



Synthesiser, SMT, 3.15 - 5.55 GHz, 2.5 MHz step.

MASY-008215-243000

Features

Full Integration: VCO, PLL, Loop Filter

Wide Bandwidth (> 2GHz)

Fast Switching (=< 50µs)

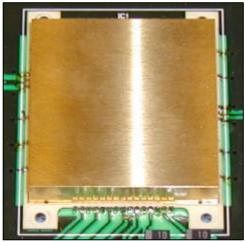
Low noise: Typ -110 dBc/Hz @ 100kHz offset

Description

This synthesiser is designed for demanding wide bandwidth applications.

The fully integrated design incorporates a VCO, PLL and loop filter in a convenient surface mount package. The lid is fully solder attached to provide optimum electrical shielding.

Programming is via 3 Wire SPI (Serial Peripheral Interface.)



Electrical Specification

(Applies over the frequency range @ +25 °C, output and input load impedance of 50 ohms. Unless otherwise stated limits & conditions are indicated values.)

Parameter	Min	Тур	Max	Units	Condition	
Frequency	3.15	4.35	5.55	GHz	Over T _{OP} - See Note 1.	
Step Size		2.5		MHz		
RF Output power	0	+3	+6	dBm		
Output Return Loss		12		dB		
Settling Time		50		μs	To within ± 10kHz	
Output Harmonic		-20	-15	dBc		
Spurious		-63	-60	dBc		
Phase Noise (Noise <1kHz offset dependent upon external reference)		-90	-75	dBc/Hz	Offset 1kHz	
		-85	-75	dBc/Hz	Offset 10kHz	
		-110	-100	dBc/Hz	Offset 100kHz	
External Ref		100		MHz	See Note 2.	
Lock Monitor	2.0	2.5	3.3	Volt	Out of Lock	
	0	0.1	0.8	Volt	In Lock	
V _{PLL} DC Supply voltage	+23.75	+24	+24.25	Volt		
V _{PLL} DC Current		10	15	mA	V _∞ = +24V	
V _{VCO} DC Supply voltage	+9.75	+10	+10.25	Volt		
V _{VCO} DC Current		100	150	mA	V _∞ = +10 V	

Note 1: T_{OP} = -40°C ~ +85°C Case operating temperature

Note 2: External Reference, 0dBm min input power, with stability of 20 ppm (max) over temperature.

Reference phase noise: -98 dBc/Hz @ 10 Hz, -110 dBc/Hz @ 100 Hz, -120 dBc/Hz @ 1 kHz Note 3: Programming 3 Wire SPI (Serial Peripheral Interface) - contact factory for details.

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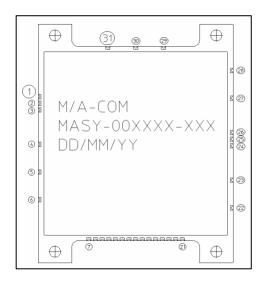


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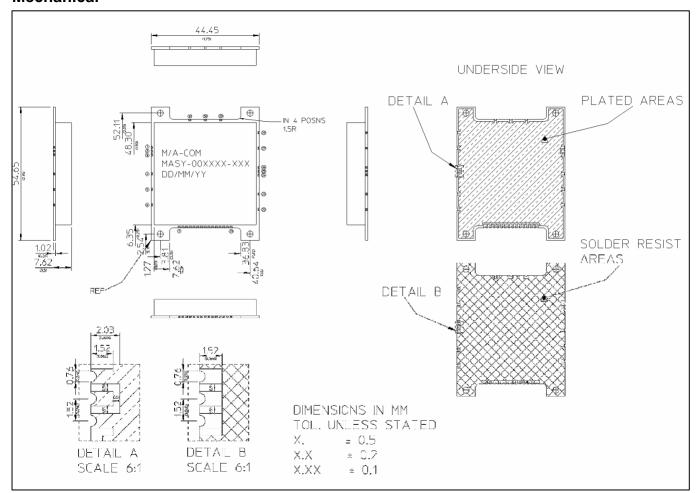
MASY-008215-243000 V2

Pin Assignment

Pin Number	Assignment		
2	RF_Out		
8	Clock		
10	Data		
12	LE (Load Enable)		
16	LD (Lock Detect)		
18	+10V V CC		
20	+24V V CC		
21	NC (No Connection)		
25	REF_IN (Reference Input)		
All other pins	GND		



Mechanical



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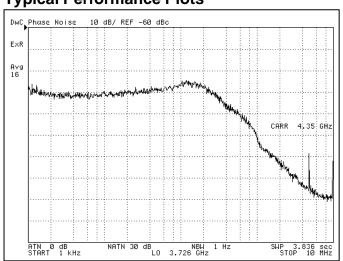
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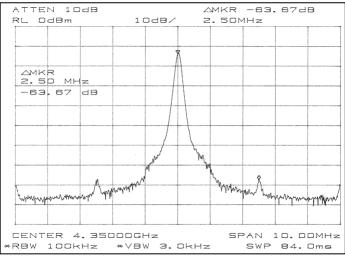
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Environmental

Parameter	Min	Max	Units
Case Operating Temperature (T _{OP})	-40	+85	°C
Storage Temperature	-45	+120	°C

Typical Performance Plots





Phase noise at centre frequency 4.35GHz.

Frequency Spectrum at centre frequency 4.35GHz.

Demonstration Board

To enable early system integration and performance verification, this part is available on a demonstration board (pictured.)

The demonstration board comes with test results for the on-board unit, with programming software, control cable (PC Printer port) and instructions.

For more information about this demonstration system, please contact factory for details.



Actual product finish may vary from illustration

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