

## ***Product Bulletin***



### **VMRZCRM Series 10 Gb/s Clock Recovery Module For RZ Data Format**

This product is used to generate a high level synchronous clock signal from 10 Gb/s RZ data. This module includes a temperature stable high “Q” filter (1000) for excellent jitter transfer characteristic, which unlike phase-locked-loop designs cannot “lose lock”.

The data rate is factory settable over a range of 9.900 Gb/s to 10.700 Gb/s. Please specify the bit rate when ordering (see instructions inside for part numbering).

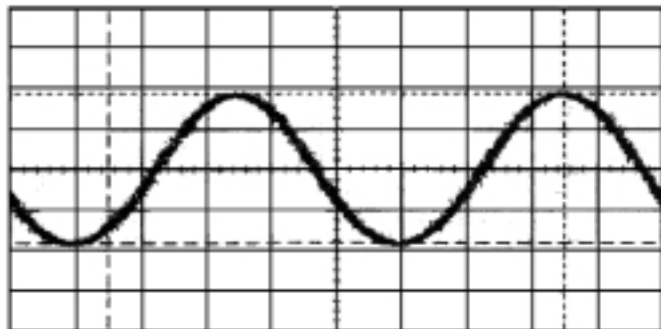
#### **Key features**

- Low DC power, 5V @ 160 mA typ
- Provides sinusoidal Clock > 1.5 Vp-p
- Accepts data input level as low as 200 mVp-p
- Internal DC regulation and reverse voltage protection
- Spectral purity > 30 dBc
- Excellent output amplitude and phase stability over input level range and temperature

#### **Applications**

- Long haul optical transmission systems
- OC-192 applications with FEC protocols

## Typical Performance



Clock Output @ 10.0 Gb/s

PRBS =  $2^{31} - 1$

500.0 mV/div

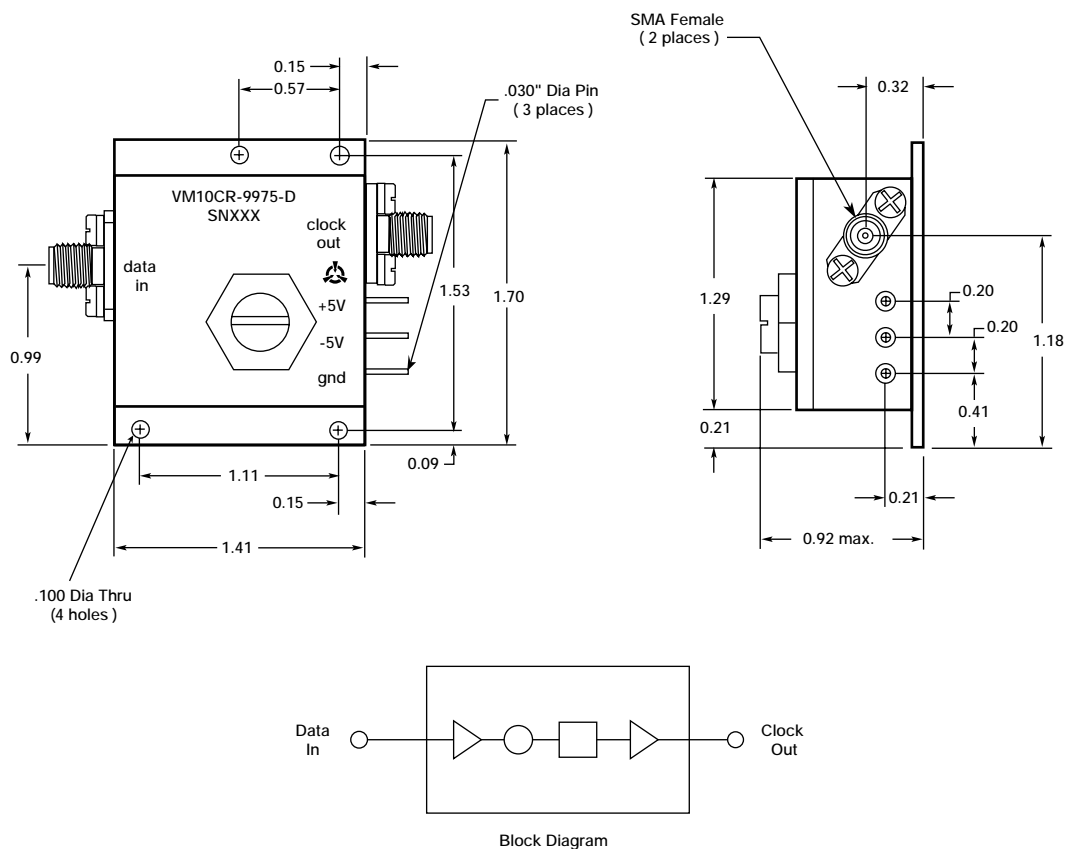
20.0 ps/div

## 10 Gb/s Clock Recovery Module Performance Specifications

Parameter	Specification
Data Input Level	0.2 V <sub>pp</sub> tp 1.0 V <sub>p-p</sub>
Input Reflection	-10 dB max. 100 kHz to 8 GHz, -15 dB typical to 5 GHz
Clock Output Level	1.5 V <sub>p-p</sub> min
Clock Output Variation with Input Amplitude	3 dB output change max for 6 dB input change
Clock Output Variation with Temperature	10% max, 0 - 80°C
Internal Resonator "Q"	750 min,
Clock Output Reflection	-10 dB max, @ FO ± 100 MHz
Operating Temperature	0°C to 80°C
Clock Phase Stability Over Temperature	±20°, (±5 ps) max
Clock Phase Stability Over Input Level	±3 ps over any 3 dB change
Spurious Output	-30 dBc max.
Output Jitter	7% RMS noise max. on output sinusiod (10 second average)
Positive Supply	+4.8 to 5.5 VDC @ 200 mA max, internally regulated Reverse polarity protected to 10 V
Negative Supply	-4 to -6 VDC @ 10 mA max, internally regulated Reverse polarity protected to 20 V

## Package Dimensions

Dimensions in inches except where indicated



## Ordering information

Please specify bit rate in MHz as the last five digits of the part number.

Example: VMRZCRM-99750 (is tuned to operate at 9.9750 Gb/s)

For more information on this or other products and their availability, please contact your local JDS Uniphase sales representative or JDS Uniphase directly at 732 465-2800, or by fax 732 465-2801, or via email at [sales.nj@us.jdsuniphase.com](mailto:sales.nj@us.jdsuniphase.com). Visit our Web site at [www.jdsuniphase.com](http://www.jdsuniphase.com).



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