

# QESM07

SMD 3.2x2.5 Crystal – Ceramic SMD packaged  
*Specification (Rev-C)*

---

▣ Electrical Characteristics .....	P01
▣ ESR vs. frequency range and Mode of vibration .....	P01
▣ Mechanical Characteristics .....	P01
▣ Ordering Information .....	P02
▣ Suggested Reflow Soldering profile .....	P02
▣ Tape Drawing .....	P03
▣ Reel Drawing .....	P03

# QESM07

SMD 3.2x2.5 Crystal – Ceramic SMD packaged  
Specification (rev-C)

June 16<sup>th</sup>, 2016

### Electrical Characteristics

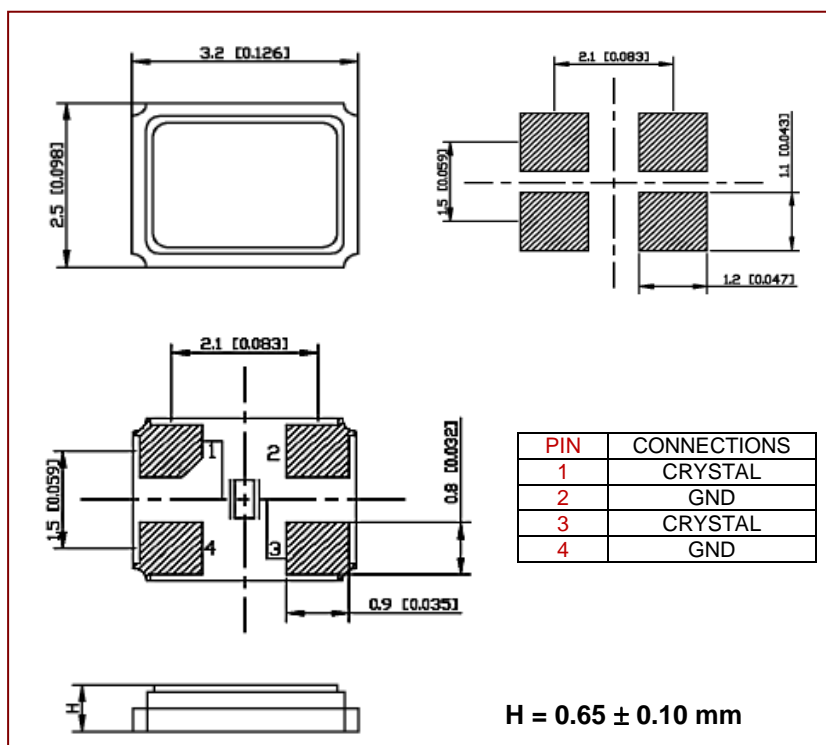
Electrical Parameters	Unit	Minimum	Typical	Maximum	Test conditions
Frequency range	MHz	10		64	
Frequency Tolerance (at 25°C)	± ppm	10	15	30	Refer to Ordering Information
Temperature Stability	± ppm	10	15	30	Refer to Ordering Information
Operating Temperature Range	°C		-20/+70	-40/+85	Refer to Ordering Information
Storage temperature range	°C	-55		+125	
Shunt capacitance C <sub>0</sub>	pF			3.0	
Load capacitance	pF	6pF ~ 20pF			Refer to Ordering Information
Drive level	µW		100	200	
Aging (First Year)	± ppm			2	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)
10.000 to 11.999	Fundamental (AT-cut)	150
12.000 to 19.999	Fundamental (AT-cut)	100
20.000 to 23.999	Fundamental (AT-cut)	70
24.000 to 64.000	Fundamental (AT-cut)	50

### Mechanical Characteristics



#### Marking for QESM07

Line 1	Rakon code (6 digits)
Line 2	T+date code (4digits)

#### 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 :** Storage temperature is only for the product itself. The temperature for the packing material is -4°C to +40°C.

**Note 2 :** QESM07 is fully RoHS compliant.

# QESM07

SMD 3.2x2.5 Crystal – Ceramic SMD packaged

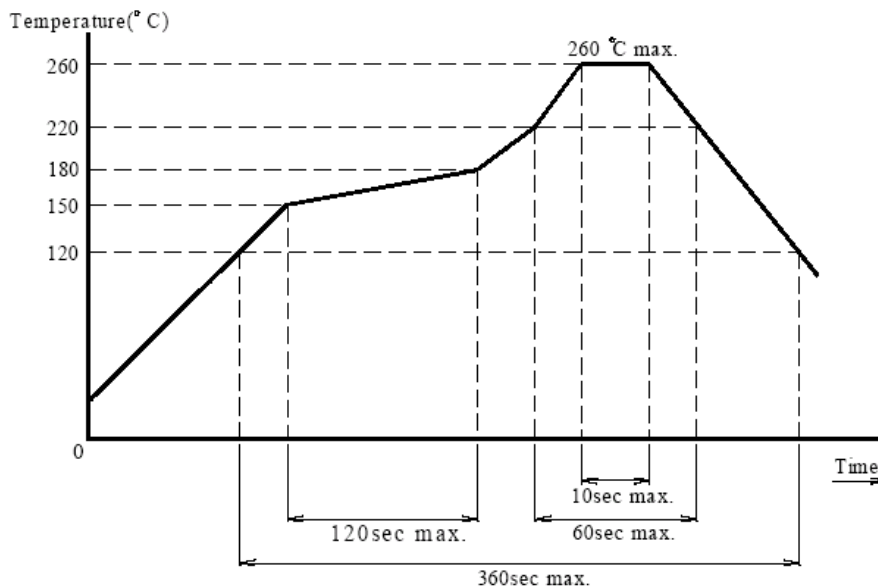
Specification (rev-C)

June 16<sup>th</sup>, 2016

## Ordering Information

Part numbering system						
QESM07	1	10	HQ	10	10	14.7456MHZ
Package type	Vibration mode	Frequency tolerance	Operating temperature range	Frequency stability	Load Capacitance	Nominal Frequency (MHz)
<b>SMD Package</b> QESM07 : SMD ceramic 3.2 x 2.5	1=Fundamental	10=±10ppm 15=±15ppm 30=±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 15=±15ppm 30=±30ppm	10=10pF  Please, enter the value of load capacitance	Please enter the nominal frequency

## Suggested Reflow Soldering Profile



### Note:

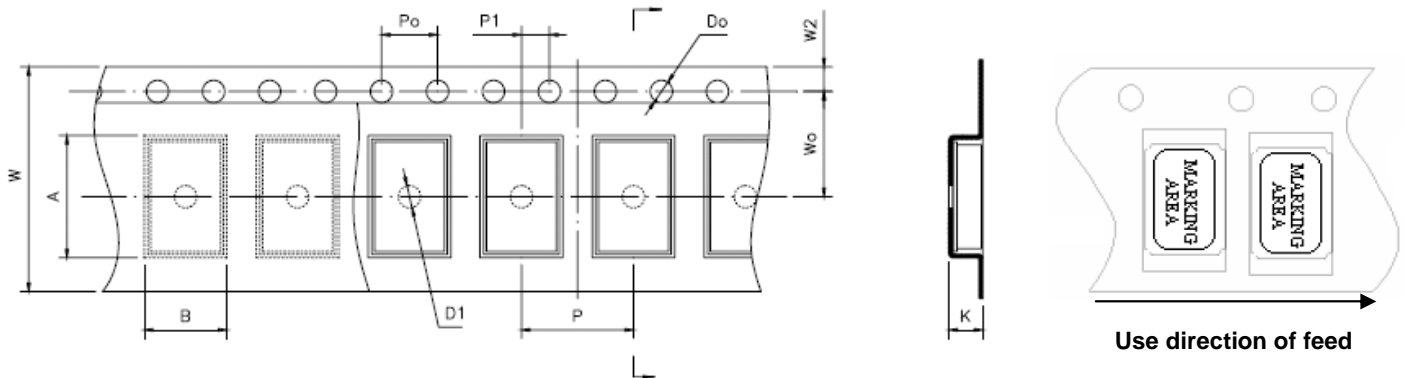
The product has been tested to withstand the Reflow Profile shown. The Reflow Profile used to solder Temexpress products is determined by the solder paste Manufacturer's specification. It is recommended that the Reflow Profile used does not exceed the one shown above.

## QESM07

SMD 3.2x2.5 Crystal – Ceramic SMD packaged  
Specification (rev-C)

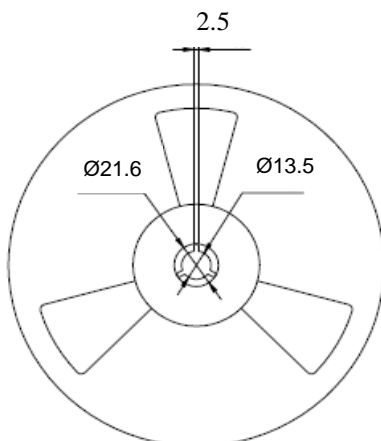
June 16<sup>th</sup>, 2016

### ▣ Tape Drawing



Item	Code	Dimension	Tolerance
Pitch of components	P	4.0	± 0.1
Pitch of sprocket hole	P <sub>0</sub>	4.0	± 0.1
Length from hole center to component center	P <sub>1</sub>	2.0	± 0.1
Width of carrier tape	W	8.0	± 0.3
Width of adhesive tape	W <sub>0</sub>	3.5	± 0.1
Height of component hole	A	3.5	± 0.1
Width of component hole	B	2.8	± 0.1
Gap of hold down tape and carrier tape	W <sub>2</sub>	0.5	± 0.1
Diameter of sprocket hole	D <sub>0</sub>	∅ 1.5	± 0.05
Diameter of feed hole	D <sub>1</sub>	∅ 1.5	± 0.25
Total of tape thickness	K	1.0	± 0.1

### ▣ Reel Drawing



**Multiple :**  
3 000 pieces per reel

