



QESM052

SMD 5.0x3.2 Crystal – Ceramic SMD 2 pads packaged
Specification (Rev-A)

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September 01th, 2006

Electrical Characteristics

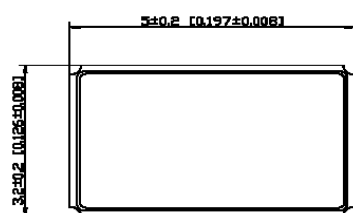
Electrical Parameters	Unit	Minimum	Typical	Maximum	Test conditions
Frequency range	MHz	12		54	
Frequency Tolerance (at 25°C)	± ppm	30	50	100	Refer to Ordering Information
Temperature Stability	± ppm	30	50	100	Refer to Ordering Information
Operating Temperature Range	°C		-10/+70	-40/+85	Refer to Ordering Information
Storage temperature range	°C	-40		+85	
Shunt capacitance C_0	pF			7.0	
Load capacitance	pF	8pF ~ 30pF or series			Refer to Ordering Information
Drive level	µW	10	100	300	
Aging (First Year)	± ppm			5	Ref at 25°C
Insulator resistance	MΩ	500			At 100V _{DC}

Customized specification upon request

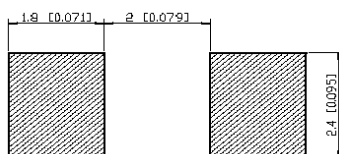
ESR vs. frequency range and Mode of vibration

Frequency range (MHz)	Mode of vibration	Max ESR (Ω)	Frequency range (MHz)	Mode of vibration	Max ESR (Ω)
12.000 to 19.999	Fund. / AT	80	30.000 to 54.000	Fund. / AT	50
20.000 to 29.999	Fund. / AT	70			

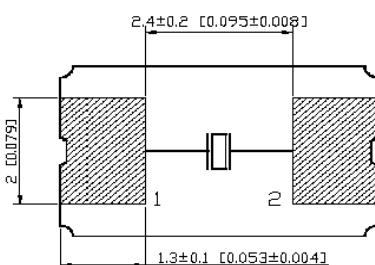
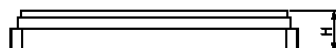
Mechanical Characteristics



Top view



Suggested pad



H = 1.4 mm max

Marking for QESM052

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 : QESM052 is fully RoHS compliant.

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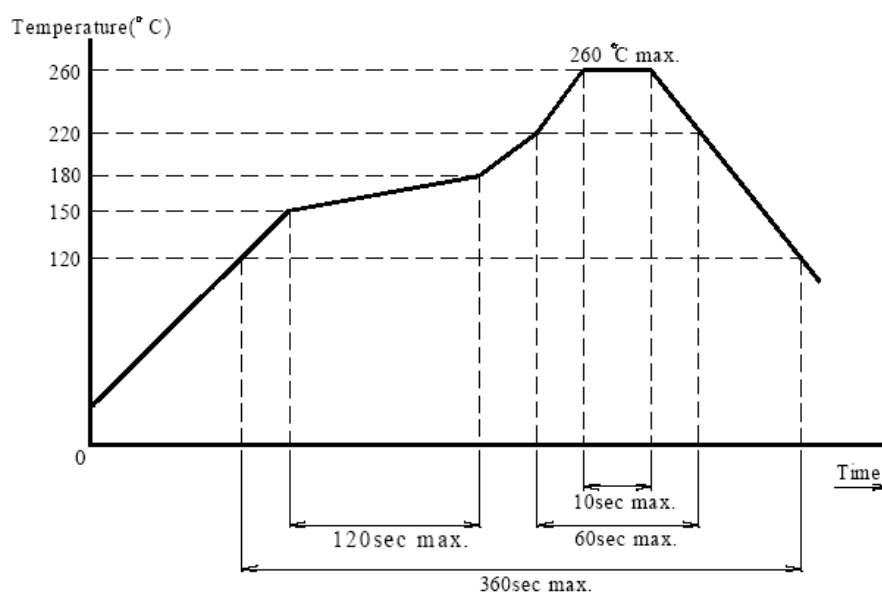
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Ordering Information

Part numbering system						
QESM052	1	30	HQ	30	18	12.000MHZ
↓	↓	↓	↓	↓	↓	↓
Package type	Vibration mode	Frequency tolerance	Operating temperature range	Frequency stability	Load Capacitance	Nominal Frequency (MHz)
SMD Package QESM052 : SMD ceramic 5.0 x 3.2 2 pads	1=Fundamental	30=±30ppm 50=±50ppm 100=±100ppm	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	30=±30ppm 50=±50ppm 100=±100ppm	00=series 10=10pF 30=30pF Please, enter the value of load capacitance	Please enter the nominal frequency

Suggested Reflow Soldering Profile



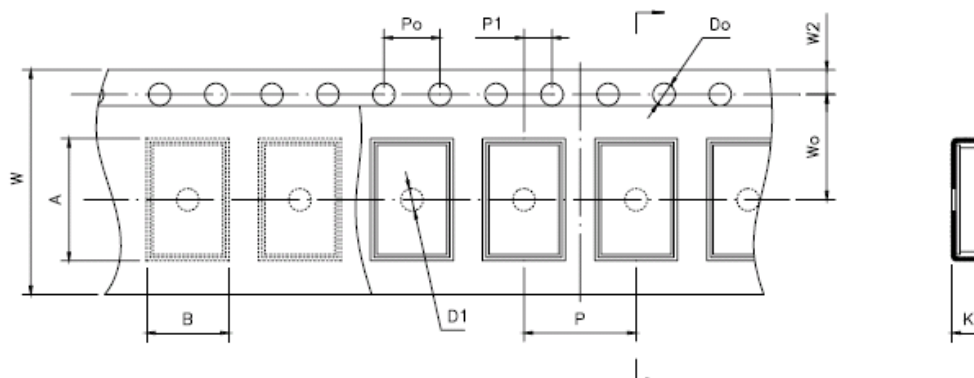
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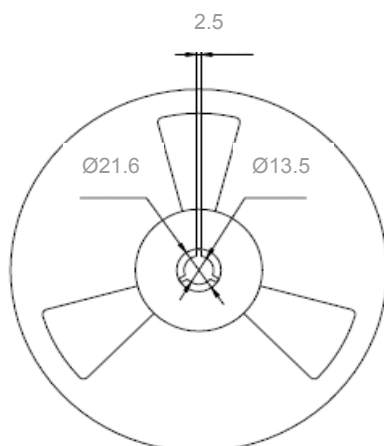
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Tape Drawing



	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	12.0	± 0.3
Width of adhesive tape	W0	5.5	± 0.1
Height of component hole	A	5.5	± 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

