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Ka-BAND Solid State Power Amplifier (SSPA)

Ed.04

ACSSPA-Ka Power Series (2,4,10 w)

10/01/07

DESCRIPTION

ACSSPA-Ka series are a family of Solid State Power Amplifiers, designed for Ka-band satellite communication systems. ACSSPA-Ka series have been tested and calibrated between -20º and +55ºC, so they assure very good gain stability with temperature. They also include temperature alarm and power supply shutdown to protect the amplifier from permanent damages when temperature exceeds 80ºC.

TRANSMITTER SPECIFICATIONS

Input frequency ..... 29.0 to 31 GHz (See options)
Input impedance ..... 50 Ohms
Input band VSWR ..... <1.5:1
Output frequency ..... 29.0 to 31.0 GHz (See options)
Output impedance ..... 50 Ohms
Output Ka-band VSWR ..... <1.5:1

Transmit Characteristics @25ºC	P1dB	Gain	Power Consumption	Size (LxWxH)	Weight
ACSSPA-Ka2W	33.0 dBm	33 dB min	30 W @ P1dB	160x80x55 mm	1.5 Kg
ACSSPA-Ka4W	36.0 dBm	37 dB min	45 W @ P1dB	160x80x55 mm	1.5 Kg
ACSSPA-Ka10W	40.0 dBm	40 dB min	195 W @ P1dB	180x130x100 mm	5 Kg

Note: ACSSPA-Ka10W is under development

Maximum input level without damage ..... +10 dBm
Gain flatness over the whole bandwith ..... ± 1 dB BW=500 MHz
± 1.5 dB BW=1 GHz
Gain flatness over 40 MHz ..... ± 0.5 dB
Gain variation over temperature ..... ± 1.5 dB over the whole range (-20 to +55ºC)
± 2 dB over the whole range (-40 to +55ºC)
Noise figure ..... ≤ 15 dB
Spurious/Non Harmonics ..... ≤ -60 dBc
2nd Harmonic ..... ≤ -45 dBc
3rd Order IMD ..... ≤ -20 dBc for 2 tones Δf=5 Mhz for P_{OUT}=P1dB-4.5 dB

POWER SUPPLY

DC input voltage ..... 18-36 VDC (*1)

(*1) DC supply 48 VDC could be selected as an option.

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ENVIRONMENTAL SPECIFICATIONS

Storage temperature	-40 to +80ºC
Operating temperature	-20 to +55ºC (*2) (*3)
Relative humidity	up to 100%
Operating altitude	up to 3500 m

(*2) Operating temperature -40ºC to 55ºC could be selected as option.
(*3) Protection against high temperature conditions.

MECHANICAL SPECIFICATIONS

Interfaces	TX input : WR28 (*4) TX output : WR28 DC Power : MS3112E12-3P Monitoring & Control : MS3112E12-14S
Cooling system (2W&4W)	Heatsink
Cooling system (10W)	Heatsink with forced-air integrated
Finish	White

(*4) Type K connector (F) 50 ohm could be selected as option.

OPTIONS

Frequency band:	Model Number
29.0 to 29.5 GHz	ACSSPA-Kaxx-E1-xxx
29.5 to 30.0 GHz	ACSSPA-Kaxx-E2-xxx
30.0 to 30.5 GHz	ACSSPA-Kaxx-E3-xxx
30.5 to 31.0 GHz	ACSSPA-Kaxx-E4-xxx
29.0 to 30.0 GHz	ACSSPA-Kaxx-E5-xxx
30.0 to 31.0 GHz	ACSSPA-Kaxx-E6-xxx

MP1:	Operating temperature (-40 to +55ºC)
MP2:	Type K(F) 50 ohm TX input connector
MP3:	Power supply 48 VDC
MPC:	Custom design

PART NUMBER CONFIGURATION

EXAMPLE 1: A standalone 2 watt Solid State Power Amplifier with an optional Operating temperature range (-40 to +55ºC) and frequency range 30.0 to 31.0 GHz:

ACSSPA-Ka2W-E6-MP1

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