

DESCRIPTION

The B3RX1619 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	50	mA
Overall dimensions	100 x 23 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	45	V
RF input:			
repetitive, 1 μ s at 1 kHz	-	800	W
peak, 1 μ s	-	1.6	kW
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 5 V	9420	MHz max
tuning voltage 30 V	9520	MHz min

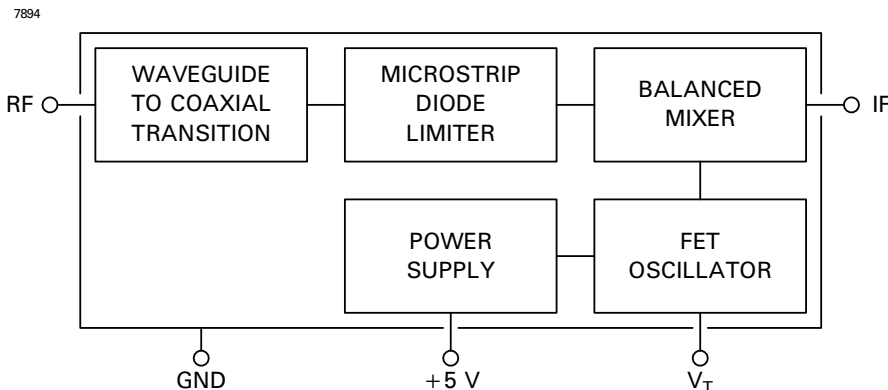
Typical Performance (at 25 $^{\circ}$ C)

	Min	Typ	Max	
Operating current	-	50	70	mA
Noise figure	-	6.5	7.5	dB
Conversion loss	-	6.0	7.0	dB
Input VSWR	-	-	3.5:1	
Tuner voltage ($f_{lo} = 9470$ MHz)	11	-	19	V
Tuning rate	4.0	-	18	MHz/V
Frequency pulling (see note 2)	-	-	3.0	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

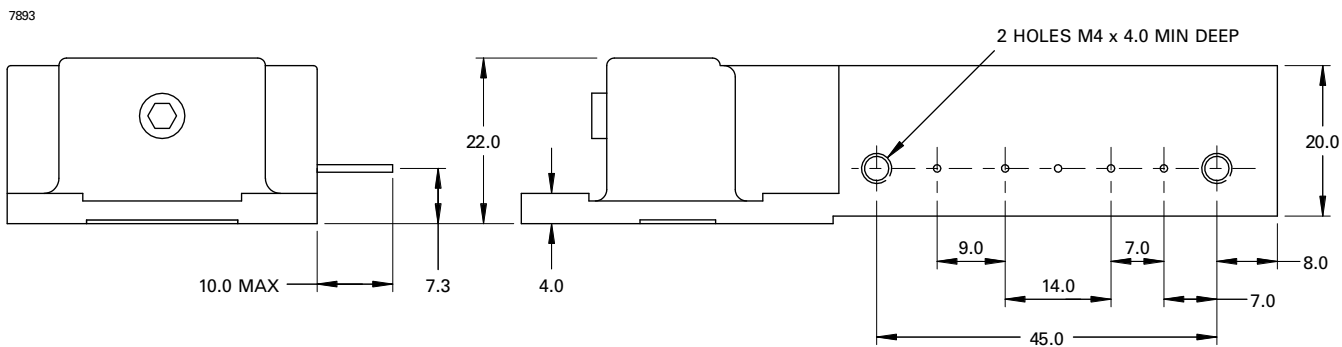
1. Positive only, negative voltage will cause damage.
2. Input power 200 W.

BLOCK DIAGRAM



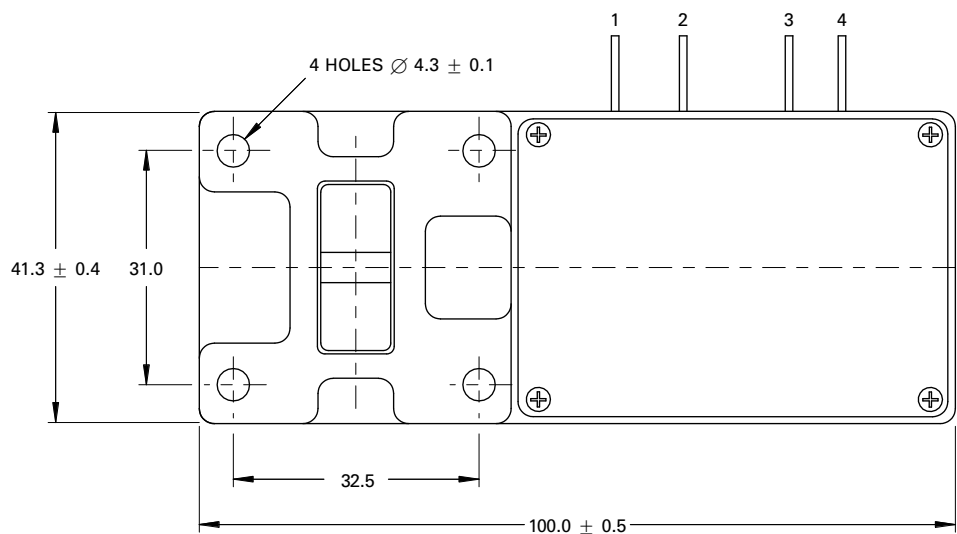
OUTLINE (All dimensions in millimetres)

Dimensions without limits are nominal



Pin connections

- 1 Ground
- 2 IF output
- 3 +5 V supply
- 4 Tuning voltage



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