



# QEUM1 / QEUM1-GW

UM1 Crystal – Through Hole & Gull Wing SMD packaged  
*Specification (Rev-C)*

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September 19<sup>th</sup>, 2006

## Electrical Characteristics

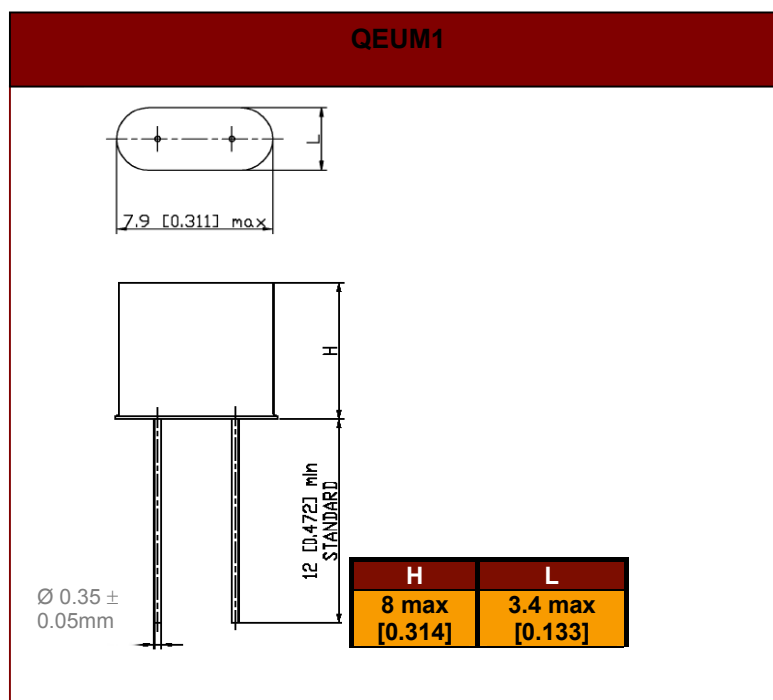
Electrical Parameters	Unit	Minimum	Typical	Maximum	Test conditions
Frequency range	MHz	10		200	
Frequency Tolerance (at 25°C)	± ppm	10	30	50	Refer to Ordering Information
Temperature Stability	± ppm	10	30	50	Refer to Ordering Information
Operating Temperature Range	°C		-20/+70	-40/+85	Refer to Ordering Information
Storage temperature range	°C	-40		+85	
Shunt capacitance C <sub>0</sub>	pF			7.0	
Load capacitance	pF	10pF ~ 32pF or series			Refer to Ordering Information
Drive level	µW		100	500	
Aging (First Year)	± ppm			3	Ref at 25°C
Insulator resistance	MΩ	500			At 100V <sub>DC</sub>

Customized specification upon request

## ESR vs. frequency range and Mode of vibration

Frequency range (MHz)	Mode of vibration	Max ESR (Ω)	Frequency range (MHz)	Mode of vibration	Max ESR (Ω)
10.000 to 14.999	Fund.	40	50.000 to 105.000	3rd	60
15.000 to 40.000	Fund.	30	50.000 to 175.000	5th	150
24.000 to 49.999	3rd	80	70.000 to 200.000	7th	100

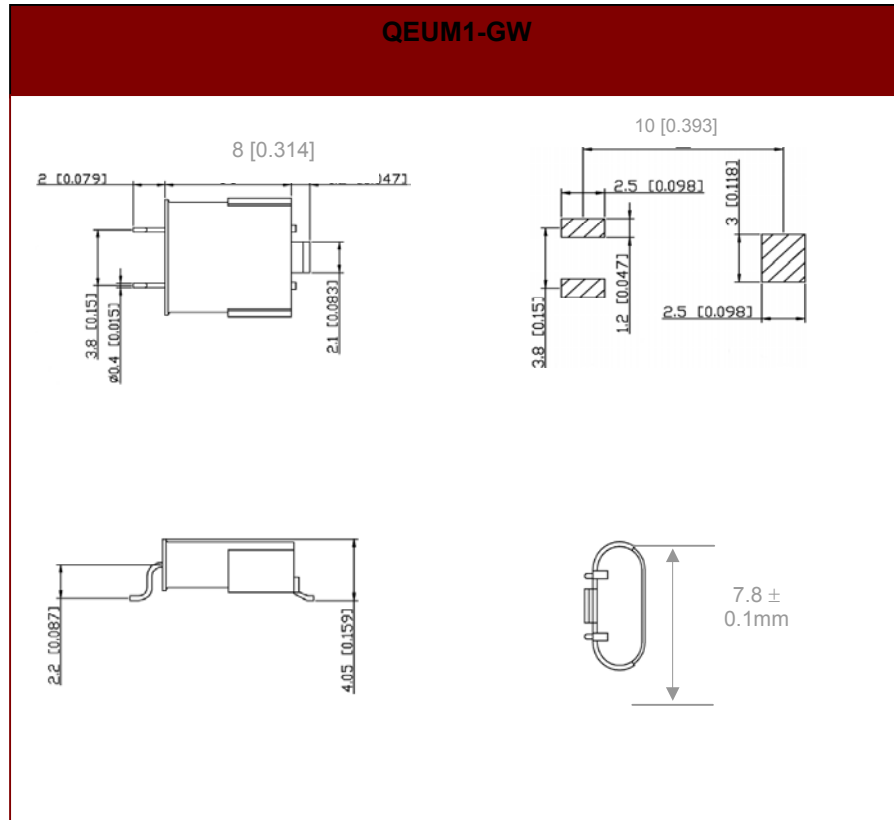
## Mechanical Characteristics



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	Marking for QEUM1	Marking for QEUM1-GW
Line 1	VRDxxx (Temex code)	VRSxxx (Temex code)
Line 2	Frequency in MHz (6 digits)	Frequency in MHz (6 digits)
Line 3	YYWW – production code	YYWW – production code

Mechanical conditions	
Vibration	10g, 10Hz to 2KHz according to standard CEI 68-2-63
Shocks	100g, 6ms according to standard CEI 68-2-27

**Note :** QEUM1 & QEUM1-GW are fully RoHS compliant.

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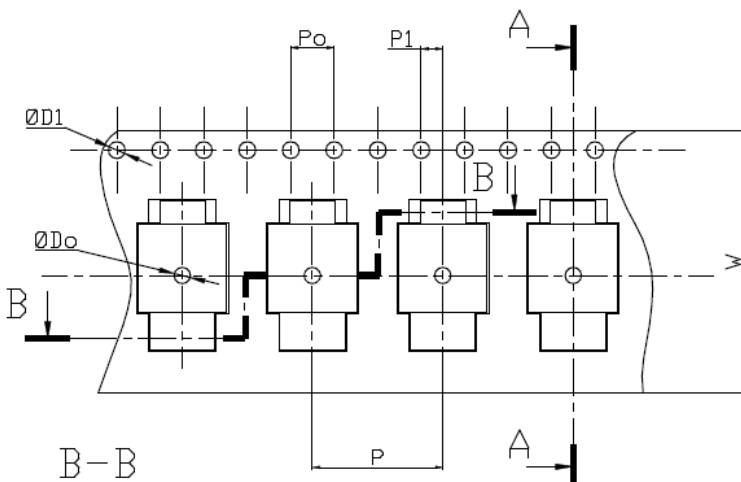
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## Ordering Information

Part numbering system						
QEUM1	1	30	HQ	50	16	25.000MHZ
Package type	Vibration mode	Frequency tolerance	Operating temperature range	Frequency stability	Load Capacitance	Nominal Frequency (MHz)
<b>QEUM1</b> : UM1 Through Hole packaged  <b>QEUM1-GW</b> : UM1 Gull Wing SMD packaged	1 = Fundamental 3 = 3 <sup>rd</sup> Overtone 5 = 5 <sup>th</sup> Overtone 7 = 7 <sup>th</sup> Overtone	10=±10ppm 30=±30ppm 50=±30ppm	D=-40°C F=-30°C H=-20°C J=-10°C L=0°C M=+50°C N=+55°C O=+60°C Q=+70°C T=+85°C	10=±10ppm 30=±20ppm 50=±30ppm	16=16pF  Please, enter the value of load capacitance	Please enter the nominal frequency

## QEUM1-GW Tape Drawing



Item	Symbol	Dimensions
Pitch of components	P	12 ± 0.1
Pitch of sprocket hole	P <sub>0</sub>	4 ± 0.1
Length from hole to component center	P <sub>1</sub>	2 ± 0.1
Width of carrier tape	W	24 ± 0.3
Diameter of feed hole	D <sub>0</sub>	Ø 1.5
Diameter of sprocket hole	D <sub>1</sub>	Ø 1.55

**Note 1** : Metal Clips are oriented in the direction of the sprocket holes.

**Note 2** : Multiple is 1Kpcs per reel.