



QESM04

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

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September 01th, 2006

Electrical Characteristics

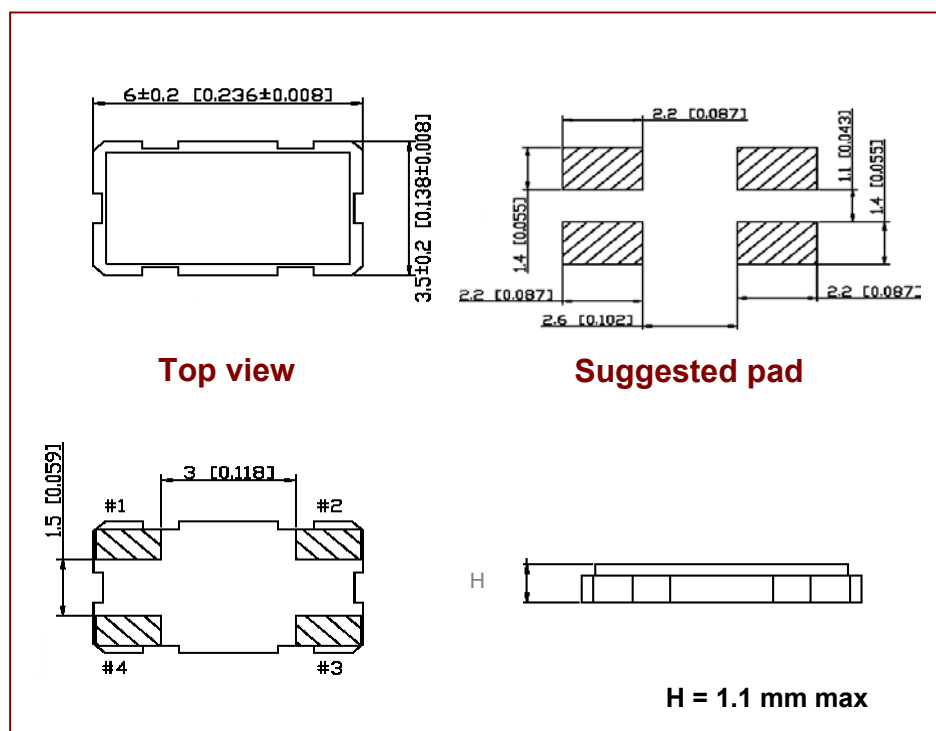
Electrical Parameters	Unit	Minimum	Typical	Maximum	Test conditions
Frequency range	MHz	10		80	
Frequency Tolerance (at 25°C)	± ppm	10	30	50	Refer to Ordering Information
Temperature Stability	± ppm	10	30	50	Refer to Ordering Information
Operating Temperature Range	°C		-20/+70	-40/+85	Refer to Ordering Information
Storage temperature range	°C	-40		+85	
Shunt capacitance C_0	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 _{DC}

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 rd / 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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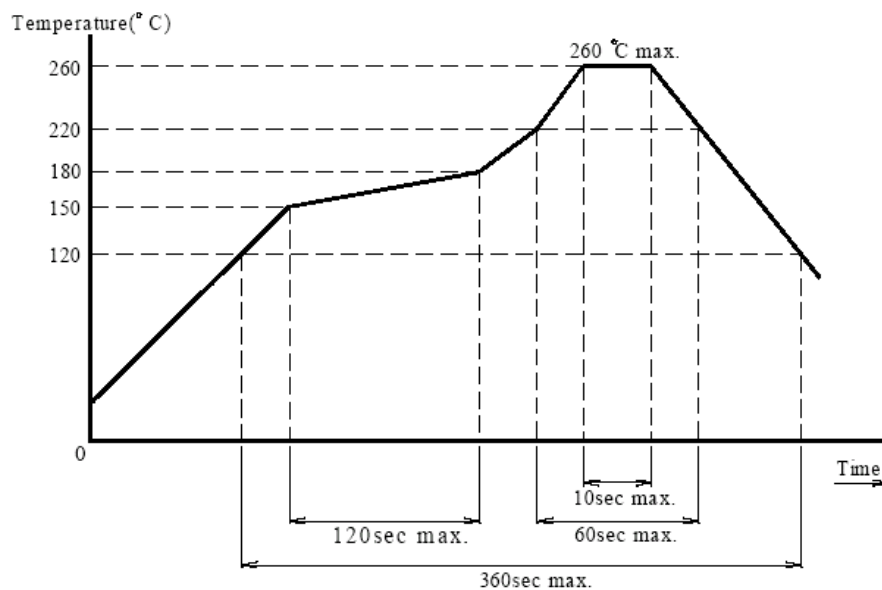
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Ordering Information

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)
SMD Package QESM04 : SMD ceramic 6.0 x 3.5 4 pads	1=Fundamental 3=3 rd 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

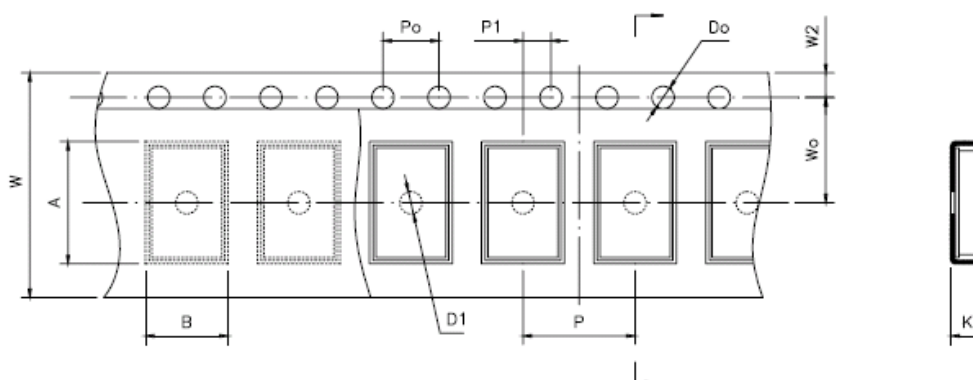


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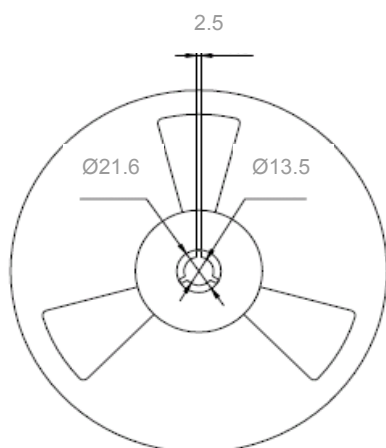
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■ Tape Drawing



	Code	Dimension	Tolerance
Pitch of components	P	8.0	± 0.1
Pitch of sprocket hole	P0	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	D0	Ø 1.5	± 0.05
Diameter of feed hole	D1	Ø 1.5	± 0.25
Total of tape thickness	K	1.5	± 0.1

■ Reel Drawing



Multiple : 1Kpcs per Reel

Unit : mm

