

**58 dB Gain High Power High Gain Amplifier at 20 Watt Psat Operating From 6.4 GHz to 7.7 GHz with SMA**

SPA-077-58-10-SMA is a Wideband GaN amplifier that is ideal for linear application including 5 W of Linear COFDM Power for video and UAV/UGV data links. The SPA-077-58-10-SMA can provide over 20 W of analog FM power. The high gain power coaxial amplifier operating in the 6.4 to 7.7 GHz frequency range and high 58 dB typical small signal gain with the gain flatness of  $\pm 2$  dB typical. The driver amplifier requires a +33V DC power supply. The connectorized SMA module is unconditionally stable and includes built-in voltage regulation, bias sequencing, and reverse bias protection for added reliability. The amplifier operates over the temperature range of -10°C and +85°C.



**Electrical Specifications** (TA = +25°C , DC Voltage = 33Volts)

Description	Min	Typ	Max	Unit
Frequency Range	6.4		7.7	GHz
Small Signal Gain		58		dB
Gain Flatness		$\pm 2$		dB
Psat		+43		dBm
Linear COFDM Power Output		+37		dBm
Input Return Loss		-15	-14	dB
Operating DC Voltage	9		33	Volts
Quiescent Current		750		mA
Operating Current at 5 Watts COFDM		2,300		mA
Operating Temperature Range	-10		+85	°C

**Protections**

Protections	
Description	Value
Max RF Input	+10 dBm
Load VSWR @ 20 Watts	$\infty$ at all amplitudes / phase angles
Thermal Shutdown	Unit will shut down if case temperature exceeds +85°C, will automatically turn back on when case temperature falls ~ 10°C from shutdown.
Over Voltage	Unit will shut down if input voltage exceeds +33 VDC
Under Voltage	Unit requires a minimum of +9 VDC to enable. Unit will also shut down if VDC falls below +9 V during operation.
True Reverse	Unit will not enable and the unit will not draw current if +VDC and Ground are reversed <sup>3</sup>

**Features:**

- 6.4 GHz to 7.7 GHz Frequency Range
- Psat 20 W Typ
- Linear COFDM Power Output 5 W
- Small Signal Gain: 58 dB min
- Gain Flatness:  $\pm 2$  typical
- 50 Ohms Input and Output Matched
- Unconditionally Stable
- Regulated Supply & Bias Sequencing
- Overvoltage Protection
- Thermal Protection

**Applications:**

- COFDM Video
- Analog FM Communications
- UAV/UGV Data Link
- L-band Military Radar
- Communication Systems
- High Gain Driver Power Amplifier
- High Gain Output Power Amplifier

**Configuration**

- Connector 1 SMA Female
- Connector 2 SMA Female

**Environmental Specifications**

**Temperature**

- Operating Range -10 to +85 deg C
- Storage Range -55 to +100 deg C

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Humidity	95
Shock	MIL-STD-810F Method 516.5
Vibration	MIL-STD-810F Method 516.5
Altitude	MIL-STD-810F Method 500.4

**Compliance Certifications** (visit [www.FairviewMicrowave.com](http://www.FairviewMicrowave.com) for current document)

**Plotted and Other Data**

Notes:

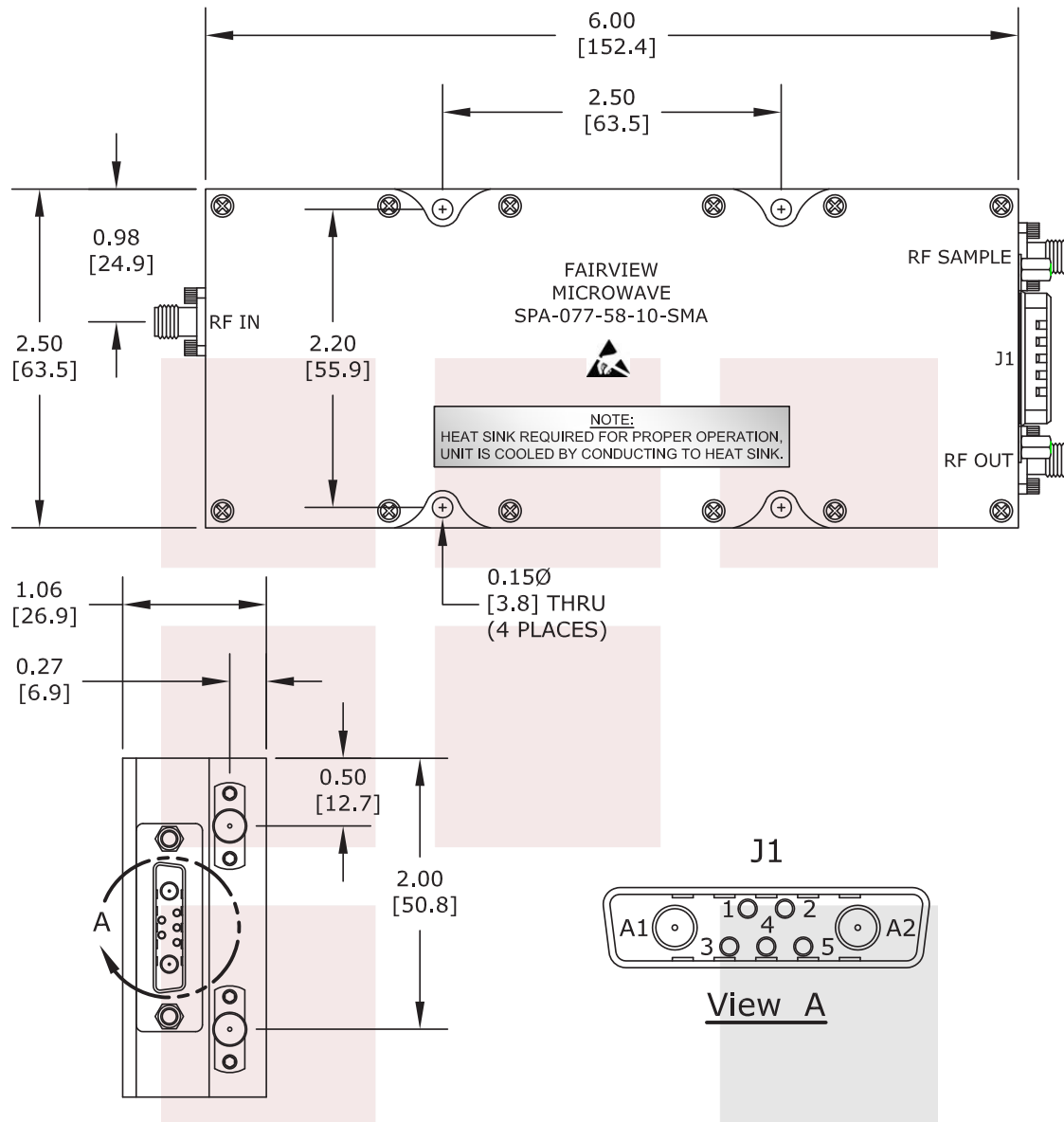
- Values at 25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
- Heat Sink Required for Proper Operation, Unit is cooled by conduction to heat sink.

58 dB Gain High Power High Gain Amplifier at 20 Watt Psat Operating From 6.4 GHz to 7.7 GHz with SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [58 dB Gain High Power High Gain Amplifier at 20 Watt Psat Operating From 6.4 GHz to 7.7 GHz with SMA SPA-077-58-10-SMA](#)

URL: <http://www.fairviewmicrowave.com/58db-high-power-high-gain-amplifier-20watt-spa-077-58-10-sma-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.



PIN	DESCRIPTION	SPECIFICATION
A1	Ground	VDC Ground
A2	+VDC	+9 to +33 VDC
1	Temperature Sensor	.75V at +25°C, 1V at +50°C, 1.25V at +75° (±0.05V)
2	Amplifier Enable	Enable: +5V TTL High, Disable: 0V TTL Low (±5.5V Max)
3	Reverse Power Detection	+2.5V @ +35 dBm in Open Condition
4	Ground	VDC Ground
5	Forward Power Detection	+2.5V @ +35 dBm

NOTE:  
HEAT SINK REQUIRED FOR PROPER OPERATION,  
UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

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NOTES:  
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.  
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.  
3. DIMENSIONS ARE IN INCHES [mm].

TITLE  
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DWG NO SPA-077-58-10-SMA CAGE CODE 3FKR5

CAD FILE 110614 SHEET SCALE N/A SIZE A 2233