

## AOM Driver 3307 Series

1 to 4 Watt RF Drivers for Acousto-Optic Modulators

The 3307 Series RF driver provides up to 4 Watts output power. Various types cover a frequency range of 80 to 350 MHz. The maximum RF output power is adjustable by an internal potentiometer. The driver is available in either analogue or digital modulation control. The analogue modulation voltage controls the output power from 0 to 100% of the adjusted maximum power. The digital modulation control signal can switch on and off the RF power. The driver can be operated with modulation frequencies (analogue and digital) up to 25% of the carrier frequency and 50 MHz maximum at the higher carrier frequencies. Optimum EMC shielding and mechanical protection is achieved by an aluminium casing. The base plate serves for mounting and heat dissipation purposes. Many options are available with this driver including frequency tuning, automatic level control (ALC) and an external amplifier that can boost output power up to 20 Watts.

### Key Features:

- Frequency range 80 to 350 MHz
- RF output power up to 4 Watt
- RF on/off ratio <sup>3</sup> 35 dB (Digital Modulation)
- RF on/off ratio <sup>3</sup> 35 dB (Analogue

### Modulation)

- Constant output power design
- Models with a modulation frequency up to 50 MHz available
- Conductive cooling through base plate
- Compact casing

### Applications:

- Fast modulation components for extra cavity applications, e. g. laser projection systems
- Frequency shifting



<b>Supply Voltage</b>	<b>+24V DC, +28V DC</b>
<b>Supply Current</b>	550 mA nom. with Pout = 0.35-1.5W@24V 550 mA nom. with Pout = 0.35-1.5W@28V 700 mA nom. with Pout = 2.0-4.0W@24V 700 mA nom. with Pout = 2.0-3.0W@28V <sup>(VI)</sup> 2000 mA nom. with Pout = 7.0W@24V <sup>(I)</sup> 2700 mA nom. with Pout = 20W@24V <sup>(I)</sup>
<b>Output Impedance</b>	50 Ω (nominal)
<b>Maximum RF Power (adjustable)</b>	< 0.1 W ... > Pout
<b>Frequency Accuracy</b>	± 0.1%
<b>Harmonic Distortion<sup>(III)</sup></b>	≤ -20 dBc
<b>Analogue modulation</b>	
<b>Impedance</b>	50 Ω (nominal)
<b>Voltage range @ 50 Ω</b>	0 ... +1 V <sup>(III)</sup>
<b>RF ON / OFF ratio</b>	≥ 35 dB <sup>(IV)</sup>
<b>Digital modulation</b>	
<b>Impedance</b>	50 Ω (nominal)
<b>Level</b>	Standard TTL <sup>(V)</sup>
<b>RF ON / OFF ratio</b>	≥ 35 dB
<b>RF Output Frequencies<sup>(VII)</sup></b>	80, 110, 150, 200, 260 & 350 MHz
<b>RF Rise/Fall Times</b>	12 nsec @ 80 MHz
<b>(Rise = 10% to 90%)</b>	9 nsec @ 110 MHz
<b>(Fall = 90% to 10%)</b>	7 nsec @ 150 MHz 5 nsec @ 200 MHz 4 nsec @ 260 MHz 4 nsec @ 350 MHz

- (i) 7W and 20W versions use an external amplifier.  
 (ii) Into 50  $\Omega$  load  
 (iii) Part numbers -52 and -58 are  $\leq -30$  dBc  
 (iv) Part number -40 is  $\geq 42$  dB  
 (v) Part numbers -12, -43 are (OFF:  $< +0.3$ V, ON:  $+1.0$ V)  
 (vi) Part numbers -03, -18, -22, -31, -44, -69: 550mA nom.  
 (vii) Other custom frequencies are available

## Connectors

RF output connector	SMA (female) <sup>(i)</sup>
Modulation connector	SMB (male) <sup>(ii)</sup>
Frequency Tuning connector	SMC (male)
Reference Frequency connector	SMC (male)
<b>ALC Connector</b>	
Input	Solder terminal (filtered feed-thru)
Ground	Solder lug
<b>Power Supply connector</b>	
Input	Solder terminal (filtered feed-thru) <sup>(iii)</sup>
Ground	Solder lug <sup>(iii)</sup>

- (i) Part number -12 & -43 have SMB (male)  
 (ii) Part numbers -12, -29 & -43 have SMA (female)  
 (iii) Part numbers -45 & -50 have Mini-Universal Mate-N-Lok connector

## Frequency Tuning

Input Impedance	1 k $\Omega$ nominal
FM Bandwidth (3 dB)	90 kHz
Frequency Range	<b>Input Voltage</b>
50 – 100 MHz	+1.5 - +15 V nominal <sup>(i)</sup>
75 – 150 MHz	+1.5 - +15 V nominal <sup>(ii)</sup>
150 – 280 MHz	+2.0 - +15 V nominal <sup>(iii)</sup>
200 – 380 MHz	+1.0 - +15 V nominal <sup>(iv)</sup>
270 – 430 MHz	+2.5 - +12 V nominal <sup>(v)</sup>

- (i) Part numbers -04, -25 and -68  
 (ii) Part numbers -23, -49 and -59  
 (iii) Part numbers -17, -28 and -48  
 (iv) Part numbers -62 and -63  
 (v) Part number -70

## ALC (Auxiliary Level Control)

Input Impedance	1 k $\Omega$ nominal <sup>(i)</sup>
ALC Bandwidth	35 kHz nominal
RF Output (0 W – Full power)	<b>ALC Voltage level</b>
+24 V (Vcc)	0 – +21 V nominal
+28 V (Vcc)	0 – +25 V nominal
+28 V (Vcc)	0 – +5 V nominal <sup>(ii)</sup>
200 – 380 MHz	0 – +10 V nominal <sup>(iii)</sup>
270 – 430 MHz	

- (i) Part numbers -03, -10, -21, -22, -31, -38, -43, -69: 10K $\Omega$   
 (ii) Part numbers -03, -31, -38 and -43  
 (iii) Part numbers -10, -21, -22 and -69

## Reference Frequency

Output Reference Frequency	Fc divided by 256 <sup>(i)</sup>
(i) Part number -21	

## Cooling, Dimensions, Weight

<b>Cooling</b>	<b>Conduction</b>
<b>Pout</b>	<b>Base plate should be attached to suitable heat sink capable of dissipating:</b>
1.0 W - 1.5 W	15 W
2.5 W - 3.0 W	20 W
4.0 W	22 W
<b>Dimensions inches [mm]</b>	
<b>L x W x H</b>	4 x 1.12 x 3.15 [102 x 29 x 80]
<b>Weight lbs [kg]</b>	0.53 [0.24] (nominal)

## Environmental Conditions

<b>Warm-up Time</b>	<b>5 minutes (nominal)</b>
<b>Base Plate Temperature</b>	0° C to +60° C For optimum output power stability constant base plate temperature should be provided
<b>Storage Temperature</b>	-25°C to +85°C (non condensing)

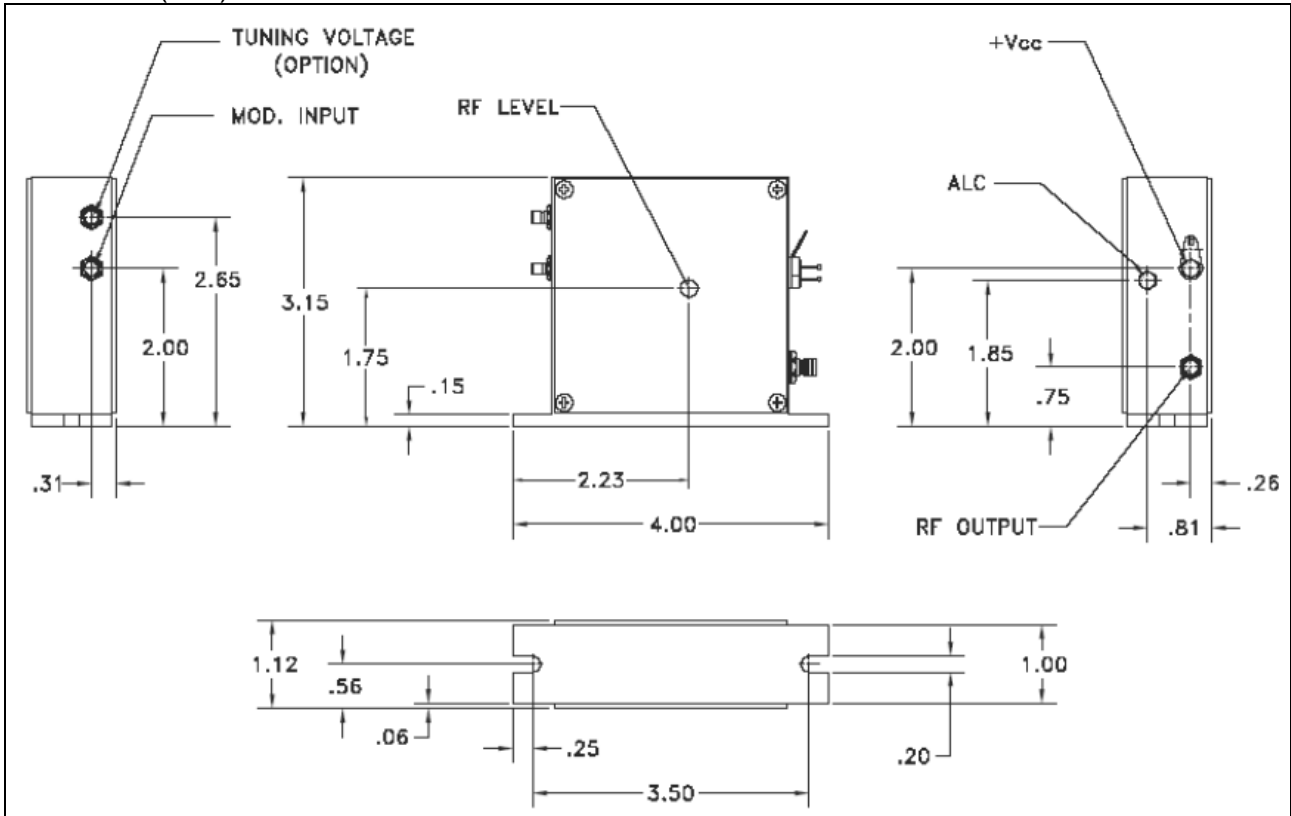
## Absolute Maximum Ratings

<b>Supply Voltage</b>	<b>+28 VDC</b>
<b>Analogue Modulation</b>	-3.0 V to +3.0 V
<b>Digital Modulation</b>	-4.3 V to +4.3 V
<b>Operating Temperature</b>	+65°C (base plate temperature)

## Quality Standards

<b>EU 2002/95/EC (RoHS)</b>	<b>Compliant</b>
<b>Burn-in</b>	12 Hours min @ +25° C and Pout

Dimensions (inch)



1 XXX AF-XINO-X.X

Code	Fc MHz
080	80
081	81
096	96
100	100
110	110
120	120
125	125
140	140
160	160
165	165
180	180
200	200
220	220
250	250
260	260
290	290
300	300
350	350

Code	Modulation
A	Analogue
D	Digital

Code	Fc
I	Internally Set
E	Externally Set

Code	Options
0	None
A	Custom Connector
7	Frequency Reference Fc / 256

Code	ALC
N	None
F	Full
C	Custom

Code	RF Power Watts
0.35	0.35
1.0	1.0
1.2	1.2
1.3	1.3
1.5	1.5
2.0	2.0
2.5	2.5
3.0	3.0
4.0	4.0
7.0	7.0
20.0	20

Other Frequencies and customized versions available upon request.