



# QESM04

SMD 6.0x3.5 Crystal – Ceramic SMD packaged  
*Specification (Rev-D)*

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Specification (rev-D)

September 01<sup>th</sup>, 2006

## Electrical Characteristics

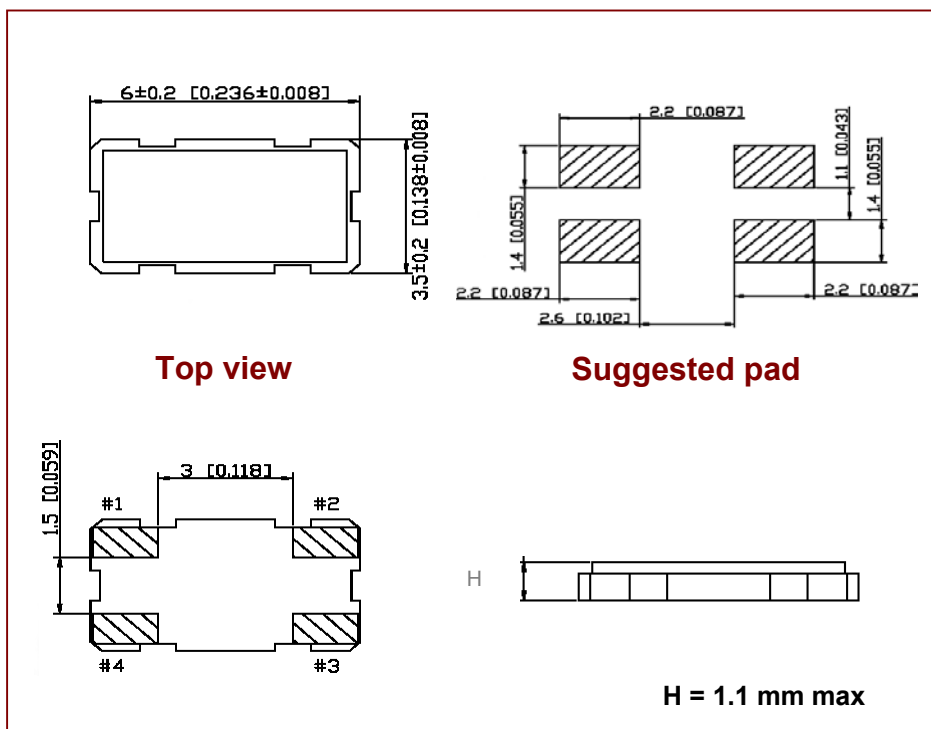
Electrical Parameters	Unit	Minimum	Typical	Maximum	Test conditions
Frequency range	MHz	10		80	
Frequency Tolerance (at 25°C)	± ppm	10	30	50	Refer to Ordering Information
Temperature Stability	± ppm	10	30	50	Refer to Ordering Information
Operating Temperature Range	°C		-20/+70	-40/+85	Refer to Ordering Information
Storage temperature range	°C	-40		+85	
Shunt capacitance C <sub>0</sub>	pF			7.0	
Load capacitance	pF	10pF ~ 30pF or series			Refer to Ordering Information
Drive level	µW		10	100	
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 10.999	Fund. / AT	100	16.000 to 39.999	Fund. / AT	40
11.000 to 11.999	Fund. / AT	80	40.000 to 80.000	3 <sup>rd</sup> / AT	70
12.000 to 15.999	Fund. / AT	60			

## Mechanical Characteristics



Marking for QESM04	
Line 1	Manuf code +Temex code (6 digits)
Line 2	Frequency in MHz (6digits)

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 1 :** QESM04 is fully RoHS compliant.

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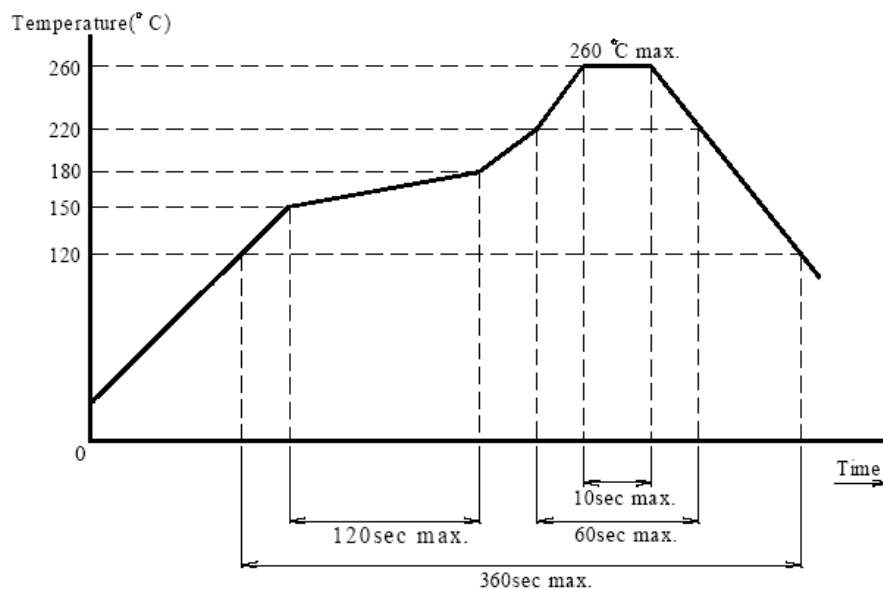
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## Ordering Information

Part numbering system						
QESM04	1	10	JQ	10	08	39.000MHZ
Package type	Vibration mode	Frequency tolerance	Operating temperature range	Frequency stability	Load Capacitance	Nominal Frequency (MHz)
<b>SMD Package</b> <b>QESM04</b> : SMD ceramic 6.0 x 3.5 4 pads	1=Fundamental 3=3 <sup>rd</sup> overtone	10=±10ppm 20=±20ppm 30=±30ppm 50=±50ppm	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 20=±20ppm 30=±30ppm 50=±50ppm	00=series 10=10pF 30=30pF  Please, enter the value of load capacitance	Please enter the nominal frequency

## Suggested Reflow Soldering Profile

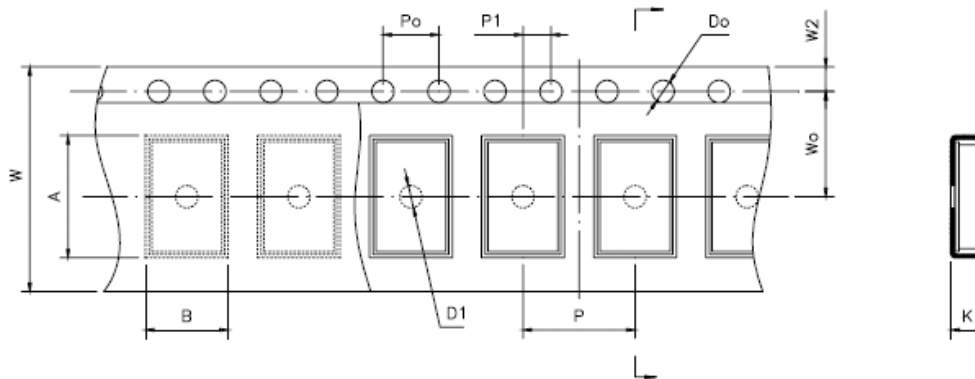


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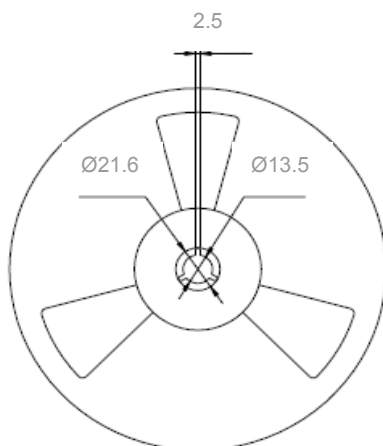
September 01<sup>th</sup>, 2006

## ▣ Tape Drawing



	Code	Dimension	Tolerance
Pitch of components	P	8.0	± 0.1
Pitch of sprocket hole	Po	4.0	± 0.1
Length from hole center to component center	P1	2.0	± 0.1
Width of carrier tape	W	16.0	± 0.3
Width of adhesive tape	W0	7.5	± 0.1
Height of component hole	A	7.1	± 0.1
Width of component hole	B	4.7	± 0.1
Gap of hold down tape and carrier tape	W2	1.75	± 0.1
Diameter of sprocket hole	Do	∅ 1.5	± 0.05
Diameter of feed hole	D1	∅ 1.5	± 0.25
Total of tape thickness	K	1.5	± 0.1

## ▣ Reel Drawing



Multiple : 1Kpcs per Reel

Unit : mm

