
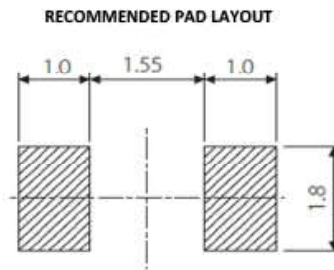
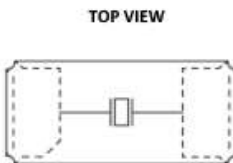
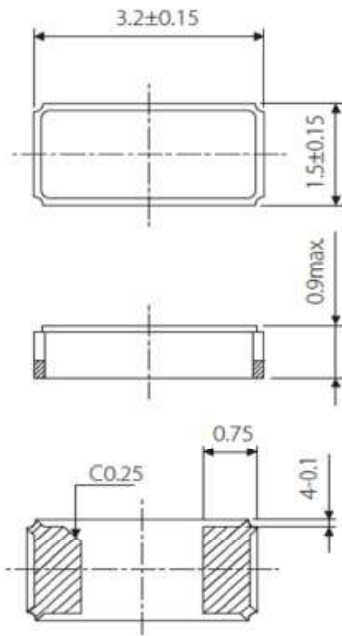


Table 1. Electrical Performance

| Parameter | Symbol | Min. | Typ | Max | Units |
|---|------------|-------------|--------|-----|---------------------|
| Nominal Frequency | F_{NOM} | | 32.768 | | kHz |
| Crystal Mode | | Tuning Fork | | | |
| Operating Temperature Range | T_{OP} | -40 | | 85 | °C |
| Frequency Stability | | | | | |
| Stability Over T_{OP} | F_{STAB} | -0.040 | | | ppm/°C ² |
| Turnover Temperature | T_P | 20 | 25 | 30 | °C |
| Frequency Tolerance (Referenced to 25 °C) | F_{TOL} | | | ±20 | ppm |
| Load Capacitance | C_L | | 12.5 | | pF |
| Equivalent Series Resistance | ESR | | | 70 | KOhms |
| Shunt Capacitance | C_o | 0.6 | | 1.2 | pF |
| Motional Capacitance | C_1 | 3.0 | | 4.4 | fF |
| Drive Level | | | 0.1 | 0.5 | uW |
| Q Factor | | 13000 | | | |
| Aging / 1st year (at 25 °C) | F_{AGE} | | | ±3 | ppm |
| Insulation Resistance | | 500 | | | MOhm |
| Storage Temperature | T_{STO} | -55 | | 125 | °C |

Product is compliant to RoHS directive and fully compatible with lead free assembly. 

Package Drawing



All Dimensions in mm

Marking Information

VYYMC

where

V = Vectron

YY = Manufacturing Year (Ex: 19: 2019)

M = Production Month (A: Jan, B: Feb., C: March...)

C = Manufacturing Location

Alternative Markings

TSSFYWW

where

TSS = Product Identifier

F = 12.5 pF

Y = Year

WW = Week

32YWW

where

32 = 32.768kHz

Y = Year

WW = Week

YM###

where

Y = Year

M = Month

= Lot Number

Reliability & IR Compliance

Solderprofile:

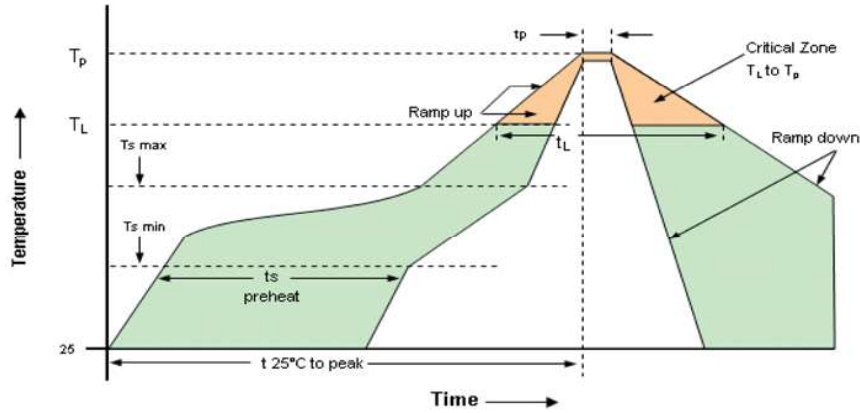


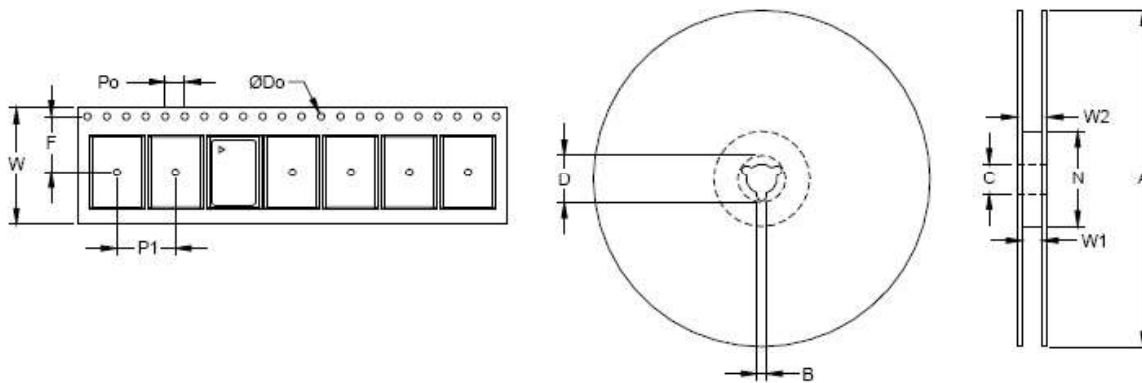
Table 2: Reflow Profile

| Parameter | Symbol | Value |
|----------------------------------|-------------|---|
| PreHeat Time Ts-min Ts-max | t_s | 60 sec Min, 260 sec Max 150°C 200°C |
| Ramp Up | R_{UP} | 3 °C/sec Max |
| Time Above 217 °C | t_L | 60 sec Min, 150 sec Max |
| Time To Peak Temperature | T_{AMB-P} | 480 sec Max |
| Time at 260 °C | t_p | 30 sec Max |
| Ramp Down | R_{DN} | 6 °C/sec Max |

Tape & Reel

Table 3 . Tape and Reel Dimensions

| Dimension | Tape Dimensions (mm) | | | | | Reel Dimensions (mm) | | | | | | | | |
|-----------|----------------------|-----|-----|-----|-----|----------------------|---|----|----|----|------|------|------------|--|
| | W | F | Do | Po | P1 | A | B | C | D | N | W1 | W2 | # Per Reel | |
| VMK3 | 12 | 5.5 | 1.5 | 4.0 | 4.0 | 180 | 2 | 13 | 21 | 60 | 13.0 | 15.4 | 3000 | |



Ordering Information

VMK3- 9005- 32K7680000xx

Product

3.2 X 1.5mm, Crystal

Source Control

Drawing Number

Packaging

TR: Tape and Reel

blank: Cut Tape / non TR quantities

Frequency in kHz

Example:

VMK3-9005-32K7680000TR

Tape and Reel

VMK3-9005-32K7680000

Cut Tape

Revision History

| Revision Date | Description |
|---------------|-----------------------------------|
| Dec 12, 2019 | Initial |
| Feb 15, 2021 | Add tape and reel ordering option |
| May 15, 2021 | Update marking |
| | |

Contact Information

USA:

100 Watts Street
Mt Holly Springs, PA 17065
Tel: 1.717.486.3411
Fax: 1.717.486.5920

Europe:

Landstrasse
74924 Neckarbischofsheim
Germany
Tel: +49 (0) 7268.801.0
Fax: +49 (0) 7268.801.281



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