



Solid State High Power Amplifier

20 – 520 MHz, Wide Instantaneous Bandwidth, Built-in protection

Broadband Series: PA1014

FEATURES

Class AB linear LDMOS design
20 – 520 MHz
100 Watt output power
50 dB gain
28 Volt operation
Suitable for all modulations standards

Fully protected – load VSWR, input overdrive,
over/under supply voltage, overcurrent

APPLICATIONS

Broadband jamming
Electronic warfare
EMI / EMC test equipment

Wideband. Agile. Powerful. Compact.

Spectrum management.

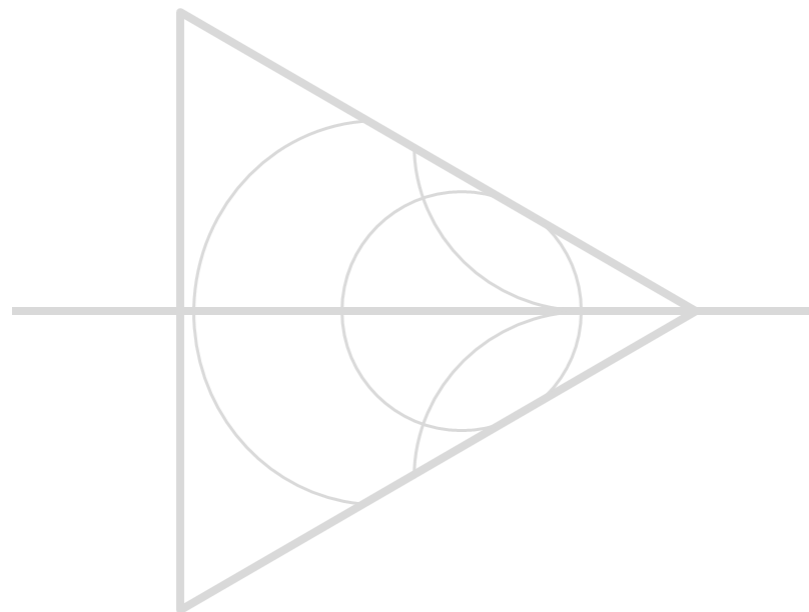
The first task is to get your message through. The second is to prevent the other guy from getting *his* message through. The MtronPTI PA1014 Solid State Power Amp provides a minimum of 100 Watts of CW power across the full bandwidth and less than 3.0 dB_{P-P} gain flatness to meet the needs of broadband spectrum control.

With full power operation from 20.0 MHz to 520 MHz and built in VSWR protection, the PA1014 has 50 dB of gain, perfect for stand-alone, array or TWT driver applications.

MtronPTI's line of Solid State Power Amplifiers is backed by a multi-national design and manufacturing team with more than 150 years combined PA design experience. MtronPTI's continuing focus on client service ensures full program life engineering support from specification to production to next generation architecture planning.

Like all MtronPTI's SSPAs, the PA1014 is also available integrated with power supply, cooling and communications interface as a rack mountable unit for laboratory or fixed location applications.

EA-6B Prowler – U.S. Navy photo by Photographer's Mate 3rd Class Martion S. Fuentes. (RELEASED)



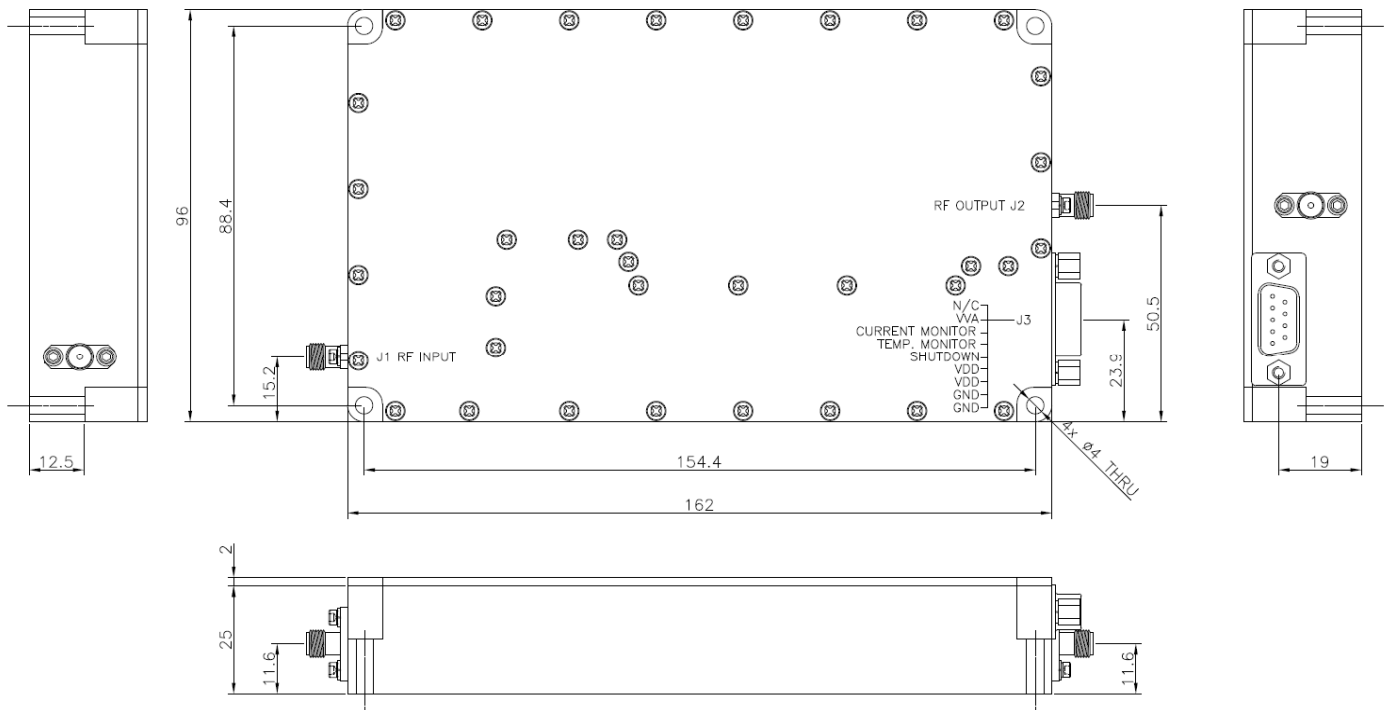
Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Units | Comment |
|------------------------------|----------------|------|--------------|------|-------------------|---|
| PASSBAND | | | | | | |
| Operating Frequency Range | $F_{CARRIER}$ | 20 | | 520 | MHz | CW $A_{RF_MAX} - A_{RF_MIN}$ Within the F_{SIG} bandwidth into 50Ω 40 dBm/tone, $\Delta = 1$ MHz 2_{ND} , at rated P_{OUT} 3_{RD} , at rated P_{OUT} |
| Power Output | P_{OUT_MIN} | 100 | | | Watts | |
| Small Signal Gain | A_{RF_MIN} | 50 | | | dB | |
| Power Gain Flatness | | | | 3.0 | dB _{P-P} | |
| Input Return Loss | RL_{IN} | 10 | | | dB | |
| 2-tone Intermodulation (IMD) | | | -30 | | dBc | |
| Harmonics | | | -25 | | dBc | |
| | | | -15 | | dBc | |
| Non Harmonic Spurious | | | | -60 | dBc | |
| Power | | | | | | |
| Operating Voltage | V_{DD} | 24 | | 30 | V_{DC} | Without damage |
| Current Consumption | I_{DD} | | | 9 | A | |
| Max Input Power | P_{IN_MIN} | | | +8 | dBm | |
| Load VSWR Protection | | | $\infty : 1$ | | | |
| Turn on / Off Speed | | | | 5 | μSec | |

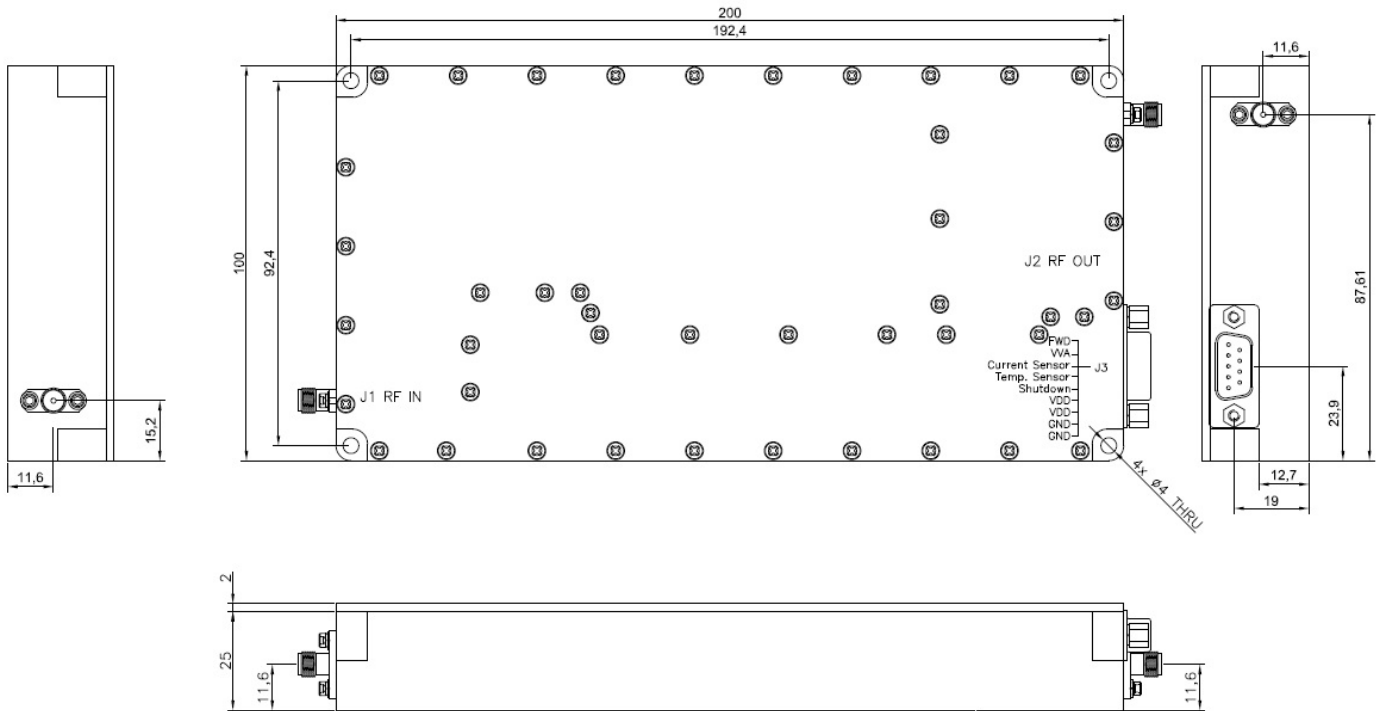
Environmental & Physical

| Parameter | Symbol | Min. | Typ. | Max. | Units | Comment |
|---------------------------------|-----------|------|---|------|-------|----------------------|
| Operating Case Temperature | T_{OC} | -30 | | +75 | °C | |
| Storage Temperature | T_{STR} | -40 | | +85 | °C | |
| Relative Humidity | | 5 | | 95 | % | Non-condensing |
| Dimensions | | | Option – 00 162 x 96 x 27 Option – 01 200 x 100 x 27 | | mm | Excluding connectors |
| Weight | | | | 700 | gr. | |
| RF Connectors IN / OUT | | | SMA female | | | |
| DC Power / Interface Connector | | | 9-pin Hybrid D-Sub | | | |
| Cooling | | | External Heat Sink | | | Forced air required |
| D-Sub Connector Pin Assignments | | | | | | |
| 1 FWD | | | Option 101 – Analog Forward Power Indicator | | | |
| 2 VVA | | | Option 103 – Analog Gain Control | | | |
| 3 Current Sensor | | | $I_D @ 20$ mV / 100 mA typ. | | | |
| 4 Temperature Sensor | | | $V_T @ 10$ mV / °C + 500 mV typ. | | | |
| 5 Shutdown | | | TTL | | | |
| 6, 7 V_{DD} | | | 28 V_{DC} | | | |
| 8, 9 GND | | | Ground | | | |

Case Outline (Standard)



Case Outline (Option 01)



Revision History

| Date | Rev. | Orig. | Details of Revision |
|----------|------|-------|---------------------|
| 20150317 | A | DPD | Initial |

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