Broadband High Power Amplifier

Product Name : RCA002053H50J_R1, Code Name :

Doc. Name : General Spec.

RoHs compliant

General Specification
for
RCA002053H50J_R1

Created	Printed	Document Number	Revision	Manufacturer
2016/8/19	2017/6/13		A	RFcore co.,Ltd
File : RCA002053H50J_R1 General Spec.docx				

The Specifications is subject to change before finalization

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ELECTRICAL SPECIFICATIONS	@ 50 Ohms load, 28Vdc, Tc ≒ 35 ℃	
Parameter	**Specification**	**Remark**
Frequency Range	20 ~ 530 MHz	
Saturated Output Power	20-530MHz : 50 dBm min	@ CW, 50 ohm load
Output Power at 1dB Compression Point	46 dBm min.	@ CW
Small Signal Gain	50dB min	@ Input = -15dBm
Large Signal Gain	47dB min.	@ Pout = 100W
Gain Flatness	± 1.5 dB	@ Input = 0dBm
Input Power for no damage on DC ON	10dBm max	@ 50 ohm load
Harmonics Output	2^{nd} , 3^{rd} : 10dBc min 3^{rd}(1500 ~ 1600MHz) : 10dBc min	@ 100W Output
Spurious Signals	70dBc typ, 60dBc min.	
Input VSWR	Less than 1.5 : 1	
Maximum Output Load Condition for survival	10:1 max.(Auto shut-down disable)	Withstand for 20msec
Maximum load VSWR for amplifier working	3.5 : 1	Works with degraded performance
Enable/Daisble Time	Disable -> Enable : 2.0 usec max. Enable -> Disable : 1.0 usec max.	
DC Input Voltage	+28V	Working with degraded performance down to 20V
Current Consumption	8A typ. , 9.0A max	Efficiency > 40% @ 100W @50 Ohm load
RF Input Signal Format	CW, FM, AM, pulse etc.	

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I/O Interface

Parameter	Specification	Remark
I/O Map (Feed Thru)	FL1 Shutdown	TTL Logic "High(3.0~5.0V)" : Amp. Disable TTL Logic "Low" or pin is opened : Amp. Enable (Internally pulled-down)
	FL2 VSWR Fail Alarm	TTL HIGH(5V) VSWR > 5 : 1
	FL3 Temperature Monitor	Vout = 0.5V + (0.01V * T case ℃)
	FL4 N.C	
	FL5 Forward Power Monitor	Logarithmic Detector(0.05V/dB)
	FL6 Reflected Power Monitor	Logarithmic Detector(0.05V/dB)
	FL7 Vdc(+28V)	
	FL8 GND	

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* Internal power detector performance

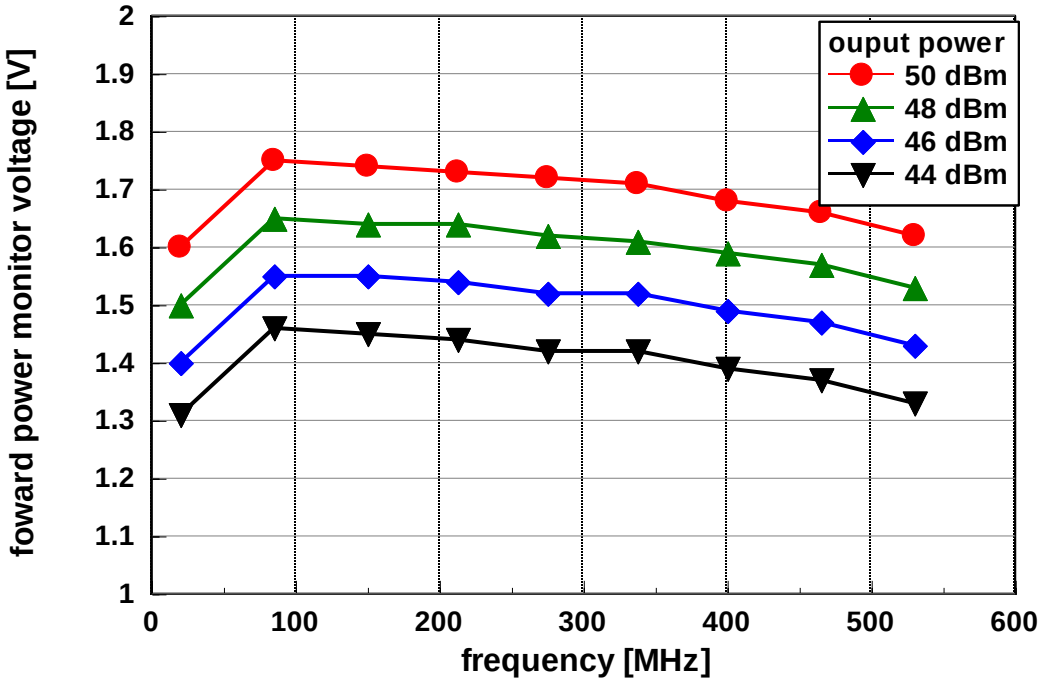

Figure 1. frequeny VS forward power monitor voltage (typical)

Detector voltage = 0.05V/dB

Detector flatness : Typical 3dB. Max 4dB

Detector stability : TBD (has temperature deviation)

ENVIRONMENTAL SPECIFICATIONS	**(Design to meet)**	
Parameter	**Specification**	**Remark**
Operating Case Temperature	-20 ~ +80 ℃	
Storage Temperature	-30 ~ +85 ℃	
Vibration	MIL-STD-810F – Method 514.5 – Proc I Category 13	Airborne
Shock	MIL-STD-810F – Method 516.5 – Proc I	Airborne
Relative Humidity (Non-Condensing)	MIL-STD-810F – Method 507.4	
Altitude	MIL-STD-810F – Method 500.4 – Proc II	

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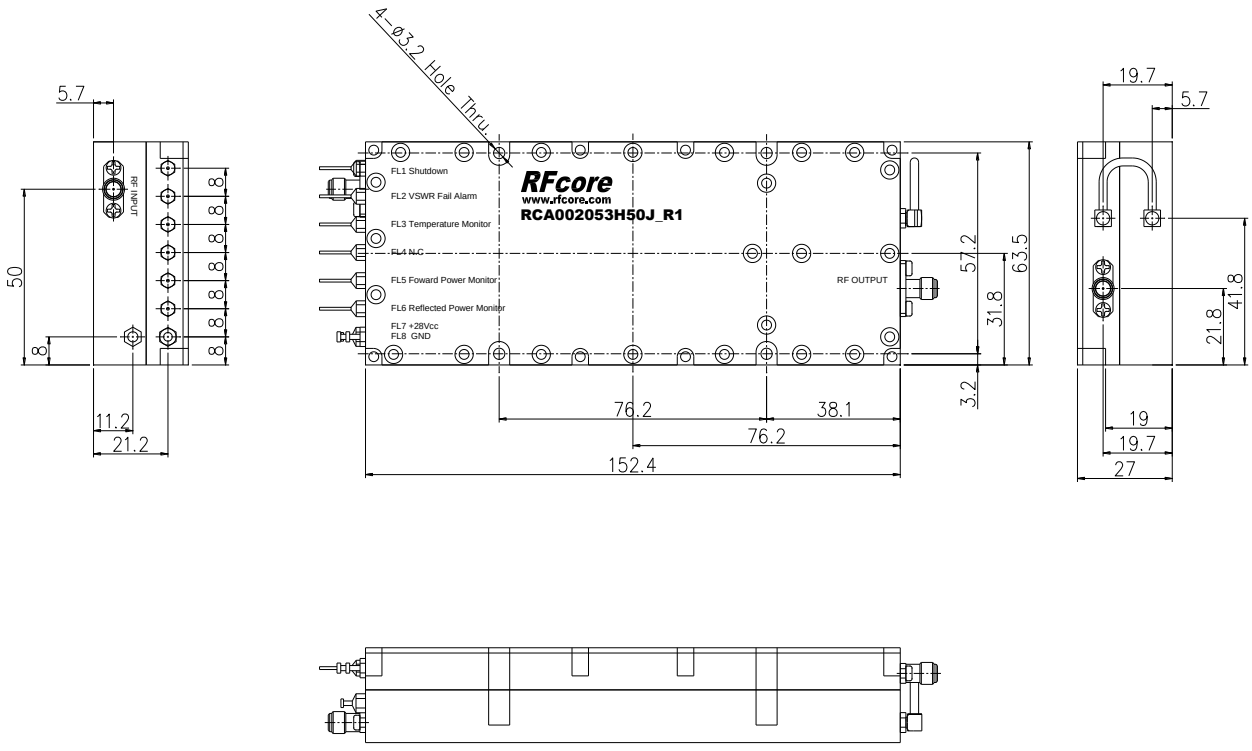
MECHANICAL SPECIFICATIONS

Parameter	Specification	Remark
Dimension	152.4 X 63.5 X 27 mm	
RF Input Connector	SMA – Female	
HPA Output Connector	MCX – Female	
Coupler Input Connector	MCX – Female	
RF Output Connector	SMA – Female	
DC & Interface Connector	Feed Thru	
Cooling	Adequate Heat-sink required	

MECHANICAL DRAWING



※ Note : RFcore supplies the RF cable connecting between the HPA Output and Coupler Input

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