

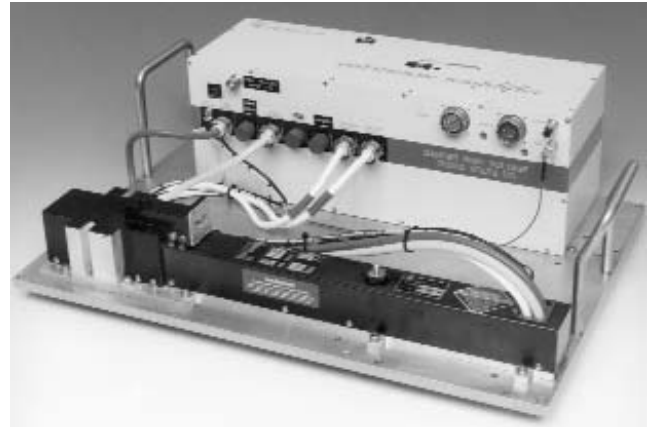


communications

Electron Devices

# M713 Power Supply

- **Accepts 3-phase 200V<sub>LL</sub>, 400 Hz or +270 VDC prime power**
- **Dual collector outputs option for high efficiency operation**
- **Filament life extender option available**
- **External +15 VDC option available**
- **Synchronization option for low-phase noise**
- **Grid modulator (pulse) and focus electrode modulator (pulse/CW) versions available**
- **Extensive traveling wave tube and power supply protection circuits; BITE outputs**
- **The M713 powers L-3's line of 1-2 kW pulse tubes at up to 6% duty**



## Electrical

|                        |                                                      |
|------------------------|------------------------------------------------------|
| Prime Power            | 3-phase 200V, 400 Hz or 270 VDC                      |
| Output Power (to TWT)  | 750 Watts                                            |
| Filament Voltage       | 6.0 to 6.6 VDC, adjustable                           |
| Filament Current       | 2.5 Amps maximum                                     |
| Grid On:               | 80 to 220 VDC                                        |
| Grid Off:              | up to -250 VDC                                       |
| Warm-Up Time           | 3 minutes maximum                                    |
| Cathode Voltage        | Depends on TWT, -12.5 kV max.                        |
| Cathode Adjustment     | .5% minimum                                          |
| Collector Voltages     | Depends on TWT                                       |
| Pulse Characteristics: |                                                      |
| Pulse Width            | 200 nsec. to 30 $\mu$ sec                            |
| Pulse Repetition Freq. | 100 kHz maximum                                      |
| Acquisition Time       | .65 nsec. maximum                                    |
| Duty Cycle             | 4% typical for grid<br>0-100% for focus<br>electrode |

## Interface

|            |                                                                                                                      |
|------------|----------------------------------------------------------------------------------------------------------------------|
| Controls   | Standby/Operate, Battle Short                                                                                        |
| Indicators | Prime Power, Standby, Operate,<br>TWT Fault, Power Supply Fault,<br>TWT Hot, Power Supply Hot,<br>Line Voltage Fault |
| Monitors   | Beam Current, Average Helix Current, Cathode Voltage                                                                 |

The M713 is a compact TWT power supply designed for use in shipboard, airborne, and ground-based military systems. It is very versatile; a radar version is available with synchronization capability for low phase noise, a pulsed version for ECM applications is available.

The power supply is usually supplied fully integrated with an associated TWT on a single conduction-cooled baseplate, thereby forming a self-contained microwave amplifier.

The power supply is designed for control from a remote location. Monitoring outputs include status signals, TWT voltage and current monitors, and several diagnostic test points.

The M713 powers our line of 1 - 2 kW pulse tubes at up to 6% duty.

DS7130904

## Mechanical

|         |                 |
|---------|-----------------|
| Cooling | Conduction      |
| Weight  | 24 lbs. maximum |

## Environment

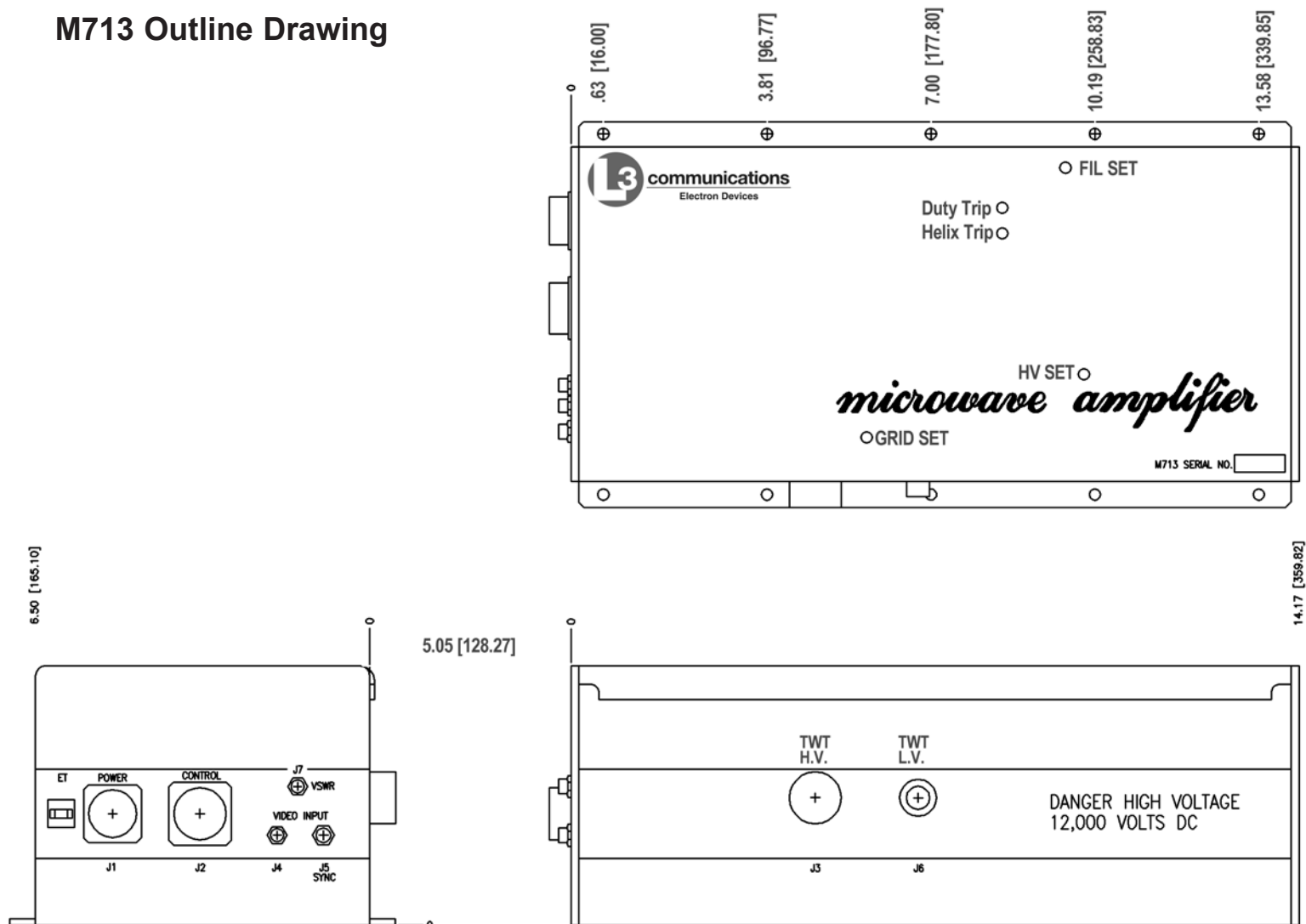
|             |                 |
|-------------|-----------------|
| Temperature | -54°C to + 70°C |
| Altitude    | 40,000 feet     |

Cleared by DoD/DFOISR for public  
release under 05-S-0094 on 10/21/04

## TWTs Using the M713 Power Supply

| TWT Model | Frequency (GHz) | Power | Duty Cycle | Rated Gain (dB) | Weight (lbs.) |
|-----------|-----------------|-------|------------|-----------------|---------------|
| L5827     | 0.7 - 2.0       | 1 kW  | 4%         | 30              | 13            |
| L5873     | 2.5 - 8.0       | 1 kW  | 8%         | 40              | 8             |
| L5737     | 7.5 - 18.0      | 1 kW  | 5%         | 50              | 7             |
| L5850     | 8.5 - 10.5      | 2 kW  | 6%         | 60              | 6             |

## M713 Outline Drawing



The mechanical dimensions shown above are for reference only and are subject to change. Current detailed outline drawings are available on request. All mechanical dimensions are in inches.