

DESCRIPTION

The B3RX1640 is a low noise front end for X-band marine radar receiver. It comprises a low noise amplifier with monitor circuit, an image rejection mixer and an electronically tuned local oscillator.

Frequency range 9340 to 9480 MHz
I.F. output frequency 60 MHz
Noise figure 1.5 dB

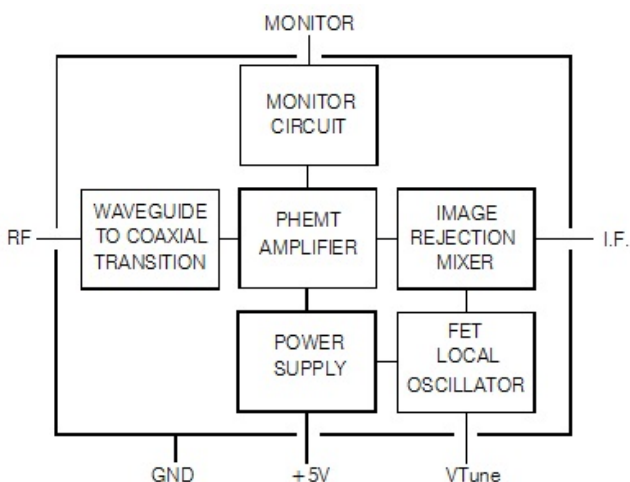
GENERAL DATA

Operating voltage 5 V d.c.
Operating current 50 mA
Overall dimensions 88 x 31 x 42 mm max
Net weight 100 g approx
Waveguide size WR90 (WG16)

MAXIMUM AND MINIMUM RATINGS

| | MIN | MAX | |
|-----------------------------------|-----|------|----|
| Operating voltage (see note 1). | - | +6 | V |
| Tuning voltage | 0 | 45 | V |
| R.F. input (1uS,1kHz, repetitive) | - | 500 | mW |
| Body temperature: | | | |
| Operating | -30 | +85 | °C |
| Storage | -55 | +125 | °C |
| Vibration (50Hz) | - | 20 | g |
| Shock (11ms, half sine) | - | 25 | g |

BLOCK DIAGRAM



TYPICAL OPERATION

Operating Conditions

Operating voltage 5.0 +/- 0.2 V
Signal frequency 9410 +/- 70 MHz
Local Oscillator frequency
tuning voltage 4V 9400 MHz max
tuning voltage 24V 9540 MHz min

TYPICAL Performance (at 25 °C)

| | Min | Typ | Max | |
|-----------------------------------------------------|-----|------|------|--------|
| Operating current | - | 50 | 80 | mA |
| Noise figure | - | 1.5 | 2.0 | dB |
| Conversion gain | 4.0 | 6.0 | - | dB |
| Image rejection ratio | 15 | 20 | - | dB |
| Frequency pulling | - | 0.2 | 0.6 | MHz |
| (See note 2) | | | | |
| Input power at 1dB compression | -5 | -3 | - | dBm |
| Saturated I.F. output | 0.8 | 1.0 | - | V |
| Local Oscillator Switch on drift (3min to 40min) | - | - | 4 | MHz |
| Local Oscillator temperature drift | 0 | -200 | -350 | kHz/°C |
| Tune rate | 8 | 12 | 18 | MHz/V |
| I.F. frequency (3dB B.W.) | 50 | 60 | 70 | MHz |
| I.F. output impedance | - | 50 | - | Ω |
| Tune I/P impedance | 1 | - | - | MΩ |
| Monitor voltage | 30 | 50 | 70 | mV |

NOTES

1. Positive only; negative voltage must not be applied.
2. Input power 10 dBm.
3. External voltages must not be applied to the I.F. or monitor terminals.



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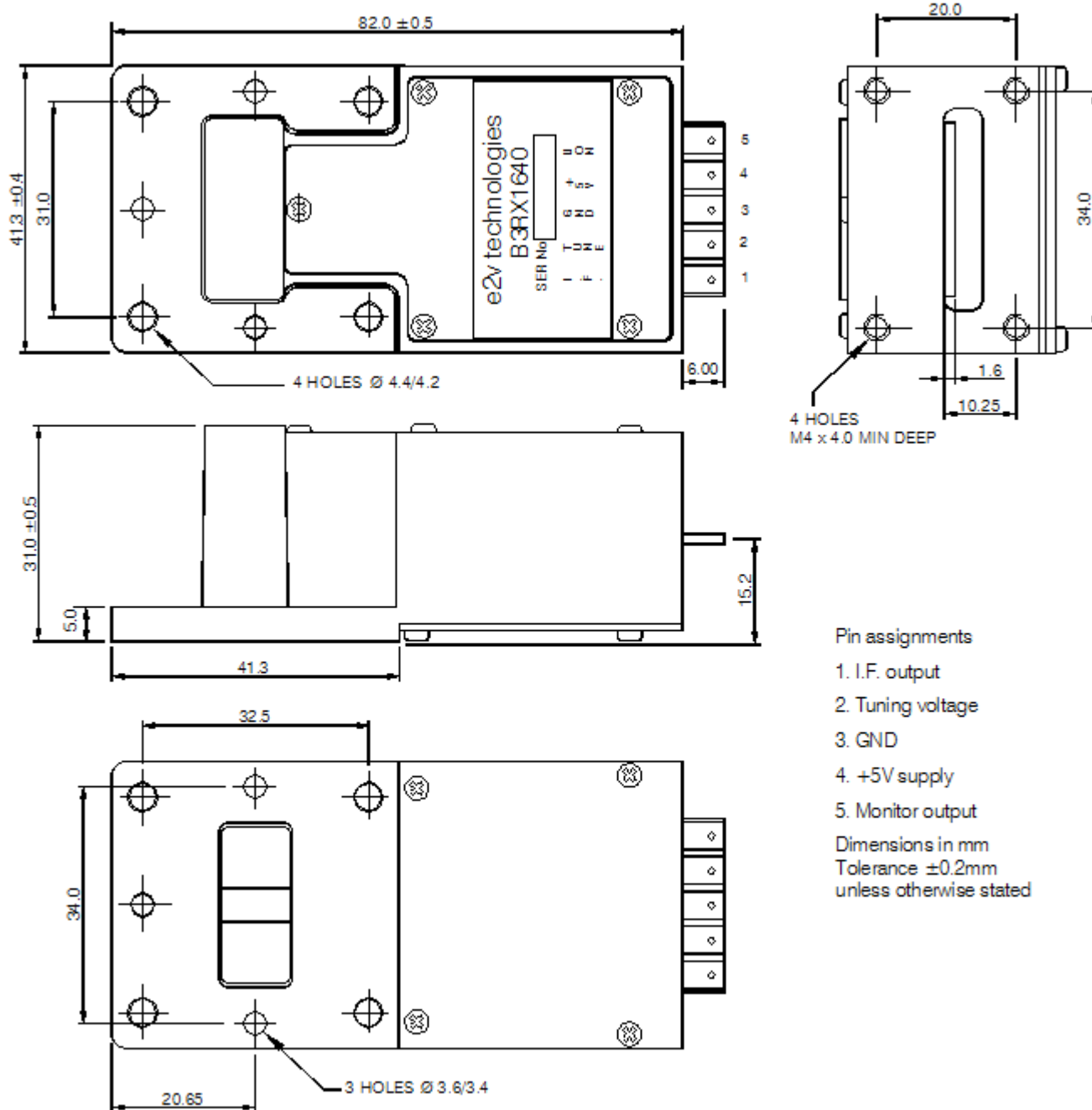
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OUTLINE (All dimensions in mm; dimensions without limits are nominal)



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