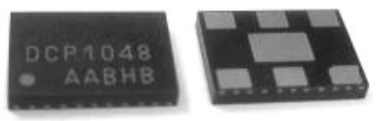
Abracon ASxxx Series of
High Performance MEMS Differential Clock Oscillator

ASxxx Series of devices are miniature MEMS based, PLL clock oscillators optimized to meet the requirements of high speed serial data communication channels. These differential devices are available in single and dual output formats including CMOS, LV-PECL, LVDS, and HCSL.

Features

- Devices are available in standard pin-pin compatible [7.0 x5.0mm], [5.0x3.2mm], [3.2x2.5mm], and [2.5x2.0mm] footprints.
- Devices are Lead Free & RoHS compliant.
- Jitter optimized for high speed serial data formats.
- High Reliability, with 20 times better MTTF than quartz oscillators
- Devices operate from +2.5, to +3.6 Volt supplies
- -40 to +85C operating temperature range, and extended Automotive Grade temperature stability at -55 to +125°C, ±25ppm
- Multiple output formats: CMOS, LVPECL, LVDS, HCSL, including Dual Output configurations.
- High Stability with ± 10ppm, ±25ppm, ±50 ppm available.
- Short lead Time: 2 weeks
- Shock & Vibration Immunity MIL-STD-883
- 50 dBc Power Supply Rejection Ratio
- Field programmable production devices are available



Applications

Storage Area Networks
» SATA, SAS, Fibre Channel, PCIe

Passive Optical Networks
» EPON, 10G-EPON, GPON, 10G-PON

Ethernet
» 1G, 10GBASE-T/KR/LR/SR, FCoE

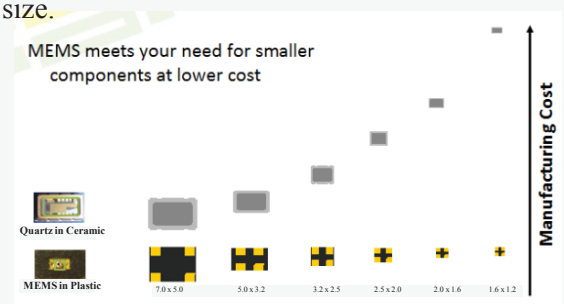
Video
» HD, SD, SDI

What the ASxxx can do for your design…..

The ASxxx series saves PCB area. Combine a small device footprint and minimal external components to get the smallest solution footprint.

The ASxxx series is optimized to exceed Jitter requirements of high speed serial data formats. Integrated jitter 100KHz -20MHz < 400fs, and 200KHz – 20 MHz < 300 fs.

ASxxx series is more cost efficient vs. quartz competitors. As device dimensions shrink, quartz resonator costs increase. The 0.2 mm2 MEMS device cost decreases with package size.

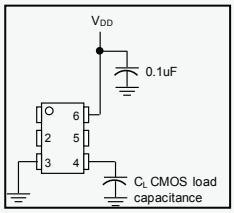


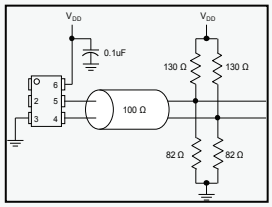
Highly reliability designs such as Enterprise SSD Memory cannot meet their performance targets without highly reliable components such as the ASxxx clock oscillators.
http://www.eetimes.com/design/memory-design/4412418/Why-flash-storage-needs-MEMS

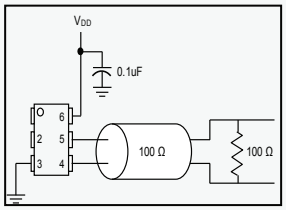
MEMS Part Number / Key Performance list

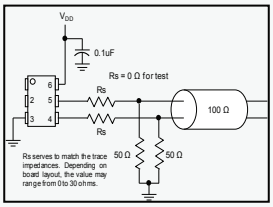
ABRACON DIFFERENTIAL MEMS Supply Voltage: 2.25V to 3.6 V Package Sizes: ASVMP (7.0 x 5.0 x 0.85mm, ASFLMP 5.0 x 3.2 x 0.85 mm ASDMP 2.5 x 2.0 x 0.85mm & All others 3.2 x 2.5 x 0.85 mm					
Part Number	**Differential Output Type**	**Supply Current**	**Frequency Range**	**Integrated Phase Jitter (JPH)**	**Stability**
ASEMCLP	LVPECL	56.5mA typ	~ 10 – 460MHz	Typically, < 400fs / (100KHz – 20MHz) and < 300fs / (200KHz – 20MHz (Typical Ref 156MHz clock o/p)	+/-10ppm over -40 / 85C
ASEMCLV	LVDS	29mA typ			
ASEMCHC	HCSL	40mA typ			
ASEMDHC	Dual HCSL	60mA typ			
ASEMDLP	Dual LVPECL	89mA typ			
ASEMDLV	Dual LVDS	89mA typ			
ASEMP	CMOS, LVPECL, LVDS, HCSL	31mA typ 51mA typ 29mA typ 40mA typ	CMOS ~ 10 – 170MHz LVPECL / LVDS / HCSL ~ 10 – 460MHz		+/-10ppm over -20/70C and +/-50ppm over -55/ +125C
ASDMP	CMOS, LVPECL, LVDS, HCSL	31mA typ 56.5mA typ 29mA typ 40mA typ			
ASFLMP	CMOS, LVPECL, LVDS, HCSL	31mA typ 51mA typ 29mA typ 40mA typ	CMOS ~ 10 – 170MHz LVPECL / LVDS / HCSL ~ 10 – 425MHz	Typically, < 550fs / (100KHz – 20MHz) and < 350fs / (200KHz – 20MHz	
ASVMP	CMOS, LVPECL, LVDS, HCSL	31mA typ 51mA typ 29mA typ 40mA typ			

Application Output Configurations









Links and Resources- MEMS data sheets:
http://www.abracon.com/oscillators.htm#memsoscoscillators.htm#memsosc:

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