

DEM Part Number L3-3PA
10GHz Linear Amplifier

Specifications

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|----------------------------------|---|
| Frequency range: | 10.0 - 10.5 GHz. |
| Power Out: | 3Watts nominal 3.2W Saturated |
| Power Input for rated power out: | 10mW for linear operation (20mW maximum drive) |
| IN/OUT Return Loss | >10dB@ 10.368 GHz |
| DC requirements: | 13.8 volts DC@ 2.5 amps. for nominal output 16 volts DC absolute maximum 10Volts Minimum |
| RF Connectors: | SMA(F) only |
| Size: | 2.5" L x 4." W x 1.125" H |
| Active devices: | FM5061VF (Sumitomo or Eudyna) |
| Keying Option: | PTT - L (Ground for transmit) |

DESCRIPTION: The Down East Microwave Inc. L3-3PA linear amplifier is a simple gain block for the amateur 3 cm band. It will provide >3 Watts saturated output power with 10mW of drive. It requires external T/R switching and can be used by itself or as a driver for a higher power amplifier. The amplifier requires a single 13.8 volts DC supply at 2.2 amps, but will operate at reduce ratings down to 10 volts and up to 16 volts. The unit is provided with an internal negative bias supply and keying circuit for ease of use.

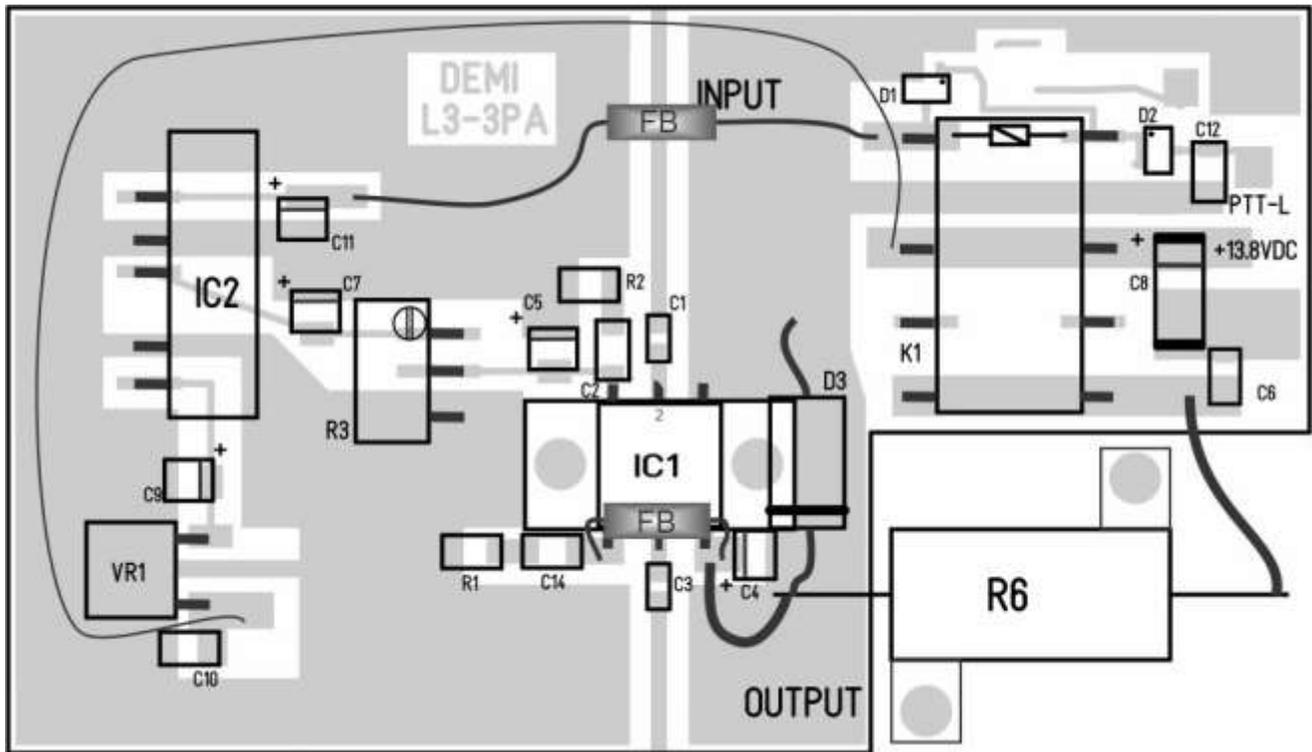
To achieve maximum performance the amplifier should be mounted to a heat sink or metal conductive surface for optional heat dissipation. It is advisable but not necessary to use circulators and band pass filters when available. This will prevent stray oscillations and needless waste of power by amplifying local oscillator frequencies or generating high power out of band spurious signals.

This amplifier is a perfect match for our 10368-144LP transverter. Optional TR switching to key the amplifier directly with the transverter is available. Please contact DEMI with any question and for transverter/amplifier package deals.

OPERATION: Install the amplifier in its operating position preferably bolted to a metal support or heat sink. Connect the RF output to a 50 Ohm load, antenna or power measurement equipment utilizing any filtering or the installation of circulator/isolators if desired. It is not required for operation but may protect the amplifier being operated with a substandard antenna. Connect a 13.8 VDC supply (11-16 VDC). Connect the drive source to the input RF connector. Key the amplifier by connecting the PTT connection to ground. Starting low at -20dBm, apply RF drive and increase up to +10 dBm for full output. The L3-3PA should be exceeding 3 Watts of RF output. If not,

check all RF connections and verify that the DC supply is not current limiting or dropping in voltage. If OK, You may increase the drive up to +20 dBm to verify the amplifiers compression point than may be as high as 4 Watts.

If the L3-3PA is set up with a low power transverter, the TR relay may be connected and output power may be tested again. PTT keying may be connected with the transverters PTT line or may be set up with a sequencer if utilized with an external LNA. Keep all cabling as short as possible and utilize quality RF connects rated for 10 GHz operation.



L3-3PA Component List

All resistors and capacitors are chip components unless specified.

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|---------------|----------------|-------------------|
| C1 1.0pF | C9 4.7μF Tant | R6 3 Ohm, 10 Watt |
| C2 1000pF | C10 0.1μF | VR1 78M05 |
| C3 1.0pF | C11 4.7μF Tant | D1 MMBD 914 |
| C4 4.7μF Tant | C12 0.1μF | D2 MMBD 914 |
| C5 4.7μF Tant | C14 1000pF | D3 CZ5348B |
| C6 0.1μF | R1 51 ohm | K1 G5V-5 |
| C7 4.7μF Tant | R2 51 ohm | IC1 FMM5061VF |
| C8 47μF Tant | R3 200 POT | IC2 NMA0505S |

