COAXIAL, BUILT-IN RF SWITCH

High Power Amplifier

ZHL-20W-13SW+
ZHL-20W-13SWX+

50Ω 20W 20 to 1000 MHz

FEATURES

- High power, 20 Watt
- Protected against overheat - shuts off automatically at about +100°C case temperature
- Protected against over voltage - shuts off automatically at about +29V(excluding fan)
- Excellent gain flatness, ±1.2 dB typ.
- RF built-in switch with TTL/CMOS control
- Class A amplifier
- Protected by US patent 7,348,854

Generic photo used for illustration purposes only

Model No.	ZHL-20W-13SW+	ZHL-20W-13SWX+▲
Option	With heatsink & fan	Without heatsink & fan
Case Style	CP1683	
Connectors	SMA	

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- VHF/UHF transmitters
- Defense
- Amateur radio, FM, TV

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Condition (MHz)	ZHL-20W-13SW+ / ZHL-20W-13SWX+▲ Min.	Typ.	Max.	Units
Frequency range		20		1000	MHz
Gain	20-1000	46	50	55	dB
Gain Flatness	20-1000	—	—	±1.8	dB
Output Power at 1dB compression	20-1000	39	41	—	dBm
Output Power at 3dB compression	20-1000	40	43	—	dBm
Noise Figure	20-1000	—	3.5	—	dB
Output third order intercept point	20-1000	—	50	—	dBm
Input VSWR	20-1000	—	1.7	—	:1
Output VSWR	20-1000	—	2.5	—	:1
DC Supply Voltage		—	24*	—	V
Supply Current		—	—	2.8	A
SW Low (V_{IL}), RF ON		—	—	0.5	V
SW High (V_{IH}), RF OFF		2.7	5.0	—	V
SW Current		—	5	—	µA
Rise Time (SW ON to 90% RF)		—	—	50	µsec
Fall Time (SW OFF to 10% RF)		—	—	5	µsec

*Recommended Operating Voltage.

▲ Heat sink and fan not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 85°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 0.3°C/W max.

MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-20°C to 65°C
Storage Temperature	-55°C to 100°C
Base Plate Temperature	85°C
DC Voltage	28V
SW Voltage	10V
Input RF Power[1] (no damage)	-3dBm

Permanent damage may occur if any of these limits are exceeded.
1. At nominal 50 Ohms RF load. Amplifier can withstand a full mismatch (short or open) across all phases at RF output, if the input RF power does not exceed -13dBm. Maximum RF input power is defined as a peak envelope power (PEP). See the application note AN-60-037 for PEP calculation.

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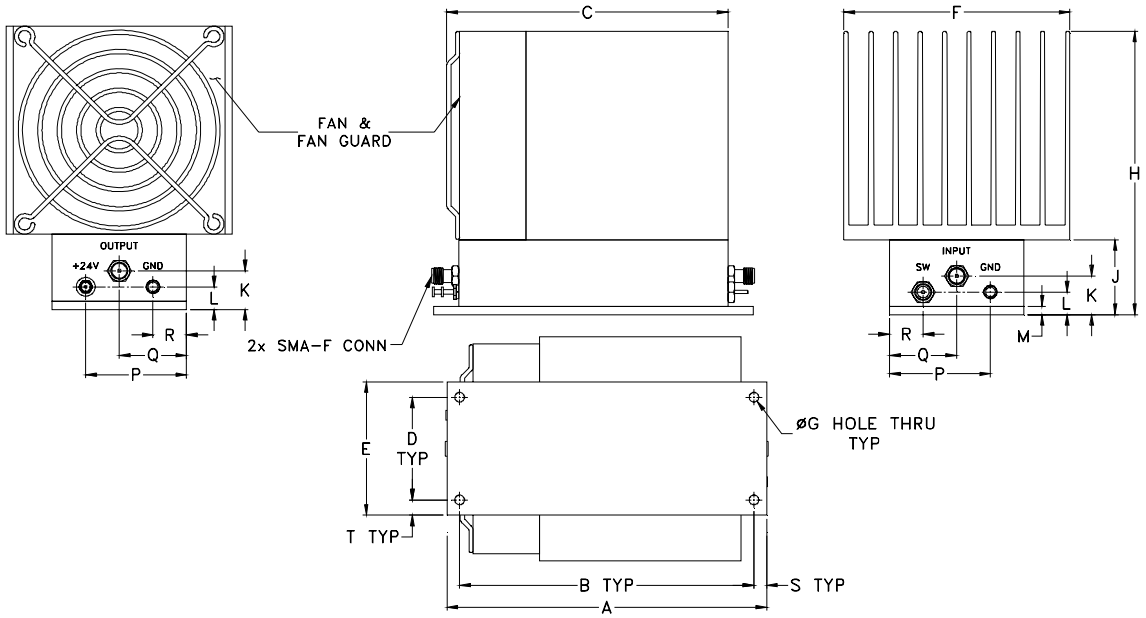
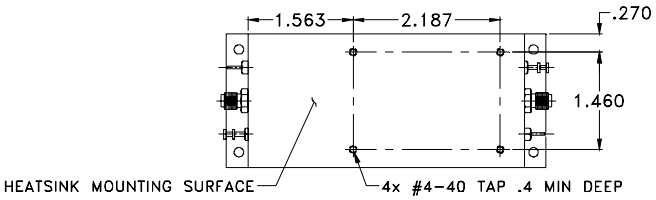
OUTLINE DRAWING FOR MODELS WITH HEATSINK AND FAN (ZHL-20W-13SW+)



OUTLINE DRAWING FOR MODELS WITHOUT HEATSINK AND FAN (ZHL-20W-13SWX+)



OUTLINE DIMENSIONS (MM/INCH)

A	B	C	D	E	F	G	H	J	K	L	M	P	Q	R	S	T	wt
4.75	4.375	4.18	1.540	2.00	3.36	.144	4.25	1.12	0.58	0.34	.13	1.50	1.00	.50	.19	.23	grams*
120.65	111.13	106.17	39.12	50.80	85.34	3.66	107.95	28.45	14.73	8.636	3.30	38.10	25.40	12.70	4.83	5.84	750

*290 grams without heatsink