

Universal 27 MHz OEM AOQS R.F. Driver  
35W R.F. Output Power  
Model 1027-25

1.) OUTPUT POWER

Minimum R.F. output 35W CW. R.F. power is adjustable from 5W to 35W.

2.) R.F. FREQUENCY:

The R.F. oscillator frequency is 27.12 MHz ( $\pm 0.01\%$ ).

3.) LOAD AND STABILITY:

CTI recommends a maximum VSWR of 1.5 to 1. The R.F. driver remains stable for all loads from open circuit to short circuit.

4.) CONNECTORS:

4.1.) R.F. output connector: BNC female.

4.2.) Power supply connector: Connector J803 is a two pin connector, P/N 1-350351-9, from Amp, Inc. This connector is wired to the Q-switch driver with a 40 inch long wire harness. The yellow lead is to be connected to the positive on a 24 Volt DC power supply and the violet lead is the DC return.

4.3.) Logic control connector: Connector J801 is an eight pin connector, P/N 102618-2, from Amp, Inc. Electrical connections are listed on CTI drawing number 97-01349-01-11.

5.) Q-SWITCHING PARAMETERS:

Repetition Rate (adjustable):	6 kHz - 12 kHz (166 $\mu$ s- 83 $\mu$ s)
R.F. Fall Time:	<1.5 $\mu$ sec (90% to 10%)
R.F. Rise Time:	<1.5 $\mu$ sec (10% to 90%)
R.F. OFF Time (adjustable):	<1 $\mu$ s to >3 $\mu$ s
R.F. ON/OFF Extinction Ratio:	>30 dB

## 6.) MODES OF OPERATION:

There are three modes of operation for the Q-Switch driver. The driver is switched between these modes with two TTL level control lines as described later in this section.

The R.F. level for the HIGH R.F. and LOW R.F. modes are adjusted with two panel accessible potentiometers. Note that these two levels are separately adjustable and adjusting one does not affect the other.

Control level pins numbered 6 and 8 on connector J801 are optically isolated from the Q-switch driver circuits. Pin number 7 requires an external +5 Volt signal to drive the optoisolators.

### 7.1.) HIGH R.F. MODE:

Q-Switched R.F. mode - R.F. ON and the gate is adjustable from 6 kHz to 12 kHz (166  $\mu$ s- 83  $\mu$ s) repetition rate. Applying a TTL LOW signal to pin 8 of connector J801 will disengage the Low R.F. mode operation and cause the R.F. driver to operate at the preset PRF rate Q-switched mode. The Q-switched R.F. power level adjustment potentiometer is marked "R.F. HIGH". The adjustment range is from 15 to >25 Watts R.F. power.

The Pulse Repetition Rate (PRF) adjustment potentiometer is marked "RATE". The adjustment range is from 6 kHz - 12 kHz (166  $\mu$ s- 83  $\mu$ s).

### 7.2.) LOW R.F. MODE:

CW R.F. mode - R.F. ON and adjustable from 5 to >25 Watts. Note that this mode is not gated. This feature was incorporated to prevent lasing action from occurring except when called for. With no other logic input on pins 6 and 8 of connector J801, the driver will operate in the CW R.F. mode at the preset R.F. power level. The CW R.F. power level adjustment potentiometer is marked "R.F. LOW". The adjustment range is from 5 to >25 Watts R.F. power.

### 7.3.) R.F. OFF MODE:

R.F. is turned OFF to a level of 30 dB below nominal value in HIGH R.F. Applying a TTL LOW signal to pin 6 of connector J801 will inhibit R.F. output.

8.) POWER REQUIREMENTS:

The Q-switch driver requires +24 Volt DC ( $\pm 1\%$ ) regulated power supply that can at 6 Amps of drive current. The opto-isolators use +5 Volts DC with a minimal current requirement.

9.) PACKAGE SIZE:

See physical dimensions listed on 97-01349-01-11.

10.) ENVIRONMENTAL:

10.1) TEMPERATURE:

Operating: 60 to 85 degrees F (15 to 30 degrees C)  
Storage: 35 to 125 degrees F (2 to 50 degrees C)

10.2) HUMIDITY:

Operating: 5 to 95% relative, non-condensing  
Storage: 5 to 95% relative, non-condensing

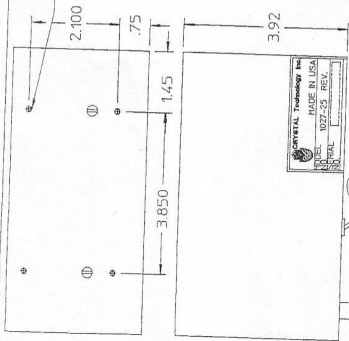
10.3) COOLING AIR:

The minimum air flow through the heat sink is recommended at 500 CFM.

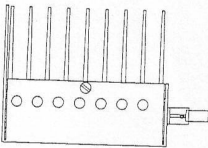
- 11.) This unit is equipped with a 40 inch wire harness with a mating connector that attaches to J801.

REVISION			
ZONE	REV ECD.	APPR.	DATE
ALL	0	4737	1-14-92

MOUNTING HOLES  
 $\varnothing$  .138-32 UNC-2B  
 4 HOLES



LOGIC CONTROL CONNECTOR	
6	RF CONTROL 1
7	+5V
8	RF CONTROL 2



INPUT DC POWER  
 RF OUTPUT  
 LOGIC CONTROL INPUT  
 CALIBRATION POTS.

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**CRYSTAL Technology Inc.**  
 Palo Alto, Ca.

DR. LOG 1-13-92		TITLE	
DR.	LOG 1-13-92	DRIVER, Q-SWITCH 25W 27MHZ OUTLINE DRAWING	
CHK.		APPR.	FAK-1/11/92
DESIGN ACT.	APPR.	DRSN.	ACT. APPR.
DIMENSIONS ARE IN INCHES		TOL.	
IN.	IN.	IN.	IN.
.XX * .01	.X * .05	.X * .1	.X * .01
.XXX * .003	ANGLES - 1°	DO NOT SC. DWG.	
FRACT. * 1/8		SIZE	A
		DWG. NO.	99-00934-01-15
		SCALE	1/2
		REV.	0
		CODE (DWT, INC.)	00599
		SHEET	OF 1

