



# QESM052

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

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

## Electrical Characteristics

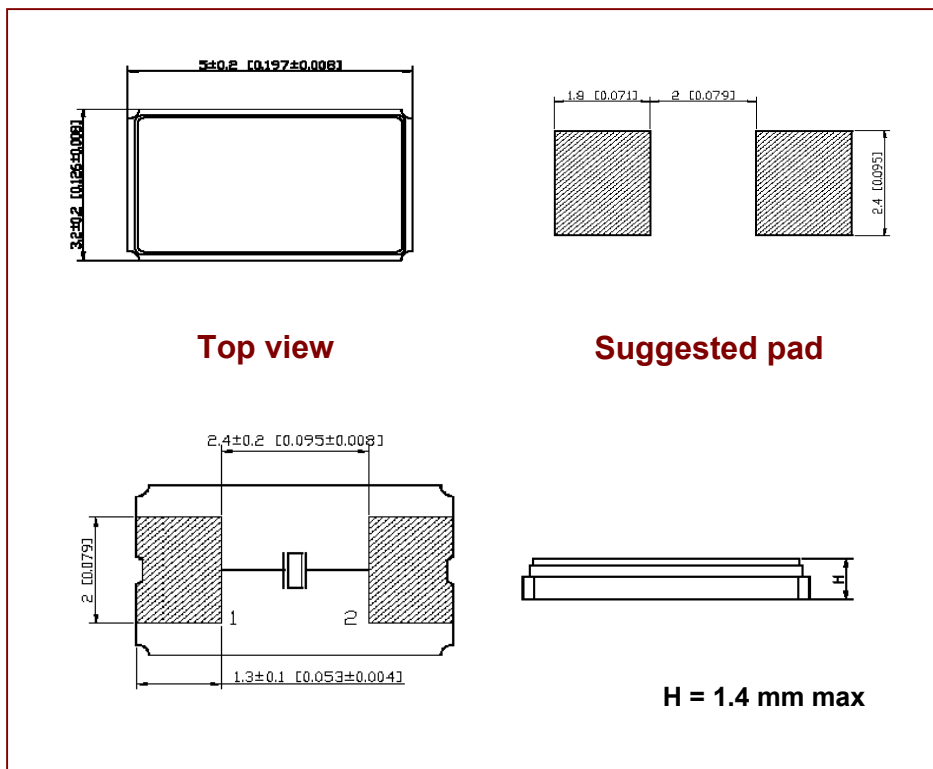
Electrical Parameters	Unit	Minimum	Typical	Maximum	Test conditions
Frequency range	MHz	12		54	
Frequency Tolerance (at 25°C)	± ppm	30	50	100	Refer to Ordering Information
Temperature Stability	± ppm	30	50	100	Refer to Ordering Information
Operating Temperature Range	°C		-10/+70	-40/+85	Refer to Ordering Information
Storage temperature range	°C	-40		+85	
Shunt capacitance C <sub>0</sub>	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 <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)
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



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.

# QESM052

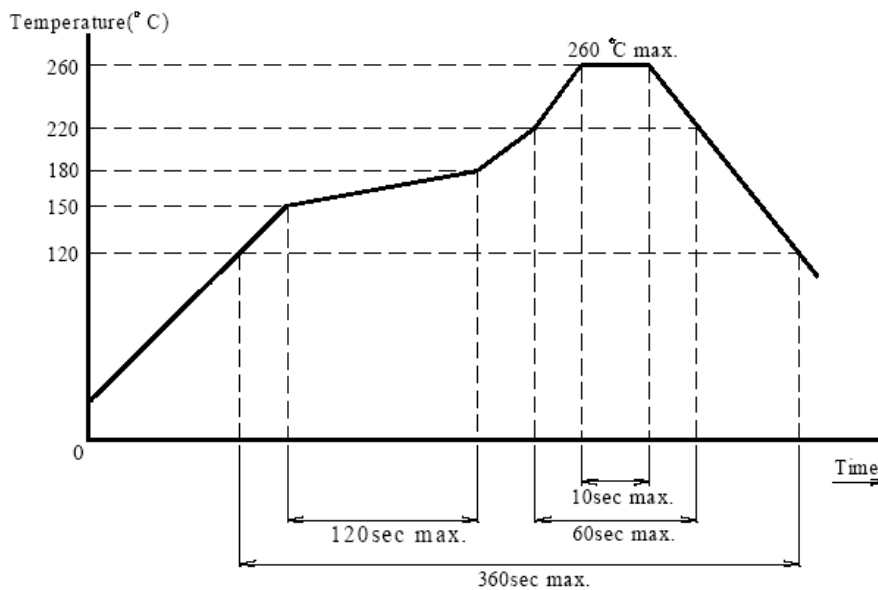
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## Ordering Information

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)
<b>SMD Package</b> <b>QESM052</b> : 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

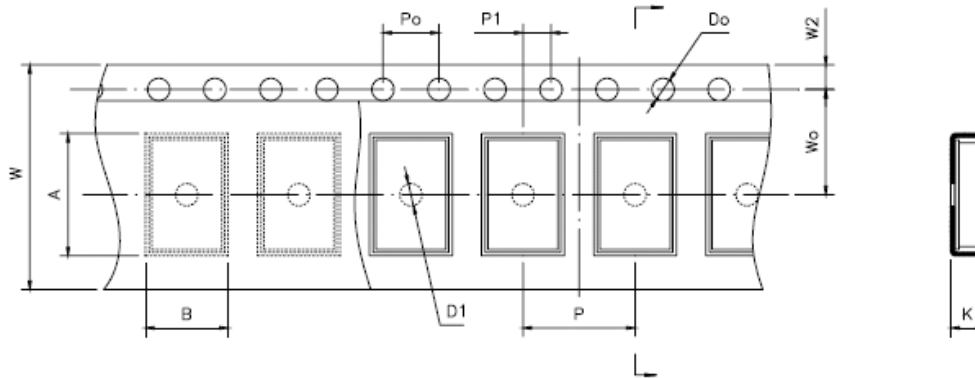


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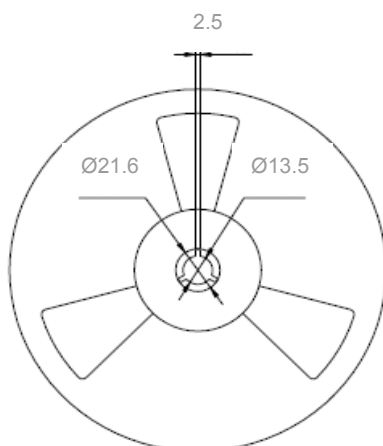
September 01<sup>th</sup>, 2006

## ▣ 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	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	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

