

DESCRIPTION

The e2v range of RoHS compliant performance monitors provide down-converter/up-converter functionality and are used as a transponder in X-band radar systems.

B3RX1652 produces two (2) RF pulses, delayed by up to 200 μ s following the magnetron RF pulse.

Output power level will track incident input power level (from the external radar system magnetron), using an internal closed-loop detector circuit to track input power level variations.



GENERAL DATA

RF input frequency range 9,370 to 9,450 MHz
 Maximum tuning range 200 MHz max.
 Spurious oscillations -60 dBm max.
 Mass..... 1.0 kg approx.

MAXIMUM AND MINIMUM RATINGS

	Min	Max	
Supply voltage (+12 V)	+11.5	+12.6	V
Supply current (+12 V)	-	300	mA
Supply voltage (-12 V)	-12.6	-11.5	V
Supply current (-12V)	-	200	mA
Control voltage range	0	+10	V
Max. control voltage input	-	+12	V
RF input power range	+8	+28	dBm
Input pulse width	1.0	-	μ s
Power tracking (nominal)	10	-	dB
Tracking accuracy:			
+25 °C ambient	-1.5	+1.5	dBm
over temperature	-3.0	+3.0	dBm
RF output power (second pulse):			
minimum level	-	-56	dBm
maximum level	-36	-	dBm
RF output power range	22	-	dB
Output step level:			
second pulse to noise floor	12	-	dB
first pulse to second pulse			
+8 dBm to +25 dBm input	7.5	10.5	dB
+28 dBm input power	6.5	10.5	dB
Enable – PM off (line 'low')	-	0.8	V
Enable – PM on (line 'high')	2.0	5.5	V

Automatic Frequency Control (AFC)

AFC lock:

control about magnetron frequency	± 1	± 3	MHz
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See Note 1

time to lock from Enable 'high'	-	3.0	s
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MAXIMUM AND MINIMUM RATINGS (continued)

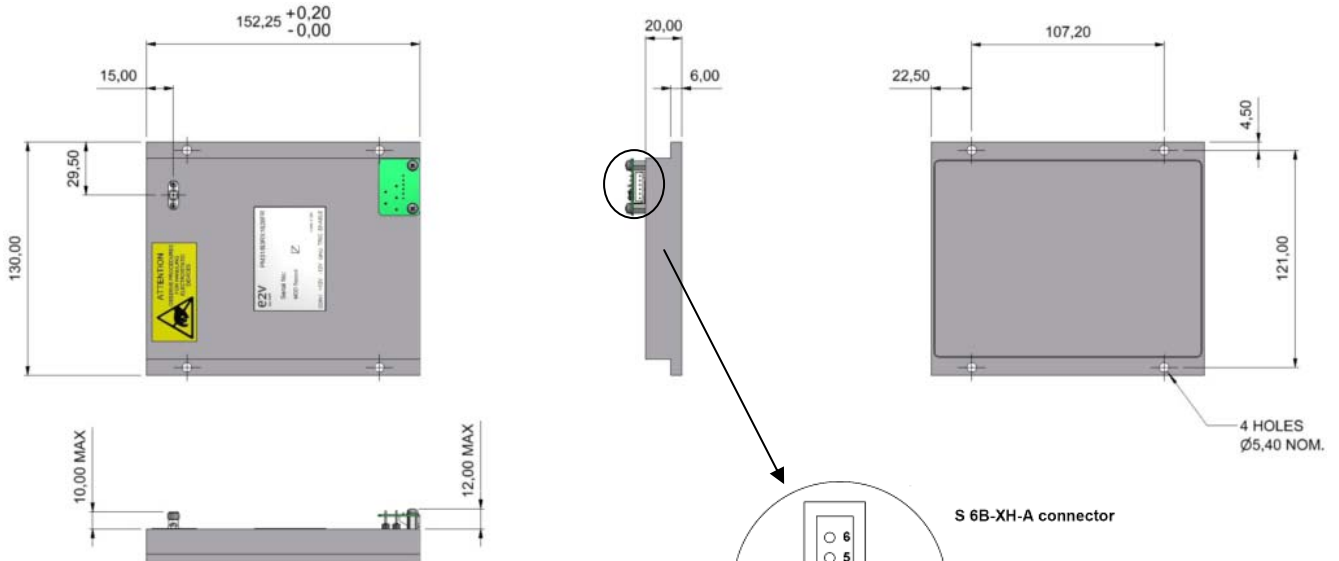
	Min	Max	
Pre-Trigger			
Trigger (high)	2.5	12	V
Trigger (low)	-	0.7	V
Trigger timing before magnetron pulse	50	150,000	ns
See Note 2			
Trigger impedance	10	-	k Ω
Delay	160	200	μ s
See Note 3			
Transmitted pulse lengths	3.5	4.5	μ s
Inter-pulse spacing	3.5	4.5	μ s
Transmission pulses	60	-	pulses
See Note 4			
Operating prf range	500	700	Hz
Operating temperature	-30	+80	°C
Mechanical shock			
(1,000 cycles, 10 ms @ 3 Hz, 3 axes)	-	20	g
Mechanical vibration			
(2 to 13.2Hz)	-1.0	+1.0	mm
(13.2 to 100Hz)	-	0.7	g

NOTES

- AFC will ramp output RF frequency through the exact magnetron input frequency to ensure maximum sensitivity.
- Measured from rising edge
- Delay measured from rising edge of system magnetron RF pulse to rising edge of first output RF pulse.
- Minimum number of transmitted pulses from the host radar system, within frequency and power specification, into the monitor antenna of the performance monitor.

MECHANICAL OUTLINE

(Dimensional tolerance ± 0.25 mm unless indicated otherwise)



Finish Surtec 650 passivation
(to MIL-DTL-5541F, Type II, Class 3, RoHS compliant)

RF output SMA (female) connector

S 6B-XH-A connector

Connector Pin Assignments	
1	Enable
2	Trigger
3	Ground (0 V)
4	-12 V
5	+12 V
6	Control

TYPICAL TIMING DIAGRAM

