

## AXICOM

Telecom-, Signal and RF Relays

## Cradle Relay P v23003

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The dimensions in this datasheet are for reference purpose only and are subject to change without notice. Specifications are subject to change without notice.

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## Cradle Relay P V23003

Hand solder and plug-in relays, for DC operation, polarized, latching

ROHS compliant (Directive 2002/95/EC) as per product date code 0501.

## Features

- Primarily intended for impulse operation
- Highly reliable
- Multi purpose relay
- Great variety of contact arrangements and materials to meet specific applications
- Sockets for easy and quick mounting of relays (see datasheet Accessories)
- Contacts for signal loads and currents up to 5 A


## Typical applications

- For applications where the switching status must be maintained
- Measuring systems


## Relay types

- Size I or II, depending on contact set
- Standard contact sets with max. 4 changeover, 2 break contacts, special configurations on request
- Single or bifurcated contacts
- Hand solder terminals also for plug-in connection with screw fixing
- Dust-protected



## Cradle Relay P V23003

## Dimensions

Type V23003-A0xxx Size I

Hand solder terminals, silver-plated
Also for plug-in connection and screw fixing With earth terminal Dust-protected


Type V23003-B0xxx Size II


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## Cradle Relay P V23003

## Coil Data and operating range

| Nominal voltage | from 6 Vdc to 60 Vdc |
| :--- | :---: |
| Typical nominal power consumption, at $20^{\circ} \mathrm{C}$ | 1.5 W |
| Class of the operative range <br> acc to EN 61810-1 / IEC 61810-1 and VDE 0435 Part 201 | 1 |
| Operating voltage (according to the coil type) | max. $73 \%$ of the nominal voltage |

With continuous operation only one winding at a time may be energized within the specific voltage range.
The minimum voltage $U_{I}$ and the maximum voltage $U_{\|}$depends on the ambient temperature.

| $U_{\text {I tamb }}$ | $=U_{120}{ }^{\circ} \mathrm{C} \cdot k_{1}$ tamb |
| :---: | :---: |
| $U_{\text {Il tamb }}$ | $=U_{\text {II } 20^{\circ} \mathrm{C}} \cdot k_{\text {l\| }}$ tamb |
| $t_{\text {amb }}$ | = Ambient temperature |
| $U_{\text {l tamb }}$ | $=$ Minimum voltage at ambient temperature, $\mathrm{t}_{\text {amb }}$ |
| $U_{\text {Il tamb }}$ | $=$ Maximum voltage at ambient temperature, $\mathrm{tamb}^{\text {a }}$ |
| $k_{\text {l and }} k_{\text {II }}$ | $=$ Factors |

Operate - negative potential at start of winding


Release - plus potential at start of winding


## Relay Code



Contact set / type of contact see page 11

Ordering example:
V23003-B0037-F104
Cradle relay P, size II, dust-protected, coil $24 \mathrm{Vdc}, 2$ changeover contact set, single contacts, contact material silver, gold-flashed

Note:
The ordering scheme enables a multitude of variations. However, not all variations are defined as construction specifications (ordering code) and thus in the current delivery program.

Special design can be carried out to customer specifications. Please contact your local representative.

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## Cradle Relay P V23003

Coil Data (values at $23^{\circ} \mathrm{C}$ )
Ordering Information

| Nominal voltage Unom | Operate/set voltage range |  | Coil power | Winding | Terminals |  | Coil Resistance | Relay code | Tyco part number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Minimum voltage Umin | Maximum voltage Umax |  |  |  |  |  |  |  |
| Vdc | Vdc | Vdc | mW |  | Start | End | $\Omega / \pm 15 \%$ |  |  |

V23003-AXXXX standard, size I

| 12.00 | 8.00 | 13.50 | 1'440 | I | 3 | 2 | 100 | V23003A25B104 | 1393817-4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8.00 | 13.50 |  | II | 4 | 1 | 100 |  |  |
| 12.00 | 8.00 | 13.50 | 1'440 | I | 3 | 2 | 100 | V23003A25C104 | 1393817-5 |
|  | 8.00 | 13.50 |  | II | 4 | 1 | 100 |  |  |
| 24.00 | 16.50 | 26.50 | 1 '440 | I | 3 | 2 | 400 | V23003A37B104 | 1393817-7 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003A37B604 | 1393817-8 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003A37C104 | 1393817-9 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 60.00 | 44.00 | 65.00 | 1'500 | I | 3 | 2 | 2400 | V23003A44B104 | 1-1393817-8 |
|  | 44.00 | 65.00 |  | II | 4 | 1 | 2400 |  |  |
| 48.00 | 33.50 | 49.00 | 1'646 | I | 3 | 2 | 1400 | V23003A64B104 | 2-1393817-0 |
|  | 33.50 | 49.00 |  | II | 4 | 1 | 1400 |  |  |
| 48.00 | 33.50 | 49.00 | 1'646 | I | 3 | 2 | 1400 | V23003A64B604 | 2-1393817-1 |
|  | 33.50 | 49.00 |  | II | 4 | 1 | 1400 |  |  |
| 48.00 | 33.50 | 49.00 | 1'646 | I | 3 | 2 | 1400 | V23003A64C104 | 2-1393817-2 |
|  | 33.50 | 49.00 |  | II | 4 | 1 | 1400 |  |  |

V23003-AXXXX 5A, size I

| 6.00 | 4.00 | 6.70 | $1^{\prime} 469$ | I | 3 | 2 | 24.5 | V23003A26F106 | $1393817-6$ |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | 4.00 | 6.70 |  | II | 4 | 1 | 24.5 |  |  |
| 24.00 | 16.50 | 26.50 | $1^{\prime} 440$ | I | 3 | 2 | 400 | V23003A37F101 | $1-1393817-0$ |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | $1^{\prime} 440$ | I | 3 | 2 | 400 | V23003A37F105 | $1-1393817-1$ |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | $1^{\prime} 440$ | I | 3 | 2 | 400 | V23003A37F106 | $1-1393817-2$ |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |

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## Cradle Relay P V23003

Coil Data (values at $23^{\circ} \mathrm{C}$ )
Ordering Information

| Nominal voltage Unom | Operate/set voltage range |  | Coil power | Winding | Terminals |  | Coil <br> Resistance | Relay code | Tyco part number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Minimum voltage Umin | Maximum voltage Umax |  |  |  |  |  |  |  |
| Vdc | Vdc | Vdc | mW |  | Start | End | $\Omega / \pm 15 \%$ |  |  |

V23003-BXXXX standard, size II

| 12.00 | 8.00 | 13.50 | 1'440 | I | 3 | 2 | 100 | V23003B25B110 | 3-1393817-1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8.00 | 13.50 |  | II | 4 | 1 | 100 |  |  |
| 12.00 | 8.00 | 13.50 | 1'440 | 1 | 3 | 2 | 100 | V23003B25C110 | 3-1393817-2 |
|  | 8.00 | 13.50 |  | II | 4 | 1 | 100 |  |  |
| 6.00 | 4.00 | 6.70 | 1'469 | I | 3 | 2 | 24.5 | V23003B26B110 | 3-1393817-4 |
|  | 4.00 | 6.70 |  | II | 4 | 1 | 24.5 |  |  |
| 6.00 | 4.00 | 6.70 | 1'469 | I | 3 | 2 | 24.5 | V23003B26C110 | 3-1393817-5 |
|  | 4.00 | 6.70 |  | II | 4 | 1 | 24.5 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003B37B110 | 3-1393817-9 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003B37B610 | 4-1393817-0 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003B37C110 | 4-1393817-1 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003B37C112 | 4-1393817-2 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003B37C116 | 1413004-2 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003B37C117 | 4-1393817-3 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 24.00 | 16.50 | 26.50 | 1'440 | I | 3 | 2 | 400 | V23003B37C410 | 4-1393817-4 |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 60.00 | 44.00 | 65.00 | 1'500 | I | 3 | 2 | 2400 | V23003B44B110 | 5-1393817-4 |
|  | 44.00 | 65.00 |  | II | 4 | 1 | 2400 |  |  |
| 60.00 | 44.00 | 65.00 | 1'500 | I | 3 | 2 | 2400 | V23003B44B129 | 5-1393817-5 |
|  | 44.00 | 65.00 |  | II | 4 | 1 | 2400 |  |  |
| 60.00 | 44.00 | 65.00 | 1'500 | I | 3 | 2 | 2400 | V23003B44B610 | 1413004-1 |
|  | 44.00 | 65.00 |  | II | 4 | 1 | 2400 |  |  |
| 60.00 | 44.00 | 65.00 | 1'500 | I | 3 | 2 | 2400 | V23003B44B610 | 1-1419137-0 |
|  | 44.00 | 65.00 |  | II | 4 | 1 | 2400 |  |  |
| 60.00 | 44.00 | 65.00 | 1'500 | I | 3 | 2 | 2400 | V23003B44C110 | 5-1393817-6 |
|  | 44.00 | 65.00 |  | II | 4 | 1 | 2400 |  |  |
| 60.00 | 44.00 | 65.00 | 1'500 | I | 3 | 2 | 2400 | V23003B44W84 | 5-1393817-8 |
|  | 44.00 | 65.00 |  | II | 4 | 1 | 2400 |  |  |
| 48.00 | 33.50 | 49.00 | 1'646 | I | 3 | 2 | 1400 | V23003B64B110 | 6-1393817-3 |
|  | 33.50 | 49.00 |  | II | 4 | 1 | 1400 |  |  |
| 48.00 | 33.50 | 49.00 | 1'646 | I | 3 | 2 | 1400 | V23003B64C110 | 6-1393817-4 |
|  | 33.50 | 49.00 |  | II | 4 | 1 | 1400 |  |  |

V23003-BXXXX 5A, size II

| 12.00 | 8.00 | 13.50 | $1 ‘ 440$ | I | 3 | 2 | 100 | V23003B25F104 | $3-1393817-3$ |
| :---: | ---: | ---: | ---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8.00 | 13.50 |  | II | 4 | 1 | 100 |  |  |
| 6.00 | 4.00 | 6.70 | $1 ‘ 469$ | I | 3 | 2 | 24.5 | V23003B26F104 | $3-1393817-6$ |
|  | 4.00 | 6.70 |  | II | 4 | 1 | 24.5 |  |  |
| 24.00 | 16.50 | 26.50 | $1 ‘ 440$ | I | 3 | 2 | 400 | V23003B37F104 | $4-1393817-5$ |
|  | 16.50 | 25.00 |  | II | 4 | 1 | 340 |  |  |
| 60.00 | 44.00 | 65.00 | $1 ‘ 500$ | I | 3 | 2 | 2400 | V23003B44F104 | $5-1393817-7$ |
|  | 44.00 | 65.00 |  | II | 4 | 1 | 2400 |  |  |
| 48.00 | 33.50 | 49.00 | $1 ' 646$ | I | 3 | 2 | 1400 | V23003B64F104 | $6-1393817-5$ |
|  | 33.50 | 49.00 |  | II | 4 | 1 | 1400 |  |  |

## Cradle Relay P V23003

## Instructions for Impulse Operation

Cradle relay $P$ is primarily intended for impulse operation. The maximum voltage stated in the table (page 2 ) can be increased for impulse operation as follows:
$\mathrm{U}_{\text {II Impuls }}=\quad \mathrm{U}_{\text {II tamb }} \cdot \mathrm{q}$
$\mathrm{U}_{\text {Il tamb }}=\quad$ Maximum continuous voltage at ambient temperature $\mathrm{t}_{\mathrm{amb}}$
$\mathrm{q}=\quad$ Factor
The impulse voltage must not exceed $80 \%$ of the test voltage (winding/frame or winding/winding) or 3.3 times at ambient temperature $=20^{\circ} \mathrm{C}$ and 2.3 times at ambient temperature $<20^{\circ} \mathrm{C}$ the value of the maximum voltage listed in the table (page 2).
Ift $t_{\mathrm{ED}} \leq 3$ s then $q=\sqrt{\frac{t_{\mathrm{z}}}{t_{\mathrm{ED}}}}$

| Ift | $=$ | Pulse width |
| :--- | :--- | :--- |
| $t_{2}$ | $=$ | Cycle time |
| If $t E D$ | $=$ | $>3 \mathrm{~s}$ the value of $q$ must be obtained from the nomograph (cradle relay N datasheet page 103). |

Examples of various periodic pulse trains (energizing side)

1. Periodic recurrence of one energizing pulse


| $t_{\text {ED }}$ | $=$ | $t_{1}+t_{\\|}$ |
| :--- | :--- | :--- |
| $t_{l}$ | $=$ | Pulse width of the positive pulse at the start of the winding |
| $t_{1}+t_{\\| l}$ | $=$ | Pulse width of the negative pulse at the start of the winding |
| $t 1+t_{\\| \\|}$ | $=\quad$ Pulse widths within one cycle |  |

2. Periodic recurrence of two unequal energizing pulses


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## Cradle Relay P V23003

Contact Data

| Ordering code block 3 | B104/B110 | B604/B610 | C104/C110 | C404/C410 | F104 ... F107 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Number of contacts and Type | max. 4 changeover contacts, 2 break contacts or 2 make contacts |  |  |  |  |
| Contact assembly | single contacts |  | bifurcated contacts |  | single contacts |
| Contact material | silver, gold-flashed | gold F | silver, gold-flashed | gold F | silver, gold-flashed |
| Max. switching voltage | 150 Vdc | 36 Vdc | 150 Vdc | 36 Vdc | 250 Vdc |
|  | 125 Vac | 30 Vac | 125 Vac | 30 Vac | 250 Vac |
| Max. switching current | 2 A | 0.2 A | 2 A | 0.2 A | 5 A |
| Max. switching capacity | $\begin{gathered} 35 \text { to } 70 \mathrm{~W} \\ \text { see load limit } \\ \text { curve page } 10 \\ 50 \mathrm{VA} \end{gathered}$ | $\begin{aligned} & 5 \mathrm{~W} \\ & 5 \mathrm{VA} \end{aligned}$ | 35 to 70 W see load limit curve page 10 50 VA | $\begin{aligned} & 5 \mathrm{~W} \\ & 5 \mathrm{VA} \end{aligned}$ | 50 to 140 W see load limit curve page 10 500 VA |
| Max. continuous current at max. ambient temperature | 2 A |  |  |  | 5 A |

## Max. DC Load Breaking Capacity

## for contact sets B1xx and C1 xx

Safe breaking, no stationary arc
Contact material silver, gold-flashed

$\begin{array}{ll}I & =\text { switching current } \\ U & =\text { switching voltage }\end{array}$

## for contact sets F1xx

Safe breaking, no stationary arc
Contact material silver, gold-flashed


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## Cradle Relay P V23003

## Contact sets

## Size I

| Number of contacts and type | 2 changeover contacts |  | 2 make contacts | 2 break contacts | 1 break <br> 1 make contact |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Symbols with base conncections <br> Contacts in release condition, coil polarity to set the relay |  | $4_{6}^{5}$ | $\int_{8}^{10} \int_{5}^{7}$ | ${ }_{10}^{8} \quad 4$ | $\int_{10}^{8} \int_{5}^{7}$ |
| Contact assembly | single contacts | bifurcated contacts | single contacts |  |  |
| Contact material silver, gold-flashed Ordering code block 3 | B104 | C104 | F105 | F107 | F106 |
| Contact material gold F Ordering code block 3 | B604 | C404 |  |  |  |

Size II

| Number of contacts and type | 4 changover contacts |  | 2 changover contacts |
| :---: | :---: | :---: | :---: |
| Symbols with base conncections <br> Contacts in release condition, coil polarity to set the relay |  | $\begin{aligned} & 4_{9}^{8} 1^{10} \\ & 4_{6}^{5} 1^{7} \end{aligned}$ | $\left.\right\|_{13} ^{11} 4_{7}^{14} 4^{8}$ |
| Contact assembly | single contacts | bifurcated contacts | single contacts |
| Contact material silver, gold-flashed Ordering code block 3 | B110 | C110 | F104 |
| Contact material gold F Ordering code block 3 | B610 | C410 |  |

## Cradle Relay P V23003

## Insulation

| Ordering code block 3 | B 1 xx | B 6 xx | C 1 xx | C 4 xx | F 1 xx |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Test voltage (1 min) |  |  |  |  |  |
| winding / frame <br> contact $/$ contact <br> contact $/$ frame |  | $500 \mathrm{Vac}_{\text {rms }}$ | $500 \mathrm{Vac}_{\text {rms }}$ |  |  |

## General Data

| Ordering code block 3 | B1xx | B 6 xx | C 1 xx |
| :--- | :---: | :---: | :---: |
| Operate time at $U_{\text {nom }}$ and 20 ${ }^{\circ} \mathrm{C}$, typical | C 4 xx | F 1 mx |  |
| Reset time typical |  | 4 ms |  |
| Maximum switching rate without load | 20 operations/s |  |  |
| Ambient temperature range <br> acc. to EN 61810-1 / IEC 61810-1 and <br> VDE 0435 part 201 | $-40^{\circ} \mathrm{C} \mathrm{\ldots .7}+70^{\circ} \mathrm{C}$ |  |  |
| Thermal resistance | $50 \mathrm{~K} / \mathrm{W}$ |  |  |
| Maximum temperature | $100^{\circ} \mathrm{C}$ |  |  |
| Continuous thermal load | 1.6 W |  |  |
| Degree of protection acc. to EN 60529 / <br> IEC 60529 / VDE 0470 part 1 | dust-protected IP 30 |  |  |
| Mechanical endurance | approx. 107 operations |  |  |
| Mounting position | any |  |  |
| Weight <br> V23003-A0xxx Size I <br> V23003-B0xxx Size II | approx. 25 g <br> approx. 30 g |  |  |


#### Abstract

IM Relays 4th generation slim line - low profile polarized 2 c/o telecom signal relay with bifurcated contacts, available as non latching or latching relay with 1 coil. Nominal voltage range from 1.5 ... 24 V , coil power consumption of 50 ... 200 mW , latching relays with 1 coil 100 mW . The IM relay is available as through hole and surface mount type (J-Legs and Gull Wings) and capable to switch loads up to $60 \mathrm{~W} / 62,5 \mathrm{VA}$. It is currently the only 2 A rated 4 G relay on the market. Dielectric strength fulfills the Telcordia requirements according GR $1089(2,5 \mathrm{kV}-2 / 10 \mu \mathrm{~s})$ and FCC part $68(1,5 \mathrm{kV}-10 / 160 \mu \mathrm{~s})$. The IM relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. $10 \times 6 \mathrm{~mm}$ board space and 5.65 mm height.


## P2 Relays

3rd generation polarized 2 c/o telecom relay with bifurcated contacts, available as non latching or latching relay with 1 or 2 coils. Nominal voltage range from $3 \ldots 24 \mathrm{~V}$, coil power consumption 140 mW , latching relays with 1 coil 70 mW . The P2 Relay is available as through hole or surface mount type and capable to switch currents up to 5 A . Dielectric strength fulfills the Telcordia requirements according GR $1089(2,5 \mathrm{kV}-2 / 10 \mu \mathrm{~s})$ and FCC part $68(1,5 \mathrm{kV}-10 / 160 \mu \mathrm{~s})$. The P2 relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. $15 \times 7,5 \mathrm{~mm}$ board space and 10 mm height.

## FX2 Relays

3rd generation polarized 2 c/o telecom relay with bifurcated contacts available as non latching or latching relay with 1 coil. Nominal voltage range from $3 \ldots 48 \mathrm{~V}$, coil power consumption of $80 \ldots 260 \mathrm{~mW}$ for the high sensitive version, 140... 300 mW for the standard version, latching relays with 1 coil 100 mW . The FX2 relay is available as through hole type and capable to switch loads up to $60 \mathrm{~W} / 62,5 \mathrm{VA}$. Dielectric strength fulfills the Telcordia requirements according GR $1089(2,5 \mathrm{kV}-2 / 10 \mu \mathrm{~s})$ and FCC part $68(1,5 \mathrm{kV}-10 / 160 \mu \mathrm{~s})$. The FX2 relay is tested according CECC/ IECQ and certified in accordance with IEC/EN 60950 and UL 60950.
Dimensions approx. $15 \times 7,5 \mathrm{~mm}$ board space and $10,7 \mathrm{~mm}$ height.

## FT2 / FU2 Relays

3rd generation non polarized, non latching 2 c/o telecom relay with bifurcated contacts. Nominal voltage range from $3 \ldots 48 \mathrm{~V}$, coil power consumption $200 \ldots 300 \mathrm{~mW}$. Most sensitive 48 V relay. Available as through hole and surface mount type. Dielectric strength fulfills the Telcordia requirements according GR $1089(2,5 \mathrm{kV}-2 / 10 \mu \mathrm{~s})$ and FCC part $68(1,5 \mathrm{kV}-10 /$ $160 \mu \mathrm{~s}$ ). The FT2/FU2 relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950.
Dimensions approx. $15 \times 7,5 \mathrm{~mm}$ board space and 10 mm height.

## FP2 Relays

3rd generation polarized 2 c/o telecom relay with bifurcated contacts, available as non latching or latching relay with 1 or 2 coils. Nominal voltage range from $3 \ldots 48 \mathrm{~V}$, coil power consumption of $80 \ldots 260 \mathrm{~mW}$ for the high sensitive version, $140 \ldots 300 \mathrm{~mW}$ for the standard version, latching relays with 1 coil 100 mW .. The FP2 Relay is available as through hole type and capable to switch loads up to $60 \mathrm{~W} / 62,5 \mathrm{VA}$. Dielectric strength fulfills FCC part $68(1,5 \mathrm{kV}-10 / 160 \mu \mathrm{~s})$. The FP2 is tested according CECC/IECQ approved.
Dimensions approx. $14 \times 9 \mathrm{~mm}$ board space and 5 mm height.

## MT2

2nd generation non polarized, non latching 2 c/o telecom and signal relay with bifurcated contacts. Nominal voltage range from 3 ... 48 V , coil power consumption 150/200/300/400 and 550 mW . Dielectric strength fulfills the requirements according FCC part 68 ( $1,5 \mathrm{kV}-10 / 160 \mu \mathrm{~s}$ ).
Dimensions approx. $20 \times 10 \mathrm{~mm}$ board space and 11 mm height.

## D2n Relays

2nd generation non polarized 2 c/o relay for telecom and various other applications. Nominal voltage range from $3 \ldots 48 \mathrm{~V}$, coil power consumption from 150 .... 500 mW . The D2n relay is capable to switch currents up to 3A. Dielectric strength fulfills the requirements according FCC part $68(1,5 \mathrm{kV}-10 / 160 \mu \mathrm{~s})$. Dimensions approx. $20 \times 10 \mathrm{~mm}$ board space and 11 mm height.

## P1 Relays

Extremely sensitive, polarized $1 \mathrm{c} / \mathrm{o}$ relay with bifurcated contacts for a wide range of applications, available as non latching or latching relay with 1 or 2 coils. Nominal voltage range from $3 \ldots 24 \mathrm{~V}$, coil power consumption 65 mW , latching relays with 1 coil 30 mW . The P1 relay is available as through hole or surface mount type and capable to switch currents up to 1 A. Dielectric strength fulfills the requirements according FCC part 68 (1,5 $\mathrm{kV}-10 / 160 \mu \mathrm{~s}$ ). Dimensions approx. $13 \times 7,6 \mathrm{~mm}$ board space and 7 mm height for THT or 8 mm height for SMT version.

## W11 Relays

Low cost, non polarized 1 c/o relay for various applications. Nominal voltage range from $3 \ldots 24 \mathrm{~V}$, coil power consumption 450 mW , sensitive versions 200 mW . The W11 relay is capable to switch currents up to 3 A . Dielectric strength 1000 Vrms.
Dimensions approx. $15,6 \times 10,6 \mathrm{~mm}$ board space and $11,5 \mathrm{~mm}$ height.

## Reed Relays

High sensitive, non polarized relay for telecom and various other applications, available with $1 \mathrm{n} / \mathrm{o}, 2 \mathrm{n} / \mathrm{o}$ or 1c/o contacts. Nominal voltage range from $5 \ldots 24 \mathrm{~V}$, coil power consumption $50 \ldots 280 \mathrm{~mW}$ for $1 \mathrm{n} / \mathrm{o}$ and $125 \ldots$ 280 mW for $2 \mathrm{n} / \mathrm{o}$ or $1 \mathrm{c} / \mathrm{o}$ versions. Reedrelays are available in DIP or SIL housing and capable to switch currents up to 0,5 A. Integrated diode and/or electrostatic shield optional. Dielectric strength 1500 Vdc. Dimensions approx. $19,3 \times 7 \mathrm{~mm}$ board space and $5 \ldots 7,5 \mathrm{~mm}$ height for DIP or $19,8 \times 5 \mathrm{~mm}$ board space and $7,8 \mathrm{~mm}$ height for SIL version.

## Cradle Relays

Extremely reliable and mature relay family of 1st generation for various signal switching applications. Available as non polarized, polarized / latching and relay with AC coil. The benefit is the possibility of combining various contact sets from 1 up to 6 poles, single and bifurcated contacts, different contact materials with a coil voltage range from $1,5 \mathrm{Vdc}$ to 220 Vac . Cradle relays are available as dust protected and hermetically sealed versions, with plug in or solder terminals and are capable to switch currents up to 5 A . Forcibly guided (linked) contact sets optional. Dielectric strength 500 Vrms. Dimensions from approx. $19 \times 24$ to $19 \times 35 \mathrm{~mm}$ board space and 30 mm height.

## Other Relays

We offer a variety of different relay families for maintenance and replacement purposes. These relays are up to 60 years old now, such as Card Relay SN (V23030 series), Small General Purpose Relay (V23006 series), Small Polarized Relay (V23063 ... V23067 and V23163 ... V23167 series) Accessories like sockets, hold down springs, etc. optional.

## High Frequency Relays

HF3 / HF3S / HF6 series RF relays offering excellent RF characteristics in a small package. All HF series relays are suitable for SMD soldering processes. Available as non latching or latching versions with 1 or 2 coils and a nominal coil voltage range from $3 \ldots 24 \mathrm{~V}$, a coil power consumption of 140 mW or 70 mW (single coil latching types).

HF3: Low cost RF relay suitable up to 3 GHz . Impedance 50 and 75 Ohm. 50 W hot switching and 50 W RF power carry capability. Dimensions $14.6 \times 7.3 \times 10.3 \mathrm{~mm}$.

HF3S: High performance, high power RF relay suitable up to 3 GHz , 50 W hot switching and 150 W RF power carry capability. Dimensions $15 \times 7.6 \times 10.6 \mathrm{~mm}$.

HF6: High performance, high power RF relay suitable up to 6 GHz , 50 W hot switching and 50 W RF power carry capability.
Dimensions $15 \times 7.6 \times 10.6 \mathrm{~mm}$.


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[^0]:    I = switching current
    $U \quad=$ switching voltage

