

PIT-RADWAR S.A. WROCLAW DIVISION
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## Reed relays type K-32/Nx1

This product is in accordance with RoHs

## Reed relays with 1 to 4 form A contacts (normally open) for PCB's.

| PARAMETERS | Unit | TYPE |
| :--- | :---: | :---: |
|  |  | K-32/Nx1 |

## 1. CONTACT PARAMETERS

| Switching power | $\max$ | $\mathrm{W}, \mathrm{VA}$ | 60 |
| :--- | :---: | :---: | :---: |
| Switching voltage | $\max$ | $\mathrm{V}_{\mathrm{DC}}$ | 200 |
|  |  | $\mathrm{~V}_{\mathrm{AC}}$ | 230 |
| Switching current | $\max$ | A | 3 |
| Contact resistance | $\max$ | mA | 150 |
| Life expectancy at 60V, 1A |  | operations | $7,5 \times 10^{6}$ |

## 2. RELAY PARAMETERS

| Operating voltage range |  | V | see p. 3 |
| :---: | :---: | :---: | :---: |
| Coil resistance |  | A | see p. 3 |
| Operate time incl. bounce time for: K-32 / $1 \times 1$ | max | ms | $\begin{aligned} & 2,5 \\ & 3,5 \\ & 4,5 \\ & 5,5 \end{aligned}$ |
| Release time | max | ms | 1 |
| Test voltage:: contact contact/ contact contact/ coil contact/ shield coil/ shield | min | $\mathrm{V}_{\text {AC }}$ | $\begin{aligned} & 400 \\ & 500 \\ & 500 \\ & 500 \\ & 500 \end{aligned}$ |
| Insulation resistance | min | A | $10^{9}$ |
| Admissible ambient temperature |  |  | $40^{\circ} \mathrm{C} \div 70^{\circ}$ |

## 3. LIST OF COILS AND OPERATING VOLTAGE RANGE

| Symbol of relay | Contact arrangement | Index No | Coil resistance $\mathrm{R}_{\mathrm{N}}$ <br> [A] $t=20^{\circ} \mathrm{C}$ | Supply voltage, $\mathrm{t}=20^{\circ} \mathrm{C}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\mathrm{U}_{\mathrm{N}}$ [V] | $\mathrm{U}_{\text {MIN }}$ [V] | $\mathrm{U}_{\text {MAX }}[\mathrm{V}]$ |
| K-32/1x1 | 1 form A | 8-4441-659-1 | $180 \pm 10 \%$ |  | 3,6 | 23,0 |
| K-32/2x1 | 2 form A | 8-4441-661-1 | $140 \pm 10 \%$ | 6 | 3,9 | 21,5 |
| K-32/3x1 | 3 form A | 8-4441-662-1 | $75 \pm 10 \%$ | 6 | 4,4 | 16,8 |
| K-32/4x1 | 4 form A | 8-4441-663-1 | $45 \pm 10 \%$ |  | 4,2 | 14,0 |
| K-32/1x1 | 1 form A | 8-4441-659-2 | $700 \pm 10 \%$ |  | 7,2 | 45,4 |
| K-32/2x1 | 2 form A | 8-4441-661-2 | $500 \pm 10 \%$ | 12 | 7,8 | 40,6 |
| K-32/3x1 | 3 form A | 8-4441-662-2 | $250 \pm 10 \%$ | 12 | 8,8 | 30,7 |
| K-32/4x1 | 4 form A | 8-4441-663-2 | $170 \pm 10 \%$ |  | 9,0 | 27,2 |
| K-32/1x1 | 1 form A | 8-4441-659-3 | $2500 \pm 15 \%$ |  | 15,0 | 83,4 |
| K-32/2x1 | 2 form A | 8-4441-661-3 | $2000 \pm 15 \%$ | 24 | 16,2 | 79,0 |
| K-32/3x1 | 3 form A | 8-4441-662-3 | $1000 \pm 10 \%$ | 24 | 17,5 | 61,4 |
| K-32/4x1 | 4 form A | 8-4441-663-3 | $760 \pm 10 \%$ |  | 18,9 | 57,6 |
| K-32/1x1 | 1 form A | 8-4441-659-4 | $10000 \pm 15 \%$ |  | 30,0 | 166,8 |
| K-32/2x1 | 2 form A | 8-4441-661-4 | $6200 \pm 15 \%$ | 48 | 30,0 | 139,0 |
| K-32/3x1 | 3 form A | 8-4441-662-4 | $3000 \pm 15 \%$ | 48 | 36,0 | 103,4 |
| K-32/4x1 | 4 form A | 8-4441-663-4 | $2200 \pm 15 \%$ |  | 35,4 | 95,2 |

## 4. DIMENSIONS AND TERMINAL ARRANGEMENTS



## Ordering Information

When ordering relay please specify:

- symbol of relay
- index number


## Recommendation for users

When mounting into printed circuit boards, it is advisable to observe the following points to avoid damage to the relays:

- the time of continuous heating of terminals during soldering should not exceed 5 s ,
- the soldering iron should not press on terminals during soldering,
- the relays should not be mounted near sources of strong magnetic fields, e.g. transformers, permanent magnets etc.,
- the relays should operate at nominal supply voltages.

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## Reed relays type K-32/Nx21

This product is in accordance with RoHs

## Reed relay K-32 with 1 or 2 form C contacts

 (changeover) for PCB's.| PARAMETERS | Unit | TYPE |
| :--- | :---: | :---: |
|  |  | K-32/Nx21 |

## 1. CONTACT PARAMETERS

| Switching power | $\max$ | $\mathrm{W}, \mathrm{VA}$ | 16 |
| :--- | :---: | :---: | :---: |
| Switching voltage | $\max$ | $\mathrm{V}_{\mathrm{DC}}$ | 110 |
|  |  | $\mathrm{~V}_{\mathrm{AC}}$ | 200 |
| Switching current | $\max$ | A | 1 |
| Contact resistance | $\max$ | mA | 200 |
| Life expectancy at 24V, 0,2A |  | operations | $1 \times 10^{6}$ |

## 2. RELAY PARAMETERS

| Operating voltage range |  | V | see p. 3 |
| :---: | :---: | :---: | :---: |
| Coil resistance |  | A | see p. 3 |
| Operate time incl. bounce time for: $\begin{aligned} & \mathrm{K}-32 / 1 \times 21 \\ & \mathrm{~K}-32 / 2 \times 21 \end{aligned}$ | max | ms | $\begin{aligned} & 2,5 \\ & 4,0 \end{aligned}$ |
| Release time | max | ms | 2,5 |
| Test voltage: contact contact/ contact contact/ coil contact/ shield coil/ shield | min | $\mathrm{V}_{\mathrm{AC}}$ | $\begin{aligned} & 400 \\ & 500 \\ & 500 \\ & 500 \\ & 500 \end{aligned}$ |
| Insulation resistance | min | A | $10^{9}$ |
| Admissible ambient temperature |  |  | $-40^{\circ} \mathrm{C} \div 70^{\circ} \mathrm{C}$ |

3 LIST OF COILS AND OPERATING VOLTAGE RANGE

| Symbol of relay | Contact arrangement | Index No | Coil resistance $R_{N}$ <br> [A] $t=20^{\circ} \mathrm{C}$ | Supply voltage, $\mathrm{t}=20^{\circ} \mathrm{C}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\mathrm{U}_{\mathrm{N}}[\mathrm{V}]$ | $\mathrm{U}_{\text {MIN }}$ [V] | $\mathrm{U}_{\text {MAX }}[\mathrm{V}]$ |
| $\begin{aligned} & \mathrm{K}-32 / 1 \times 21 \\ & \mathrm{~K}-32 / 2 \times 21 \end{aligned}$ | 1 changeover <br> 2 changeover | $\begin{aligned} & 8-4441-705-1 \\ & 8-4441-706-1 \end{aligned}$ | $\begin{array}{r} 180 \pm 10 \% \\ 95 \pm 10 \% \end{array}$ | 6 | $\begin{aligned} & 3,8 \\ & 4,0 \end{aligned}$ | $\begin{aligned} & 23,0 \\ & 17,7 \end{aligned}$ |
| $\begin{aligned} & \mathrm{K}-32 / 1 \times 21 \\ & \mathrm{~K}-32 / 2 \times 21 \end{aligned}$ | 1 changeover <br> 2 changeover | $\begin{aligned} & 8-4441-705-2 \\ & 8-4441-706-2 \end{aligned}$ | $\begin{aligned} & 700 \pm 10 \% \\ & 370 \pm 10 \% \end{aligned}$ | 12 | $\begin{aligned} & 7,6 \\ & 8,0 \end{aligned}$ | $\begin{aligned} & 45,4 \\ & 34,9 \end{aligned}$ |
| $\begin{aligned} & \mathrm{K}-32 / 1 \times 21 \\ & \mathrm{~K}-32 / 2 \times 21 \end{aligned}$ | 1 changeover 2 changeover | $\begin{aligned} & 8-4441-705-3 \\ & 8-4441-706-3 \end{aligned}$ | $\begin{aligned} & 2500 \pm 15 \% \\ & 1500 \pm 10 \% \end{aligned}$ | 24 | $\begin{aligned} & 15,8 \\ & 16,0 \end{aligned}$ | $\begin{aligned} & 83,4 \\ & 70,4 \end{aligned}$ |
| $\begin{aligned} & \mathrm{K}-32 / 1 \times 21 \\ & \mathrm{~K}-32 / 2 \times 21 \end{aligned}$ | 1 changeover 2 changeover | $\begin{aligned} & 8-4441-705-4 \\ & 8-4441-706-4 \end{aligned}$ | $\begin{array}{r} 10000 \pm 15 \% \\ 5000 \pm 15 \% \end{array}$ | 48 | $\begin{aligned} & 31,6 \\ & 33,0 \end{aligned}$ | $\begin{aligned} & 166,8 \\ & 124,9 \end{aligned}$ |

## 4. DIMENSIONS AND TERMINAL ARRANGEMENTS

## K-32/Nx21



| Reed relay | Dimension a <br> (max) |
| :---: | :---: |
| K-32/1x21 | $16,5 \mathrm{~mm}$ |
| $\mathrm{~K}-32 / 2 \times 21$ | $22,5 \mathrm{~mm}$ |



View from the bottom side of relay

$$
m=2,5
$$

$\mathrm{K}-32 / 1 \times 21$
A


## Ordering Information

When ordering relay please specify:

- symbol of relay
- index number


## Recommendation for users

When mounting into printed circuit boards, it is advisable to observe the following points to avoid damage to the relays:

- the time of continuous heating of terminals during soldering should not exceed 5 s ,
- the soldering iron should not press on terminals during soldering,
- the relays should not be mounted near sources of strong magnetic fields, e.g. transformers, permanent magnets etc.,
- $\quad$ the relays should operate at nominal supply voltages.

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Reed relays type K-32/Nx2
This product is in accordance with RoHs

## Reed relay K-32 with 1 or 2 form B contacts

 (normally closed) for PCB's.| PARAMETERS | Unit | TYPE |
| :--- | :---: | :---: |
|  |  | K-32/Nx2 |

## 1. CONTACT PARAMETERS

| Switching power | $\max$ | $\mathrm{W}, \mathrm{VA}$ | 60 |
| :--- | :---: | :---: | :---: |
| Switching voltage | $\max$ | $\mathrm{V}_{\mathrm{DC}}$ | 200 |
|  |  | $\mathrm{~V}_{\mathrm{AC}}$ | 230 |
| Switching current | $\max$ | A | 1 |
| Initial contact resistance | $\max$ | mA | 150 |
| Life expectancy at 60V, 1A |  | operations | $7,5 \times 10^{6}$ |

## 2. RELAY PARAMETERS

| Operating voltage range |  | V | see p. 3 |
| :---: | :---: | :---: | :---: |
| Coil resistance |  | A | see p. 3 |
| Operate time for: $\begin{aligned} & \mathrm{K} 32 \text { / } 1 \times 2 \\ & \text { K32 / } 2 \times 2 \end{aligned}$ | max | ms | $\begin{gathered} 2,5 \\ 3 \end{gathered}$ |
| Release time | max | ms | 1,5 |
| Test voltage: : contact contact/ contact contact/ coil contact/ shield coil/ shield | min | $\mathrm{V}_{\text {AC }}$ | $\begin{aligned} & 400 \\ & 500 \\ & 500 \\ & 500 \\ & 500 \end{aligned}$ |
| Insulation resistance | min | A | $10^{9}$ |
| Admissible ambient temperature |  |  | $-25^{\circ} \mathrm{C} \div 55^{\circ} \mathrm{C}$ |

3, LIST OF COILS AND OPERATING VOLTAGE RANGE

| Symbol of relay | Contact arrangemen $_{t}$ | Index No | Coil resistance $\mathrm{R}_{\mathrm{N}}$ <br> [A] $t=20^{\circ} \mathrm{C}$ | Supply voltage, $\mathrm{t}=20^{\circ} \mathrm{C}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\mathrm{U}_{\mathrm{N}}[\mathrm{V}]$ | $\mathrm{U}_{\text {MIN }}$ [V] | $\mathrm{U}_{\text {MAX }}[\mathrm{V}]$ |
| K-32/1x2 | 1 form B | 8-4441-675-1 | $100 \pm 10 \%$ | 6 | 4,2 | 8,5 |
| K-32/2x2 | 2 form B | 8-4441-676-1 | $100 \pm 10 \%$ |  | 4,7 | 8,6 |
| K-32/1x2 | 1 form B | 8-4441-675-2 | $410 \pm 10 \%$ | 12 | 8,5 | 17,0 |
| K-32/2x2 | 2 form B | 8-4441-676-2 | $410 \pm 10 \%$ |  | 9,6 | 16,4 |
| K-32/1x2 | 1 form B | 8-4441-675-3 | $1640 \pm 15 \%$ | 24 | 17,8 | 34,0 |
| K-32/2x2 | 2 form B | 8-4441-676-3 | $1640 \pm 10 \%$ |  | 19,2 | 32,8 |

## 4. OPERATING VOLTAGE CONNECTION

| Operations | Operating voltage connection |  |
| :---: | :---: | :---: |
| breaking | + to terminal 1 | $\mathbf{- ~ t o ~ t e r m i n a l ~ 1 0 ~}$ |
| making | For relays with break contacts, making is achieved by switching off supply voltage |  |

5. DIMENSIONS AND TERMINAL ARRANGEMENTS

## K-32/Nx2



| Reed relay | Dimension <br> "a" (max) |
| :---: | :---: |
| $\mathrm{K}-32 / 1 \times 2$ | $22,5 \mathrm{~mm}$ |
| $\mathrm{~K}-32 / 2 \times 2$ | $28,0 \mathrm{~mm}$ |

View from the bottom side of relay

$$
m=2,5
$$



## Ordering Information

When ordering relay please specify:

- symbol of relay
- index number


## Recommendation for users

When mounting into printed circuit boards, it is advisable to observe the following points to avoid damage to the relays:

- the time of continuous heating of terminals during soldering should not exceed 5 s ,
- the soldering iron should not press on terminals during soldering,
- the relays should not be mounted near sources of strong magnetic fields, e.g. transformers, permanent magnets etc.,
- the relays should operate at nominal supply voltages.

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## Reed relays type K-32/1xL

This product is in accordance with RoHs

Reed relay K-32 with 1 bi-stable (with magnetic holding) contact for PCB's.

| PARAMETERS | Unit | TYPE |
| :--- | :--- | :--- |
|  |  | K-32/1xL |

1. CONTACT PARAMETERS

| Switching power | $\max$ | $\mathrm{W}, \mathrm{VA}$ | 60 |
| :--- | :---: | :---: | :---: |
| Switching voltage | $\max$ | $\mathrm{V}_{\mathrm{DC}}$ | 200 |
|  |  | $\mathrm{~V}_{\mathrm{AC}}$ | 230 |
| Switching current | $\max$ | A | 1 |
| Contact resistance | $\max$ | mA | 150 |
| Life expectancy at 60V, 1A |  | operations | $7,5 \times 10^{6}$ |

2. RELAY PARAMETERS

| Operating voltage range | V | Pulse power supply (pulse width not less <br> than 2.5 ms see p.3 and 4 |  |
| :--- | :--- | :---: | :---: |
| Coil resistance |  | A | see p. 3 |

## 3. LIST OF COILS AND OPERATING VOLTAGE RANGE

| Symbol of relay | Contact arrangement | Index No | Coil resistance $\mathrm{R}_{\mathrm{N}}$ <br> [A] $t=20^{\circ} \mathrm{C}$ | Supply voltage, $\mathrm{t}=20^{\circ} \mathrm{C}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\mathrm{U}_{\mathrm{N}}$ [V] | $\mathrm{U}_{\text {MIN }}$ [V] | $\mathrm{U}_{\text {MAX }}[\mathrm{V}]$ |
| K-32/1xL | 1 bi-stable | 8-4441-678-1 | $300 / 300 \pm 10 \%$ | 6 | 4,9 | 8,6 |
| K-32/1xL | 1 bi-stable | 8-4441-678-2 | 1200/1200 $\pm 15 \%$ | 12 | 10,1 | 16,3 |
| K-32/1xL | 1 bi-stable | 8-4441-678-3 | $4800 / 4800 \pm 15 \%$ | 24 | 20,2 | 32,6 |

## 4. OPERATING VOLTAGE CONNECTION

| Operation | Pulse power supply with pulse width not less than $2,5 \mathrm{~ms}$ |  |
| :---: | :---: | :---: |
| open | + to terminal 12 | - to terminal 11 |
| close | + to terminal 1 | - to terminal 10 |

## K-32/1xL



View from the bottom side of relay

$$
m=2,5
$$



## Ordering Information

When ordering relay please specify:

- symbol of relay
index number


## Recommendation for users

When mounting into printed circuit boards, it is advisable to observe the following points to avoid damage to the relays:

- the time of continuous heating of terminals during soldering should not exceed 5 s ,
- the soldering iron should not press on terminals during soldering,
- the relays should not be mounted near sources of strong magnetic fields, e.g. transformers, permanent magnets etc.,
- the relays should operate at nominal supply voltages.

