

DESCRIPTION

The B3RX1616 is a protected mixer/oscillator for X-band marine radar receivers. It comprises an internal microstrip limiter, a single balanced mixer and an electronically tuned local oscillator.

Frequency range	9360 to 9460	MHz
IF output frequency	60	MHz
Noise figure	6.5	dB

GENERAL DATA

Operating voltage	5.0	V DC
Operating current	55	mA
Overall dimensions	81 x 21 x 42 mm nom	
Net weight	100	g approx
Waveguide size	WR90 (WG16)	

MAXIMUM AND MINIMUM RATINGS

	Min	Max	
Operating voltage (see note 1)	-	+6.0	V
Tuning voltage	0	30	V
RF input:			
repetitive, 1 μ s at 1 kHz	-	400	W
peak, 1 μ s	-	800	W
Body temperature:			
operating	-30	+90	$^{\circ}$ C
storage	-40	+100	$^{\circ}$ C
Vibration (50 Hz)	-	10	g
Shock (0.5 ms, half sine)	-	100	g

TYPICAL OPERATION

Operating Conditions

Operating voltage	5.0 \pm 0.2	V
Signal frequency	9410 \pm 50	MHz
Local oscillator frequency:		
tuning voltage 2 V	9420	MHz max
tuning voltage 11 V	9520	MHz min

Typical Performance (at 25 $^{\circ}$ C)

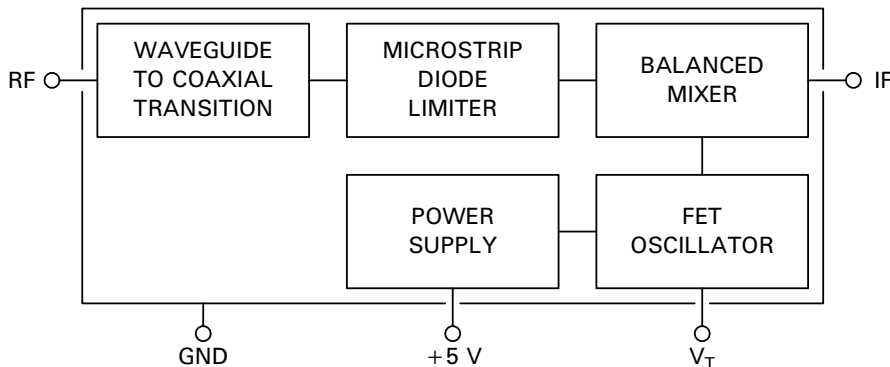
	Min	Typ	Max	
Operating current	-	55	70	mA
Noise figure	-	6.5	7.5	dB
Conversion loss	-	6.0	7.0	dB
Input VSWR	-	-	3.5:1	
Tuning rate	10	-	50	MHz/V
Frequency pulling (see note 2)	-	-	2.0	MHz
Local oscillator switch-on drift (3 to 40 minutes)	-	-	4.0	MHz
Local oscillator leakage				
from RF port	-	-	-16	dBm
Input power at 1 dB compression	-5.0	0	-	dBm
Saturated IF output	0.8	1.0	-	V
Local oscillator temperature drift	0	-200	-400	kHz/ $^{\circ}$ C
Intermediate frequency (3 dB bandwidth)	50	60	70	MHz
IF output impedance	-	50	-	Ω
Tuner input impedance	400	-	-	k Ω

NOTES

1. Positive only, negative voltage will cause damage.
2. Input power 100 W.

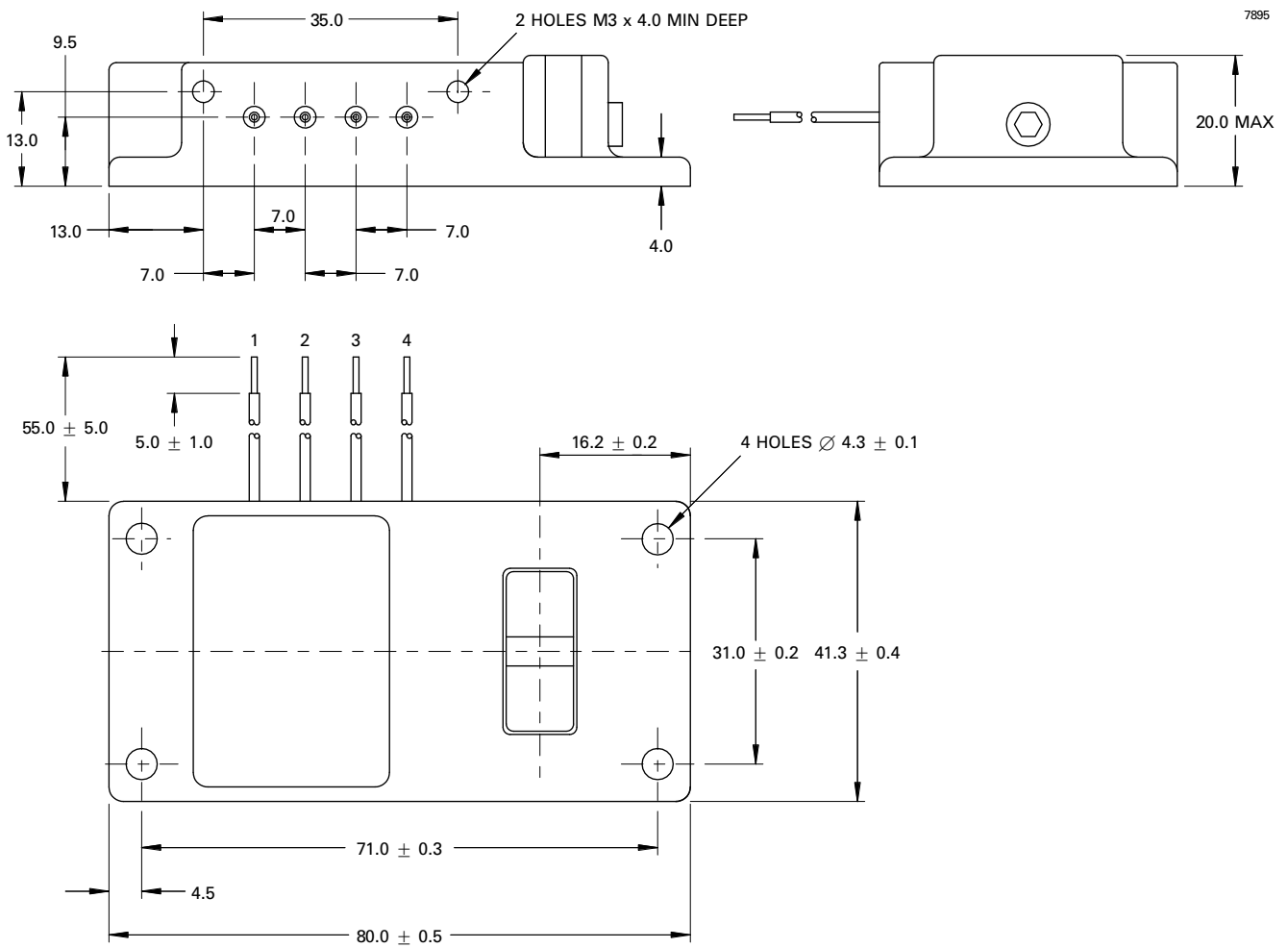
BLOCK DIAGRAM

7894



OUTLINE (All dimensions in millimetres)

Dimensions without limits are nominal



Lead connections

- 1 Tuning voltage (+2 to +11 V)
- 2 +5 V supply
- 3 IF output
- 4 Ground

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