

The CMOD225-10-100 is a PLL module that phase locks an internal Ultra-low phase noise 100 MHz VCXO to an external 10 MHz input frequency reference. If no input reference is detected, then the module locks to its internal 10 MHz TCXO reference automatically. The module has 2 separate opto couplers to indicate LOCK condition and lack of input reference.

PERFORMANCE SPECIFICATION	MIN	TYP	MAX	UNITS
Single Input Supply Voltage:	+5.5		+15.0	V
Input Supply Current:		50	60	mA
Frequency Accuracy when locked to internal reference:	-2.5		+2.5	ppm
Output Power at 100 MHz (Sinewave) into 50 ohms:	+10			dBm
Lock Time:			100	ms
Capture Range (Ref Input):			±20	ppm
Reference Input Level:	+2		+12	dBm
Phase Noise with internal reference @ 10Hz offset:		-80		dBc/Hz
Phase Noise with internal reference @ 10kHz offset:		-145		dBc/Hz
Phase Noise floor with internal reference:		-165		dBc/Hz
Closed Loop BW:			200	Hz
Operating Temperature Range:	-20		+70	°C
Storage Temperature Range:	-45		+90	°C

ABSOLUTE MAXIMUM RATING (J1, J2 and J3)

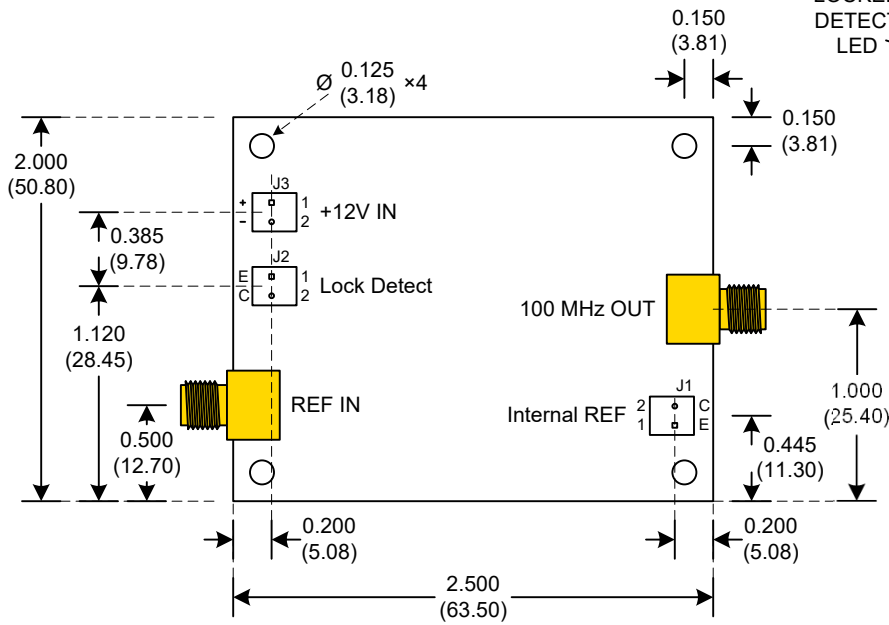
Input supply voltage on J3:	+15V
Collector-Emitter Voltage on J1 and J2:	35V
Emitter-Collector Voltage on J1 and J2:	6V
Collector Current on J1 and J2:	50mA
Collector Power Dissipation on J1 and J2:	150mW

NOTE: RF Output must be terminated into 50Ω for proper operation.



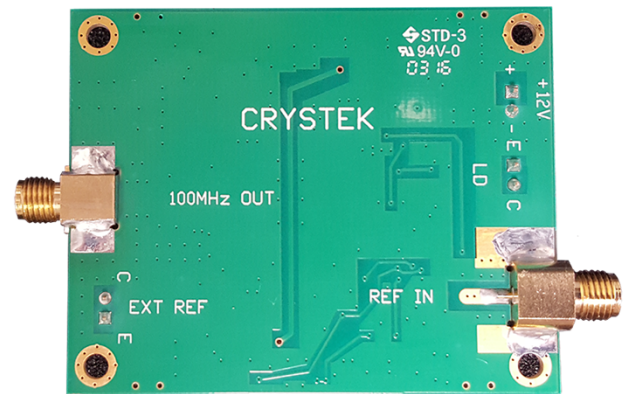
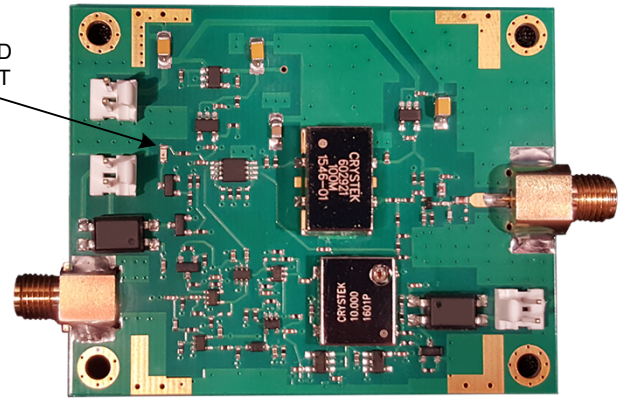
Product Control:

Crystek Part Number:	CMOD225-10-100	Release Date:	23-Jul-2019
Revision Level:	D	Responsible:	R. Cerda



Unless otherwise specified,
Dimensions are in: $\frac{\text{IN}}{(\text{mm})}$

LOCKED
DETECT
LED



Indicators:

Locked detect LED turns ON to indicate the module is Locked to either the internal or external frequency reference.

Locked detect indicator (J2): 2 pin post driven from an opto coupler to indicate when the module is Locked to either the internal or external frequency reference. The opto coupler transistor is conducting when the module is Locked. Pin 1 of J2 is the Emitter, Pin 2 of J2 is the collector.

Internal Reference lock detect (J1): In the absence of an external frequency reference, the module will automatically switch to its internal reference. The opto coupler transistor on J1 is conducting when the module is locked to its internal reference. Pin 1 of J1 is the Emitter, Pin 2 of J1 is the Collector.

Connectors:

J1, J2 and J3: 2 position vertical header 0.100" spacing

Input Reference: Female SMA

Output Signal: Female SMA

Module Size:

2" × 2.5" (50.80mm × 63.50mm)

0.5" (12.70mm) height max

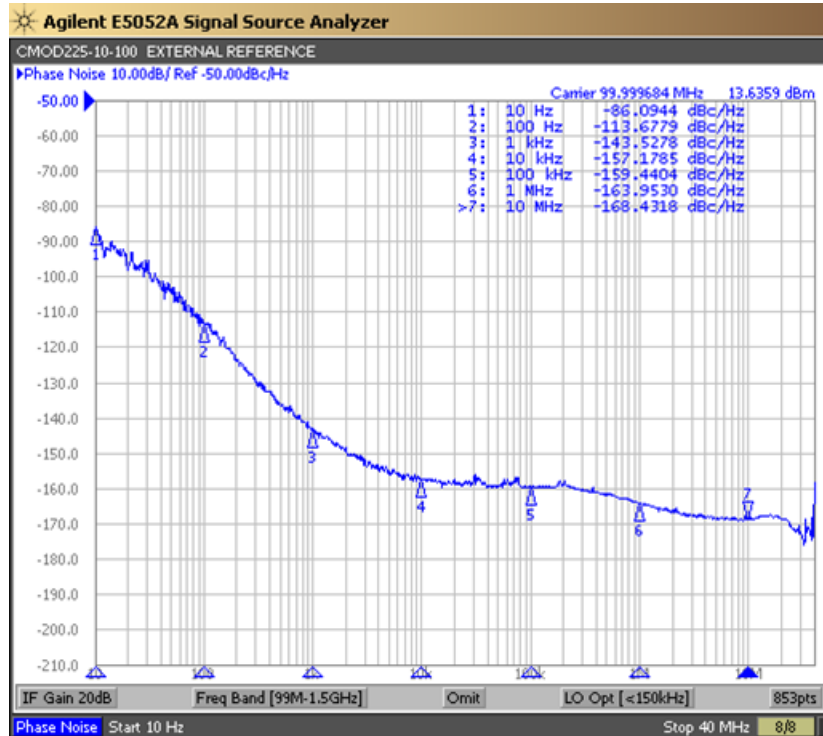


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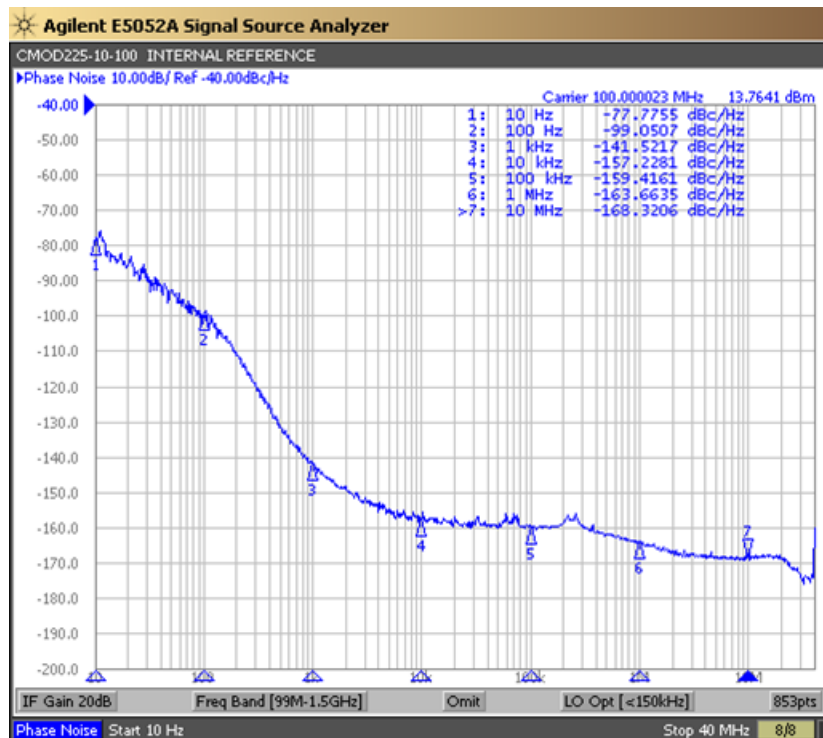
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Module LOCKED to External 10 MHz Reference



Module LOCKED to Internal 10 MHz TCXO



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