



Features and Benefits

- Frequency: 10MHz
- Supply voltage: 3.3V
- Steady current: 30mA Typ.
- Output waveform: HCMOS
- Hold over stability: ±600us over 24h
- Aging: ±5ppb per day
- Operating temperature: -40°C to +85°C
- Size: 39*34*9.3mm

Typical Applications

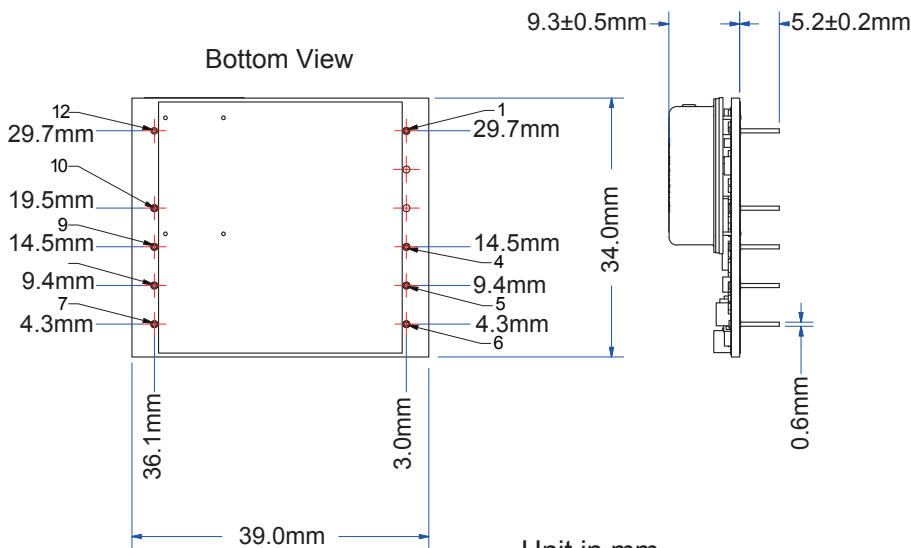
General Industry

Description

TM3934CJ-LP-10MHz-A is the generic ultra-low power Timing module of DEI using a low power OCXO. This TM delivers a PPS, a HCMOS output with a standard frequency of 10MHz. Its core low aging performance and low power consumption makes it ideal for all applications with drastic precision timing constraints under GNSS denied area. The module consumes less than 100 mW at 25°C and shows a thermal sensitivity less than ±100ppb across the full temperature range. A specific firmware brings its thermal sensitivity to ±2ppb (on demand).

Mechanical Drawing & Pin Connections

Drawing No: MD21000) -1



PIN	FUNCTION
1	Vtune
4	Tune Enable
5	TX
6	RX
7	Vcc
8	GND
9	1PPS IN
10	1PPS OUT
12	RF OUT

Unit in mm
1mm = 0.0394 inches



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F _{nom}			10		MHz	
RF Output							
Output wave form				HCMOS			
H-level voltage			2.4			V	
L-level voltage					0.4	V	
Duty cycle			45		55	%	
Rise/Fall time		10% - 80%			8	ns	
Load				15pF			1 MΩ
1 PPS Output Parameters							
H-level voltage			2.4			V	
L-level voltage					0.4	V	
Level			0		V _{cc}	V	
Rise/Fall time		10% - 80%			8	ns	
Load				10pF			1 MΩ
1 PPS Input Parameters							
H-level voltage			2.4		V _{cc}	V	
L-level voltage					0.4	V	
Format				Rising edge			
Load				1 MΩ			
Serial Communications							
Protocol				RS-232			
Format			0		V _{cc}		CMOS
Baud Rate				57600			
Power Supply							
Supply Voltage	V _{cc}	±5%	3.15	3.3	3.45	V	+5V on request
Supply Current							
Warm-up		During 10s max			330	mA	
Steady state / -40°C				60	65	mA	
Steady state / +25°C				30	35	mA	
Steady state / +70°C				15	17	mA	
Steady state / +85°C				12	15	mA	
Warm-up Time	T _{up}	to ± 1 ppm of final frequency (1 hour) at 25°C			10	s	
		to ± 100 ppb of final frequency (1 hour) at 25°C			60	s	
Frequency Stability							
Versus Operating Temperature Range		-40°C to +85°C		±150	±250	ppb	
Initial frequency accuracy		+25°C referred to nominal frequency		±0.1	±0.2	ppm	
Versus supply voltage		±5%		±0.1	±0.2	ppm	
Versus load		10kΩ // 15 pF load ±10%		±0.1	±0.2	ppm	
1 PPS accuracy 1σ				±10		ns	
Hold over stability		over 24h (at +25°C)	±100		±600	us	
Short-term		τ = 0.1s		2	10	10 ⁻¹¹	
		τ = 1s		3	10	10 ⁻¹¹	
Versus acceleration		Worst direction		±1.0		ppb/G	
Retrace		24h work after 24 off			±10	ppb	
Aging Per Day		After 30 days of operation		±2	±5	ppb	
Aging 1 st Year					±1	ppm	
Aging After 10 years					±5	ppm	
Environmental, Mechanical Conditions							
Operating temperature range		-40°C to +85°C					
Storage temperature range		-55°C to +95°C					
Weight		10 grams					
Soldering instructions		Hand soldering only, with recommended pins soldering temperature : 235°C ±5°C, t=10s ±0.5s (260°C max for 5s max)					
PCB cleaning/washing		Not washable					

Notes: Parameter guaranteed by design and characterization