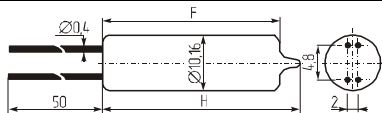
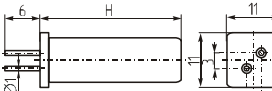
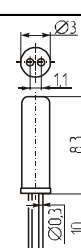
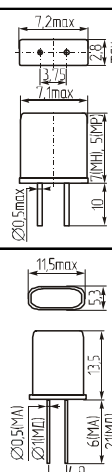
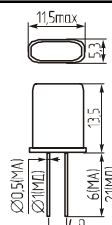
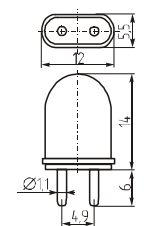
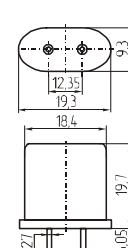


## 3.1.2 Кварцевые резонаторы, выпускаемые в России

| Марка        | Корпус               | Частотный диапазон, МГц | Порядок колебаний (гармоника) | Допустимое отклонение частоты при 25°С, x10 <sup>-6</sup> (ppm) | Допустимое отклонение в диапазоне рабочих температур, x10 <sup>-6</sup> (ppm) | Диапазон температур, °С | Размеры, мм  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|--------------|----------------------|-------------------------|-------------------------------|---|---|-------------------------|--|------------|-------|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| PK01         | Э                    | 0,3 ~ 0,87              | 1                             | ±15   | ±30 ~ ±100  | +5 ~ +45                | <div><table><thead><tr><th>Тип</th><th>F, мм</th><th>H, мм</th></tr></thead><tbody><tr><td>ЭА</td><td>15</td><td>20</td></tr><tr><td>ЭБ</td><td>20</td><td>27</td></tr><tr><td>ЭВ</td><td>25</td><td>30</td></tr><tr><td>ЭГ</td><td>30</td><td>37</td></tr><tr><td>ЭД</td><td>35</td><td>42</td></tr><tr><td>ЭЕ</td><td>40</td><td>47</td></tr><tr><td>ЭЖ</td><td>45</td><td>52</td></tr><tr><td>ЭИ</td><td>55</td><td>62</td></tr><tr><td>ЭК</td><td>65</td><td>72</td></tr><tr><td>ЭМ</td><td>75</td><td>82</td></tr><tr><td>ЭН</td><td>80</td><td>87</td></tr><tr><td>ЭТ</td><td>38</td><td>44</td></tr></tbody></table></div> | Тип        | F, мм | H, мм | ЭА | 15 | 20 | ЭБ | 20 | 27 | ЭВ | 25 | 30 | ЭГ | 30 | 37 | ЭД | 35 | 42 | ЭЕ | 40 | 47 | ЭЖ | 45 | 52 | ЭИ | 55 | 62 | ЭК | 65 | 72 | ЭМ | 75 | 82 | ЭН | 80 | 87 | ЭТ | 38 | 44 |
|              |                      |                         |                               |   | Тип   | F, мм                   |  | H, мм      |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭА           | 15                   | 20                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭБ           | 20                   | 27                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭВ           | 25                   | 30                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭГ           | 30                   | 37                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭД           | 35                   | 42                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭЕ           | 40                   | 47                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭЖ           | 45                   | 52                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭИ           | 55                   | 62                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭК           | 65                   | 72                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭМ           | 75                   | 82                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭН           | 80                   | 87                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ЭТ           | 38                   | 44                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      |                         |                               |   | ±100  | -10 ~ +60               |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| РГ01         | У                    | 0,05 ~ 0,2              | 1                             | ±20   | ±100 ~ ±300   | -60 ~ +100              | <div><table><thead><tr><th>Тип</th><th>H, мм</th></tr></thead><tbody><tr><td>УБ</td><td>19</td></tr><tr><td>УВ</td><td>22</td></tr><tr><td>УГ</td><td>25</td></tr><tr><td>УД</td><td>28</td></tr><tr><td>УЕ</td><td>34</td></tr></tbody></table></div>  | Тип        | H, мм | УБ    | 19 | УВ | 22 | УГ | 25 | УД | 28 | УЕ | 34 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Тип          |                      | H, мм                   |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| УБ           |                      | 19                      |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| УВ           | 22                   |                         |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| УГ           | 25                   |                         |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| УД           | 28                   |                         |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| УЕ           | 34                   |                         |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| РГ02         | 0,2 ~ 0,75           | 1                       | ±20                           | ±300  | -60 ~ +85   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK168        |                      | 0,05 ~ 0,75             | 1                             | ±20; ±30  | ±100 ~ ±300   | -60 ~ +100              |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK441        | 03x08                | 10,0 ~ 45,0             | 1                             | ±10 ~ ±100  | ±2,5 ~ ±50  | -60 ~ +85               | <div></div>   |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 30,0 ~ 105,0            | 3                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 75,0 ~ 165,0            | 5                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK418        | HC45U, MH (MP)       | 4,0(8,0)~45,0           | 1                             | ±5 ~ ±30  | ±2,5 ~ ±50  | -60 ~ +85               | <div></div>  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 30,0 ~ 105,0 |                      | 3                       |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 75,0 ~ 165,0 |                      | 5                       |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK418T       |                      | 9,59 ~ 12,81            | 1                             | ±5 ~ ±20  | ±2,5 ~ ±50  | -50 ~ +70               |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK419        |                      | 4,0(8,0) ~ 45,0         | 1                             | ±5 ~ ±30  | ±2,5 ~ ±50  | -60 ~ +85               |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 30,0 ~ 105,0            | 3                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK419T       |                      | 75,0 ~ 165,0            | 5                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 9,59 ~ 12,81            | 1                             | ±5 ~ ±20  |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| РГ05         | HC49U, HC50U, MA, MD | 4,0 ~ 20,0              | 1                             | ±10 ~ ±25   | ±5 ~ ±75  | -60 ~ +100              | <div></div>   |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 18,0 ~ 50,0  |                      | 3                       |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 50,0 ~ 100,0 |                      | 5                       |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK169MA      |                      | 1,5 ~ 21,0              | 1                             | ±10 ~ ±75   | ±3 ~ ±150   | -60 ~ +100              |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK169MD      |                      | 18,0 ~ 50,0             | 3                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 50,0 ~ 100,0            | 5                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| K1           | HC29U, KA            | 5,0 ~ 20,5              | 1                             | ±5, ±10   | ±1,5 ~ ±40  | -60 ~ +100              | <div></div>   |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 20,5 ~ 60,0             | 3                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 60,0 ~ 100,0            | 5                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK60         |                      | 20,0 ~ 33,0             | 1                             | ±10 ~ ±20   | ±2 ~ ±40  | -60 ~ +100              |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 60,0 ~ 100,0            | 3                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 100,0 ~ 150,0           | 5                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK62         |                      | 100,0 ~ 150,0           | 5                             | ±10, ±15  | ±30   | -60 ~ +85               |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 150,0 ~ 230,0           | 7                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 5,0 ~ 20,5              | 1                             | ±5 ~ ±20  | ±2 ~ ±75  | -60 ~ +85               |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK100        |                      | 20,5 ~ 100,0            | 3                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 100,0 ~ 150,0           | 5                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 150,0 ~ 230,0           | 7                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK259        |                      |                         | 8,0 ~ 30,0                    | 1   | ±5  | -23 ~ 14                |  | -60 ~ +100 |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| РГ06         | HC36U, БА            | 0,75 ~ 1,8              | 1                             | ±10 ~ ±20   | ±3 ~ ±50  | -60 ~ +100              | <div></div>   |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| РГ07         |                      | 1,8 ~ 8,0               | 1                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 8,0 ~ 20,0              | 1                             | ±10 ~ ±25   | ±5 ~ ±75  | -60 ~ +100              |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| РГ08         |                      | 18,0 ~ 50,0             | 3                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 50,0 ~ 100,0            | 5                             | ±10 ~ ±75   | ±3 ~ ±150   | -60 ~ +100              |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK170        |                      | 0,75 ~ 8,0              | 1                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              |                      | 8,0 ~ 20,0              | 1                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| PK171        |                      | 18 ~ 50,0               | 3                             |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|              | 50,0 ~ 100,0         | 5                       |                               |   |   |                         |  |            |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |