

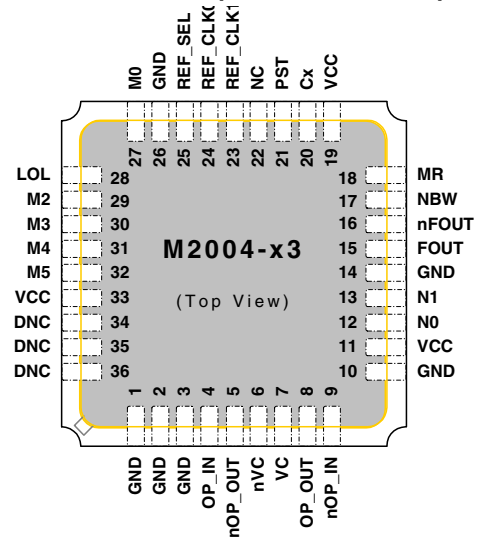
GENERAL DESCRIPTION

The M2004 variants -03, -13, and -23 are VCISO (Voltage Controlled SAW Oscillator) based clock generator PLLs designed for clock frequency translation and jitter attenuation in a high-speed data communications system. The clock multiplication ratio and output divider ratio are pin selectable. Included features are a Loss of Lock (LOL) indicator, a Protection Switch Trigger (PST) input, and a Narrow Bandwidth control input pin (NBW pin). An external capacitor connection (Cx) is also provided for an optional state change timer application. The -13 and -23 device variants add the Hitless Switching with Phase Build-out (HS/PBO) feature.

FEATURES

- Ideal for OC-48/192 data clock
- Integrated SAW (surface acoustic wave) delay line
- VCISO frequency from 300 to 700MHz **
- Low phase jitter of < 0.5ps rms, typical (12kHz to 20MHz or 50kHz to 80MHz)
- Pin-selectable configuration of divider ratios
- Loss of Lock (LOL) output, Narrow Bandwidth input (NBW Pin), Protection Switch Trigger (PST) input, and an optional external capacitor connection (Cx)
- Hitless Switching with Phase Build-out (HS/PBO) added to the M2004-14 and M2004-24 to enable SONET (GR-253) /SDH (G.813) MTIE and TDEV compliance during reference clock reselection
- Reference clock inputs support single-ended LVCMOS, LVTTTL
- Differential LVPECL output
- Industrial temperature available
- Single 3.3V power supply
- Small 9 x 9 mm SMT (surface mount) package

PIN ASSIGNMENT (9 x 9 mm SMT)



Example Input / Output Frequency Combinations

Input (MHz)	VCISO ** (MHz)	Output (MHz)	Application
19.44	622.08	77.76	OC-12 / 48 / 192
77.76		311.04	
155.52		622.08	

Device Variants and Corresponding Functions

Variant	Hitless Switching / Phase Build-out Triggered by		
	Phase Transient	Mux Reselection	PST Pin
M2004-03	no	no	✓ Yes
M2004-13	✓ Yes	✓ Yes	✓ Yes
M2004-23	no	✓ Yes	✓ Yes

* Series consists of parts numbered M2004-03, -13, and -23.

** Specify VCISO center frequency at time of order.

SIMPLIFIED BLOCK DIAGRAM

