

QEN14

20.7 x 13.1 mm, 14 pin DIL package



Frequency and Electrical Characteristics

Parameter	Min.	Typ.	Max.	Unit	Test condition / Description																	
Nominal frequency (Fn)	0.4096		150	MHz																		
Operating temperature range		0 to +70	-40 to +85	°C	See ‘Order Part Example’																	
Storage temperature range	-55		+125	°C																		
Frequency stability over temperature ¹			±15 to ±100	ppm	See ‘Order Part Example’																	
Long-term stability (Ageing)			±5	ppm	Frequency drift over 1 year at 25°C																	
Power supply voltage(V _{CC})																						
3.3V (BH option)	3.135	3.3	3.465	V _{DC}	See ‘Order Part Example’																	
5.0V (H option)	4.750	5.0	5.250																			
Duty cycle	40	50	60	%																		
Rise & fall time			10	ns	From 10% V _{CC} to 90% V _{CC}																	
Start-up time			10	ms																		
Output load																						
HCMOS			15	pF																		
TTL load			5	LS-TTL																		
Maximum output load	<table><tr><td>Frequency</td><td>V_{CC} = 5V</td><td>V_{CC} = 3.3V</td></tr><tr><td>Up to 50.000MHz</td><td>50 pF</td><td>30 pF</td></tr><tr><td>Up to 70.000MHz</td><td>30 pF</td><td>20 pF</td></tr><tr><td>Up to 150.00MHz</td><td>15 pF</td><td>15 pF</td></tr></table>					Frequency	V _{CC} = 5V	V _{CC} = 3.3V	Up to 50.000MHz	50 pF	30 pF	Up to 70.000MHz	30 pF	20 pF	Up to 150.00MHz	15 pF	15 pF					
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Input current	<table><tr><td>Load capacitance</td><td>Frequency</td><td>V_{CC} = 5V</td><td>V_{CC} = 3.3V</td></tr><tr><td rowspan="4">C_L = 15 pF</td><td>0.500 to 23.999MHz</td><td>20 mA</td><td>15 mA</td></tr><tr><td>24.00 to 49.999MHz</td><td>30 mA</td><td>20 mA</td></tr><tr><td>50.00 to 69.999MHz</td><td>40 mA</td><td>30 mA</td></tr><tr><td>70.0 to 150.000MHz</td><td>60 mA</td><td>45 mA</td></tr></table>					Load capacitance	Frequency	V _{CC} = 5V	V _{CC} = 3.3V	C _L = 15 pF	0.500 to 23.999MHz	20 mA	15 mA	24.00 to 49.999MHz	30 mA	20 mA	50.00 to 69.999MHz	40 mA	30 mA	70.0 to 150.000MHz	60 mA	45 mA
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¹ Include 25°C tolerance, operating temperature range, input voltage change (V_{CC} ±5%), load change (15pF ±10%), first year ageing, shock and vibration.

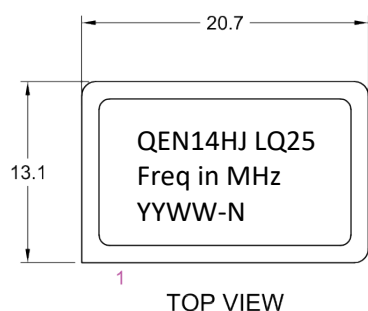
Order Part Example – QEN14HJ LQ25 / 10.000MHZ

Parameter	Product family and package	Supply Voltage (V _{CC})	Option	Operating temperature range	Frequency stability** (FvT)	Nominal Frequency (Fn. MHz)
Code	QEN14	H	J	LQ	25	10.000MHZ
Decode	QEN = XO 14 = 14 pin, Full size DIL	H = 5.0V BH = 3.3V	J = Tri-state R = Duty cycle 45/55%	LQ = 0 to 70°C JQ = -10 to 70°C HQ = -20 to 70°C DT = -40 to 85°C	15 = ±15ppm 25 = ±25ppm 50 = ±50ppm 100 = ±100ppm	Please enter Fn

** Maximum deviation:

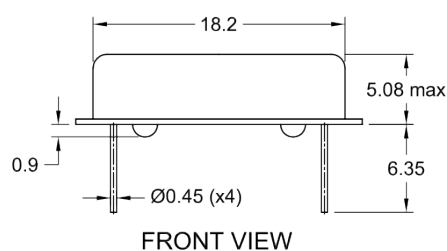
Operating temperature range	±15ppm	±25ppm	±50ppm	±100ppm
0 to 70°C	Yes	Yes	Yes	Yes
-10 to 70°C	–	Yes	Yes	Yes
-20 to 70°C	–	Yes	Yes	Yes
-40 to 85°C	–	Yes	Yes	Yes

Model Outline, Recommended Pad Layout, Marking and Packaging

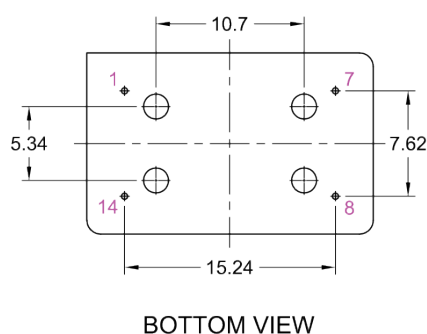


Marking	Note
Line 1	QEN14HJ LQ25
Line 2	10.000
Line 3	2439-N

Product code: See order example
Frequency in MHz (6 digits)
Year code (YY): 24 = 2024,
Week code (WW): 39 = Week 39 of the year,
N = Manufacturing code



Pin	Connections
1	NC / Tri-state Open = Active, 1 = Active, 0 = High Z
7	GND
8	Output
14	V _{CC}



NOTE:

- Packaging: ESD carton box
- Dimension unit is in millimetre.