

Description

The Model ILA1026 is designed for WCDMA & LTE applications in 2110-2180MHz frequency band. This amplifier consists of a Doherty design using LDMOS power devices and Analog Predistortion linearization technique to provide excellent efficiency and linearity characteristics. Inspower's high quality design technology makes the amplifier extremely stable within overall environmental temperature range.

Product Features

- Operating Frequency : 2110-2180MHz
- Bandwidth : 70MHz
- Pout : +35.5dBm
- Feed-forward Linearization
- Application : Multi-Carrier UMTS, AWS 3 band Repeater, DAS

Electrical Specifications

Parameters		Specifications	Remark	
Operating Frequency		2110 ~2180MHz		
Output Power (Linear)		+35.5dBm Min		
Small Signal Gain		42dB Min, 43dB Typ, 44dB Max		
Small Signal Gain Flatness		1dBp-p Max	Over temperature	
Gain Variation Over operation Temp		±1 dB		
IMD3 & IMD5 product level @Pout Per Tone=27dBm to 32.5dBm		-15dBm	2MHz spacing	
IMD3 & IMD5 product level of -15dBm @ 35.5dBm Pout composite vs. Tone spacing		2MHz Min , 70MHz Max	Any frequency location for 2tone 2MHz spacing. Any 2 tone spacing 2-70MHz around band center.	
Spurious emission		-20dBm Max		
WCDMA(HSPA+) @35.5dBm output	EVM	3%	Test Model-1 with 64DPCH, One Carrier, PAR=10.2dB@ 0.01% Probability on CCDF	
	Frequency Error	±0.01ppm		
	Spectrum Emission Mask	Per ETSI TS 25.106. Category B.		
	ACPR	Per ETSI TS 125 106 V10.2.0 (2012-07)		
LTE @ 35.5dBm output	EVM	2%	Test Model: E.T.M 3.1 Down Link Test EVM and SEM for 1.4 & 10MHz BW located at center, right edge and left edge of band.	
	Frequency Error	±0.01ppm		
	Spectrum Emission Mask	Per ETSI TS 136 106 V11.1.0 (2013-02) Category B, Option 2.		
CDMA2000 @ 35.5dBm output	EVM	3%		
	RHO	0.996		
	ACPR CDMA 1FA 64 channel	±885KHz	-45dBc	@30 KHz RBW, 100Hz VBW
		±1.98MHz	-55dBc	@30 KHz RBW, 100Hz VBW
±2.25MHz		-13dBm	@1MHz RBW, 100Hz VBW	

ILA1026

2110-2180MHz 35.5dBm UMTS Band Power Amplifier

Parameters	Specifications	Remark
2 nd Harmonic	-40dBc	
Input / Output VSWR	1.2:1Typ, 1.5:1Max	
Operating Voltage	+28V	+27V Min, +30V Max
Supply Current @ Pout = 35.5dBm / 1CW	1.4A Max	

Mechanical Specifications

Parameter	Specifications	Remark
Dimensions (L x W x H)	130 * 120 * 25 mm	
Weight	0.65kg	
RF Connectors In/Out	SMA – Female	
Monitoring / DC Connectors	D-sub, 9 Pins, 4 – 40 screw	
Cooling	External Heat sink (not included)	

Environmental Characteristics

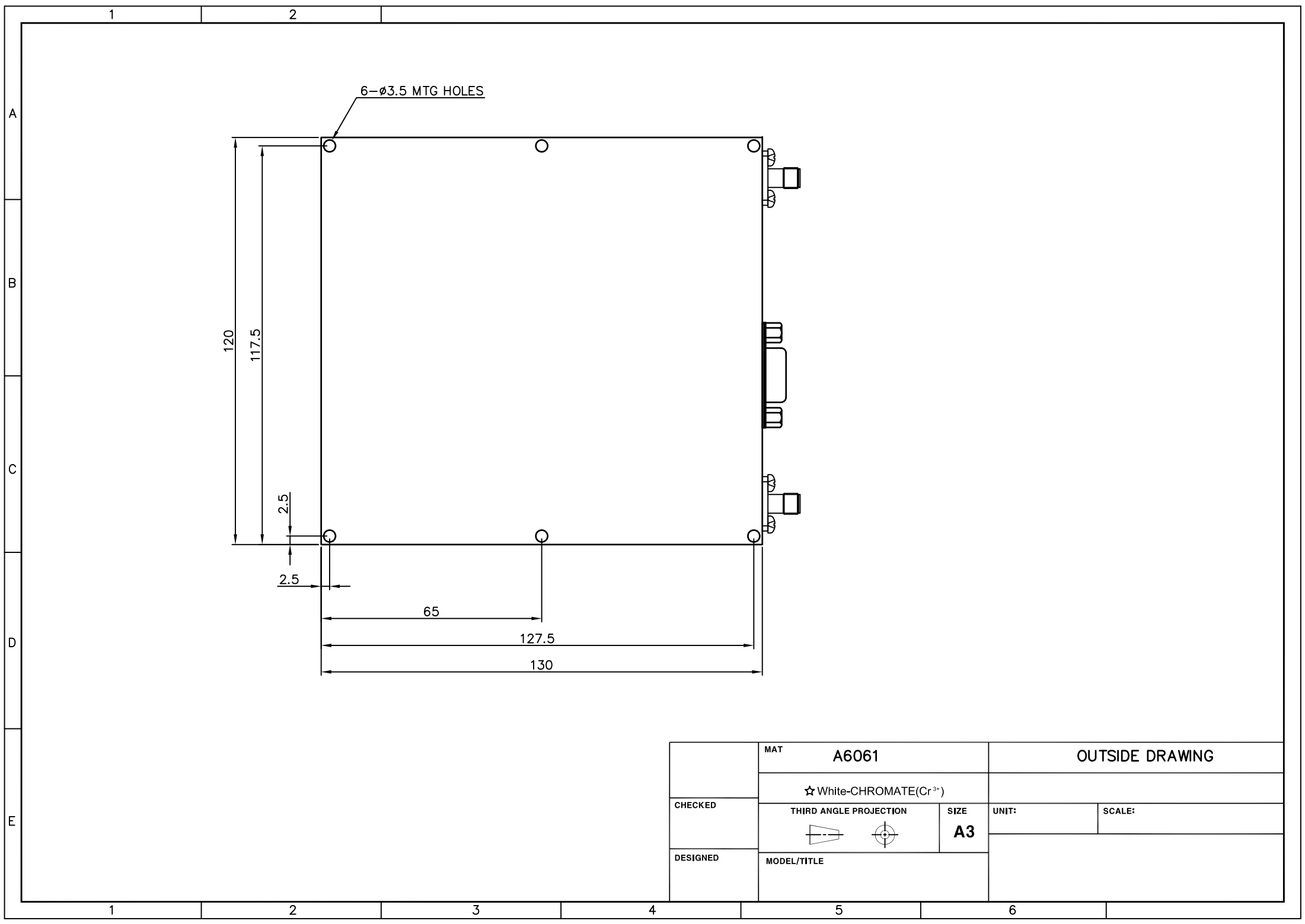
Parameters	Specifications	Remark
Case Temperature for operating without damage	-40°C to +85°C	
Case Temperature for operating with full performance	-30°C to +80°C	
Storage Temperature	-40 ~ +85°C	
Relative humidity w/o condensation	95%	
MTBF	220000Hr (25years)	

Protection

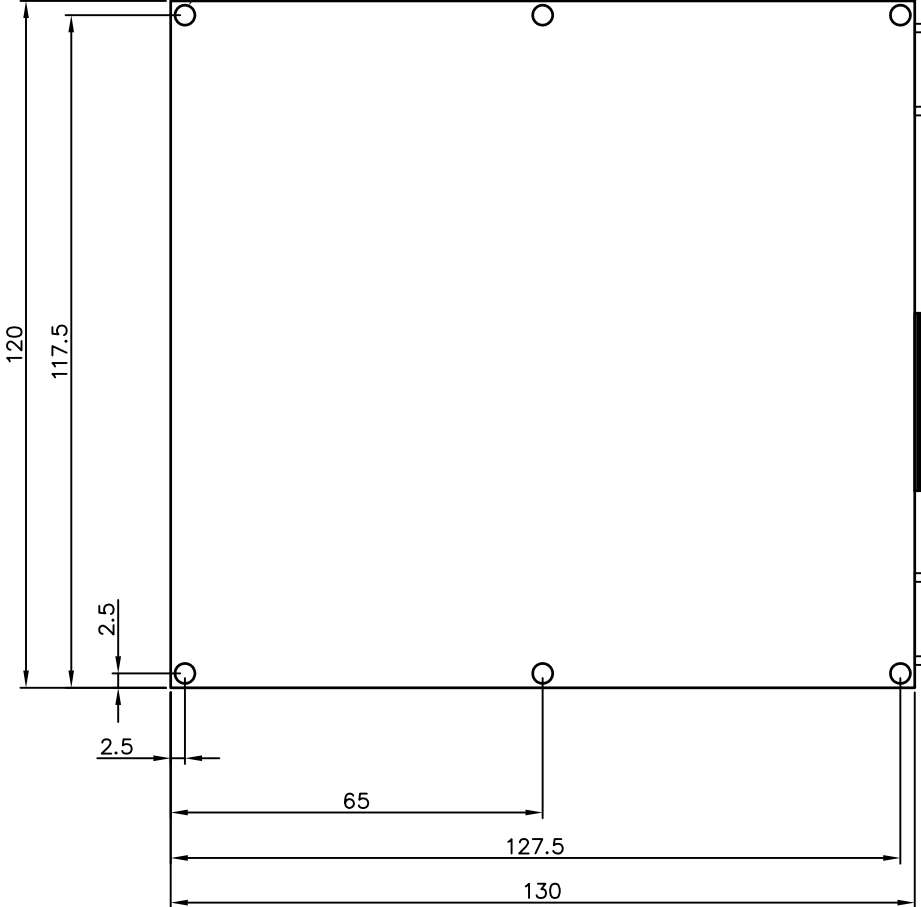
Item	Specifications for Activation	Remark
Over Power Shutdown	40dBm min – 41dBm max	Recovery by toggling the Enable pin. PA will Shut down after max 4 Sec from Over Power event
VSWR Auto-Shutdown/Recover	2.32:1 Max (R.L = 8dB)	VSWR Alarm will remain "High" till recovery by toggling Enable pin.
VSWR Auto-Shutdown Threshold	20dBm min	VSWR Auto-Shutdown shall work from output power of 20dBm and above. The feature disabled below this value. PA will Shut down after max 5 Sec from VSWR Alarm event.
Over Temp Alarm	80°C±2	Alarm only, At Thermal Overload, The Alarm remains on till Auto Recovery or toggling the Enable pin.
Thermal Overload	85°C±2 shutdown & 75°C Auto-recover	75°C Auto-recover

I/O Interface (D-sub 9pin Female)

Pin No	Pin Description	Specifications	Remark
1	+28V DC Input		
2	GND		
3	Enable : Low Disable : High or Open	Enable : TTL "0" = 0V Disable : TTL/COMS "1" = 3.3-5V High or Open	
4	VSWR Alarm	Alarm "High" at VSWR event	
5	Forward Power Detector	4.0V@ 33dBm CW 1FA, 100mv/dB	
6	+28V DC Input	See pin 1	
7	GND		
8	PA Shut Down Indicator	Alarm "High" PA Shut Down	Open Drain
9	Over Temperature Alarm	Alarm "High" at Over temperature event – Measured on PA case.	



6-ø3.5 MTG HOLES



	MAT	A6061		OUTSIDE DRAWING	
		☆ White-CHROMATE(Cr ³⁺)			
CHECKED		THIRD ANGLE PROJECTION	SIZE	UNIT:	SCALE:
			A3		
DESIGNED		MODEL/TITLE			