

# RFT-3A

## UHF Transmitter

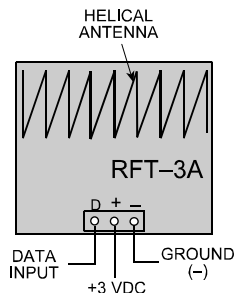
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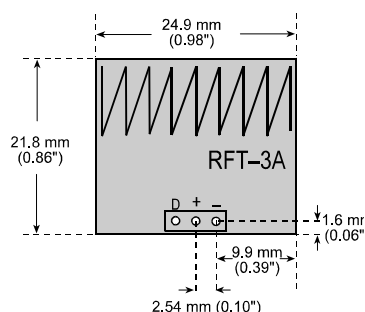


## Theory of Operations

### 1. INTRODUCTION



**Figure 1. RFT-3A**



**Figure 2. Dimensional Data**

The RFT-3A is a general purpose, miniature low-power transmitter module, designed for digital data transfer on UHF radio channels. Its main application is transmission of digital data in remote control systems and RF data links, with Visonic Ltd. receivers of the RFR series at the receiving end. The transmitter accepts a serial, CMOS level data input. Mechanical support and electrical connections to the RFT-3A are obtained by mounting the transmitter on a 3-pin header seated on the host motherboard. The pins of this header are inserted into 3 drilled-through pads on the RFT-3A printed circuit board and soldered thereon.

The integral helical antenna is an important advantage for those "connect and forget" applications. However, a few rules must be carefully observed (see Mounting Considerations).

### SPECIFICATIONS

#### Operating Frequencies:

315 MHz

#### Antenna Type: Integral, helical

#### Modulation: 100% ASK (OOK)

#### Data Rate: Up to 1.2 kbps NRZ.

#### Data Input Levels: 0V (LOW) and 3V (HIGH)

#### Operating Voltage: 3 VDC $\pm 10\%$ , regulated

#### Current Drain: 17 mA Max. (Input HIGH), 0 mA (input LOW)

#### Operating Temperatures: 0°C to 49°C (32°F to 120°F).

#### Dimensions: 21.8 x 24.9 x 13.0 mm (0.86 x 0.98 x 0.51 in.).

#### Compliance with Standards: Designed to meet FCC part 15 and ETS 300 220 requirements.



**Figure 3. Recommended Mounting**

### 3. MOUNTING CONSIDERATIONS

- The transmitter should never be mounted within a metal enclosure. A metal box confines the radio wave energy within its interior (its shielding effect prevents free wave propagation).
- The motherboard directly under the transmitter, especially the area below and around (1 cm) the RFT-3A, should be free of any wires, metal-foil planes and electronic components.
- It is a good practice to install the RFT-3A at the edge of the motherboard or in one of its corners, with the helical antenna towards the edge (Fig. 3).