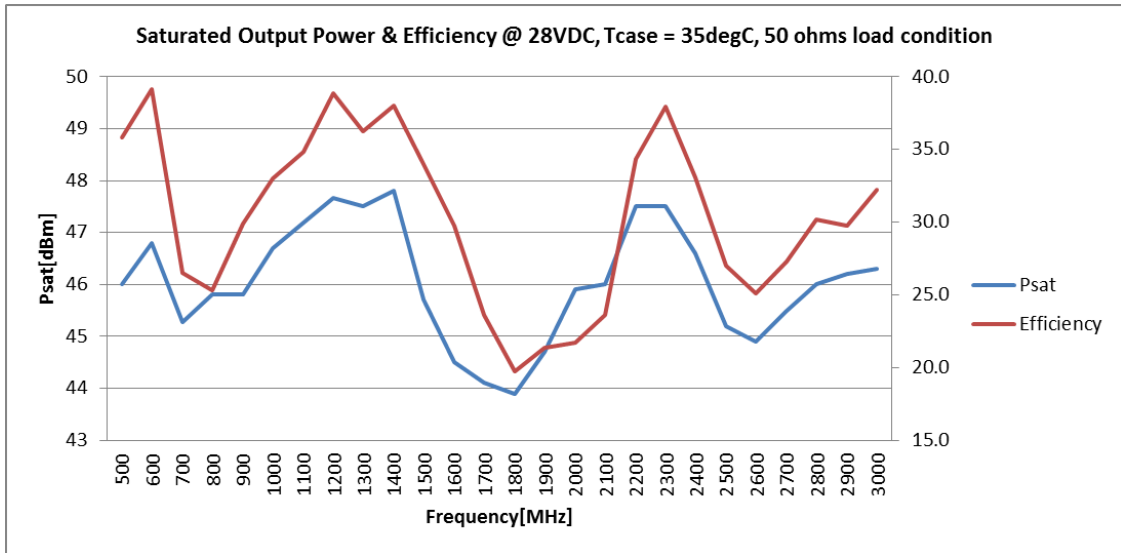
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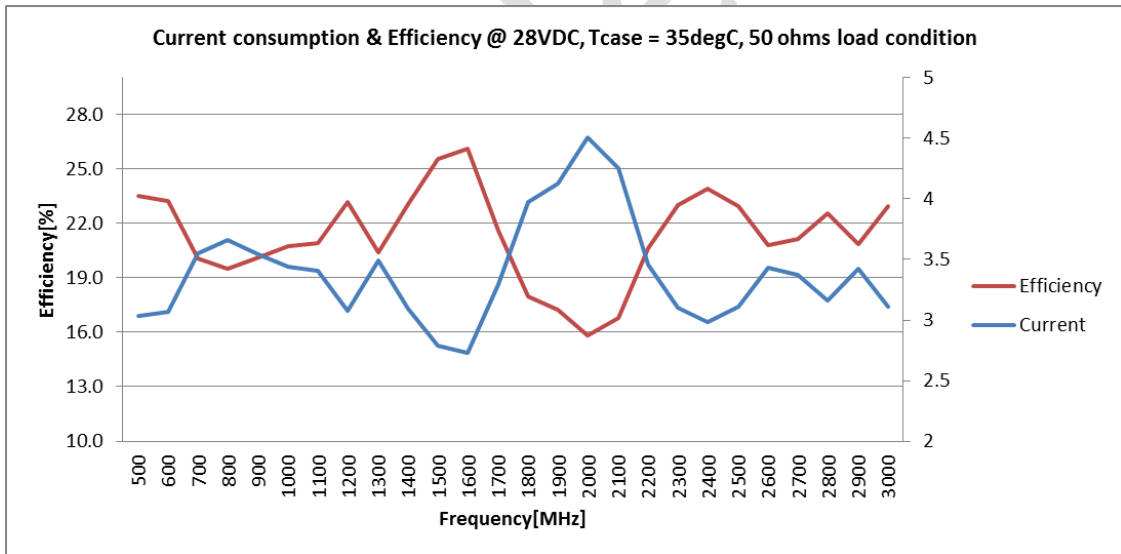
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## RF Performance

### Saturated Output Power



### Efficiency



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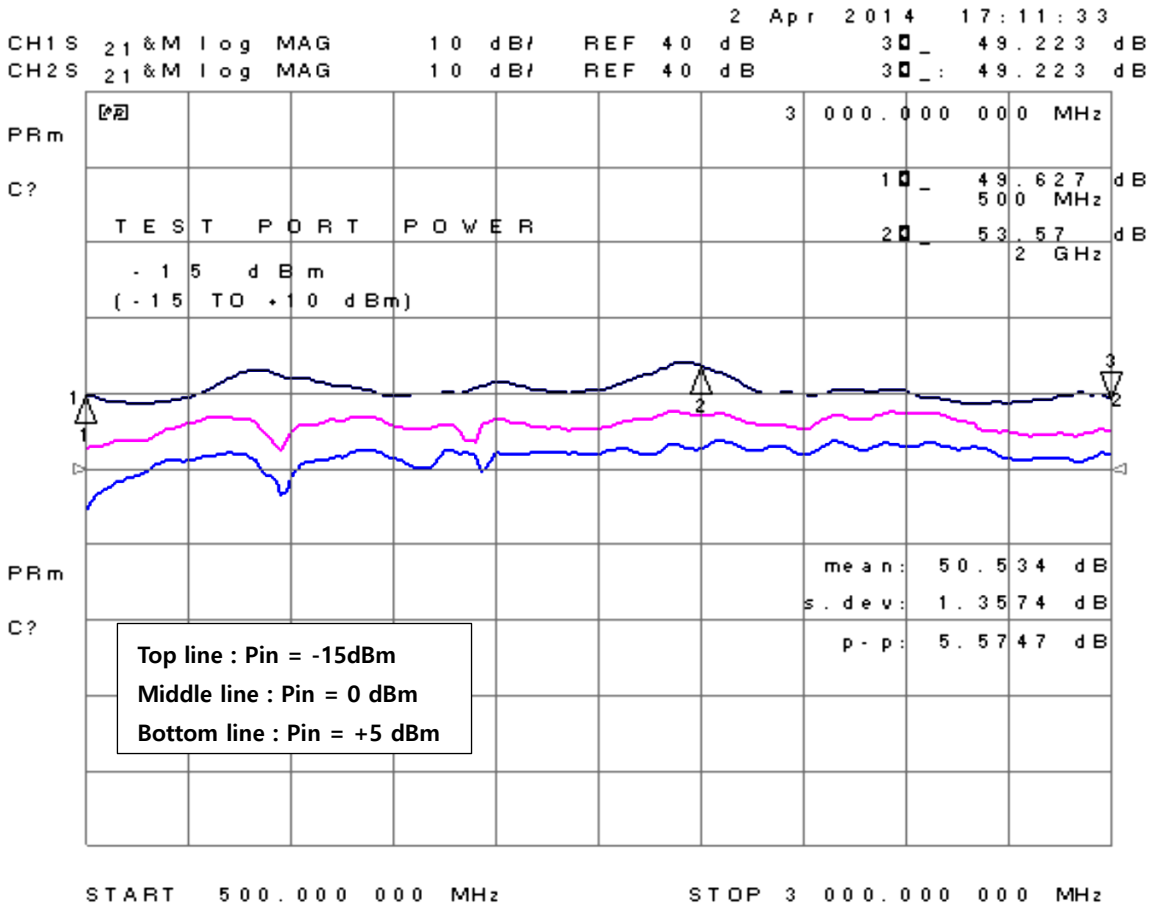
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## Gain and Gain flatness



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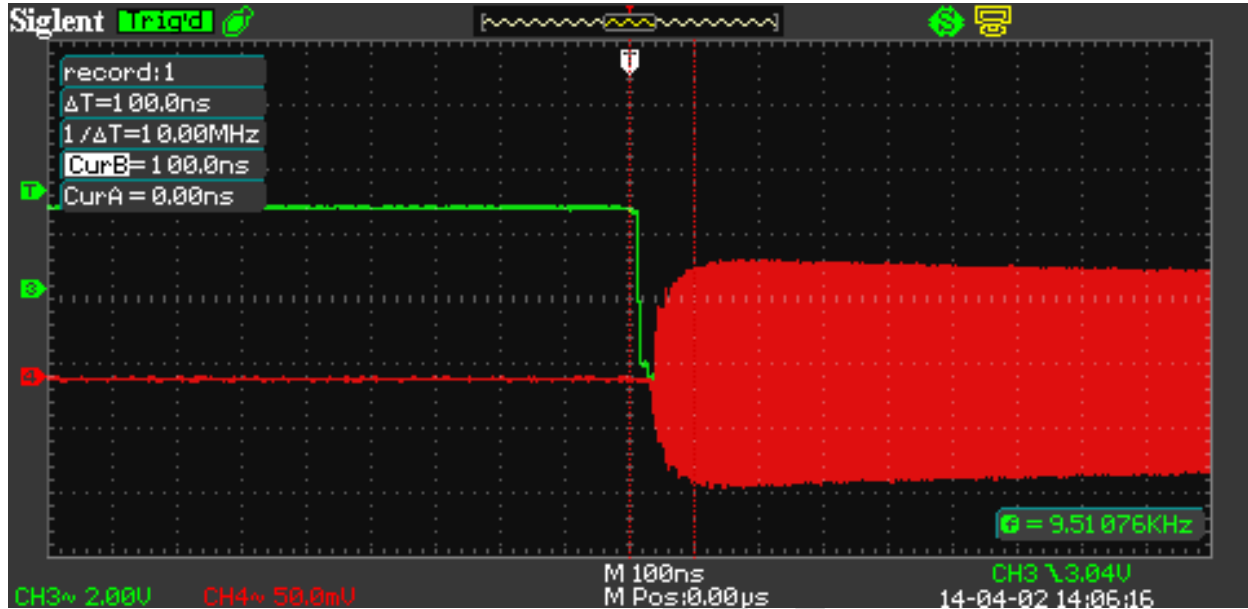
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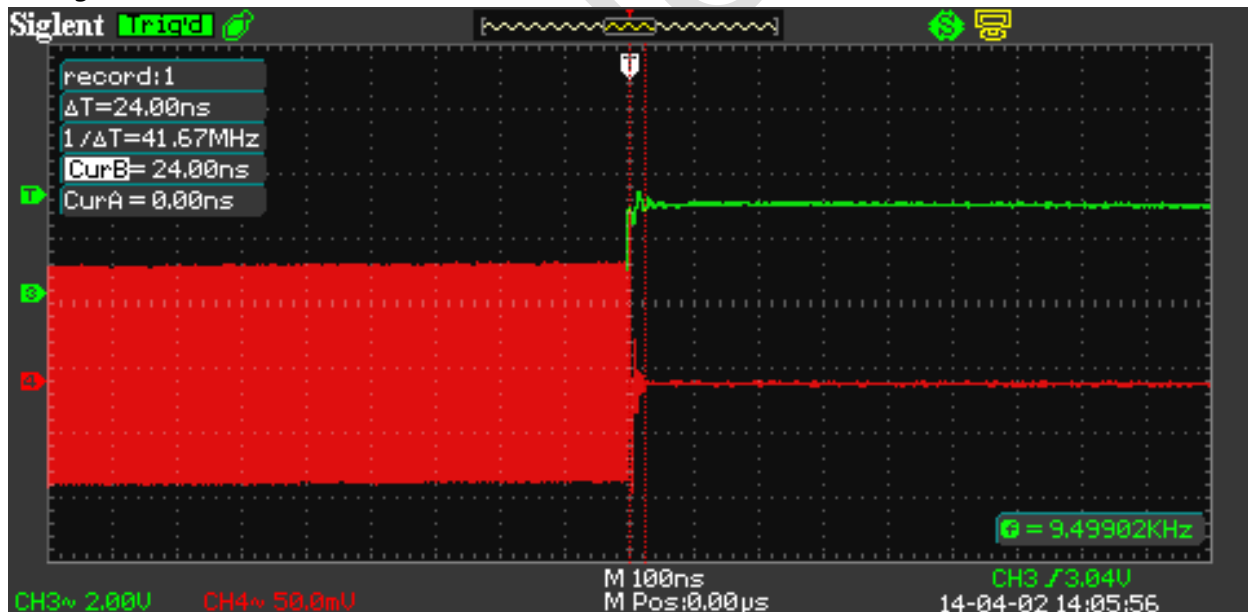
## On/Off Switching Time

Rising Time( $T_r$ ) : 100ns @ 500MHz, PRF 1KHz



Falling Time( $T_f$ ) : 24ns @ 500MHz, PRF 1KHz

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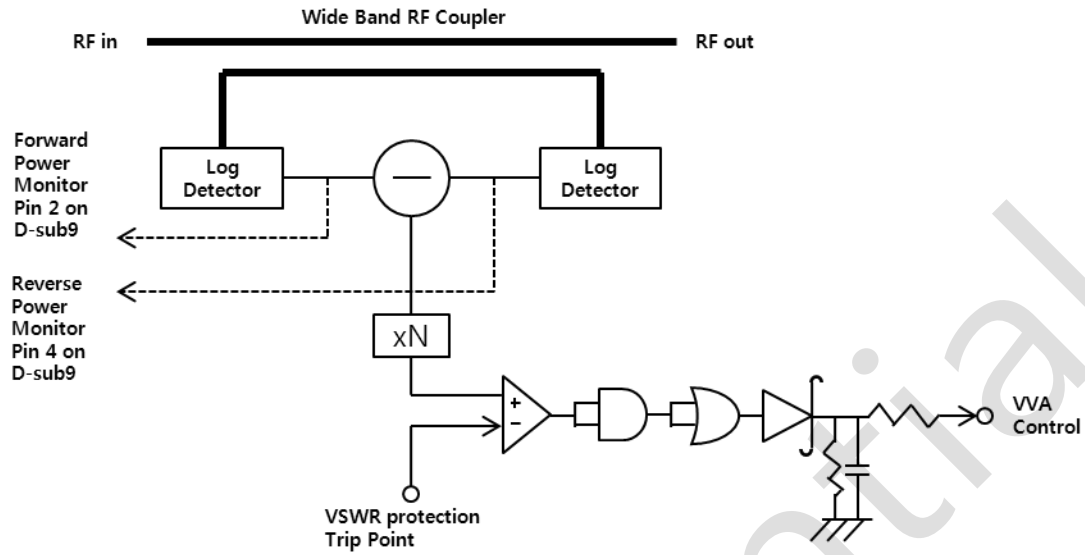
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## VSWR Protection Behavior



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