Powered by Polarity®

A Global Leader in Power Solutions

Industrial | Satellite | Military | Commercial | Scientific
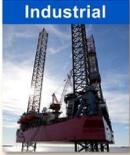
AS 9100:2009 REV C

250 Watt QV Band Outdoor TWTA

High Bandwidth Communication HPA
Ideally suited for demanding performance in next generation high bandwidth satellite uplinks. Meeting international standards for safety and EMI/EMC.

RF Performance

- *Frequency: 47GHz to 52GHz*
- *RF Output Power: 250Wpk*
- *Gain: 60dBm*
- *Temperature range: -40C to +60C*

Built-in protection

- *3us electronic crowbar*
- *Output arc detector*
- *Input/output isolator*
- *Reverse power detection/c'bar*

Additional Options

- *BUC/Linearizer*
- *Custom packaging*
- *High speed modulator*
- *Liquid/Conduction cooled*

Guaranteed Reliability

- *Military proven high viscosity coatings for dust and humidity control.*
- *Critical component designs have accumulated more than 1 million hours of operation.*
- *Data logging and analysis for cost effective maintenance.*

The POL250-QV amplifier is specifically designed to meet multicarrier operation in demanding outdoor satellite communication applications for antenna mount operation. Polarity offers models suited for all major satellite bands. All models can include a BUC/linearizer and are further optimized for low noise and efficient operation at rated linear power levels. Harmonic filtering is built-in.

Outstanding thermal design ensures reliable operation to ambient temperatures of +60deg C. The POL250-QV offers a design with industry leading reliability and its power supply design ensures rugged performance that is unmatched.

High efficiency modern user multi-collector designs meet the demands of today's complex systems and offer the ability to effectively power manage the overall network as well as the increasingly challenging requirements for mobile systems.

Optional features are 1:1 redundancy and 1:2 redundancy with associated switch control. Higher power can be provided through optional phase combining systems. Each amplifier has allocated internal space for integrated block up converter modules that are tailored for specific bands. Upconverters can also be provided that operate stand alone or lock to an external system reference. A rich control protocol provides serial RS232/422/485, Ethernet, and advanced user friendly communication to provide data logging for cost effective maintenance.

Industry Leading Performance — Affordable — Proven Reliability

Performance Specifications :

Electrical

Frequency Band	47 - 52GHz
Output Power	
TWT	250W (54.0dBm) peak
	100W linear power: linearizer included
Gain	60dB (min)
Gain variation	2.5 dB p-p (any 1.25 GHz BW)
	0.8 dB per 60MHz
Gain Slope	+/- 0.04dB/MHz max
Gain Stability 24hr	+/- 0.25dB
Attenuator Range	30 dB
Attenuator Step Size	0.1dB
Input VSWR	1.3:1 max
Output VSWR	1.3:1 max
Harmonic Output	-60dBc max
Group Delay (max)	
in 60MHz band	
Ripple	0.5 nsec p-p
Linear	0.01 nsec/MHz
Parabolic	0.005 nsec/MHz^2
Noise Power	
Transmit Band	-75dBW/4 kHz max
Receive Band	-150dBW /4 kHz max
Residual AM Noise (max)	-50dBc below 10kHz
	-20(1.5+log(f)) dBc 10 kHz to 500kHz
	-85dBc above 500kHz
Spurious (max)	-60dBc at linear power (in band)
Phase Noise (max)	12dB below IESS
	-50dBc max AC fundamental
-	-47dBc max sum of all spurs
Line Input	100-240VAC +/- 10%
	47-63Hz
Power Factor	0.95 (min)

Environmental

Operating Temperature	-40 deg C to +60deg C
	-40 deg C o +50 deg C, direct sunlight
Non-Operating	50 deg C to +75 deg C
Relative Humidity	100% condensing
Altitude	
Operating	10,000 ft with 2 deg C/ 1000ft
	derating above sea level
Non-Operating	50,000 ft
Shock	30 g peak , 11 msec , ½ sine
Vibration	2.1 grms , 5Hz to 500Hz
Acoustic Noise	65 dBA , 3 ft from amplifier
Thermal	Forced Air cooling

Mechanical

RF Input	2.4mm
RF Output	WR-19
RF Output Monitors	2.4mm , female
	50dB coupling (nom)
Dimensions (W x H x L)	15.25" x 8" x 8"
Weight	32 lb
Mounting Brackets	Side mount fasteners

Interface

Remote	RS-232 /422/485
	Ethernet
	USB
Local Control	HV on, reset, local or remote select
Status	Pwr on, Standby, HV on, Fault, Mode