



**AXICOM**

Telecom-, Signal and RF Relays

## Cradle Relay N V23154 / V23162

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## Cradle Relay N V23154/V23162

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### Disclaimer

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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 N V23154/V23162

PCB, hand solder or plug-in relays,  
for DC operation,  
non-polarized, non-latching

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

### Features

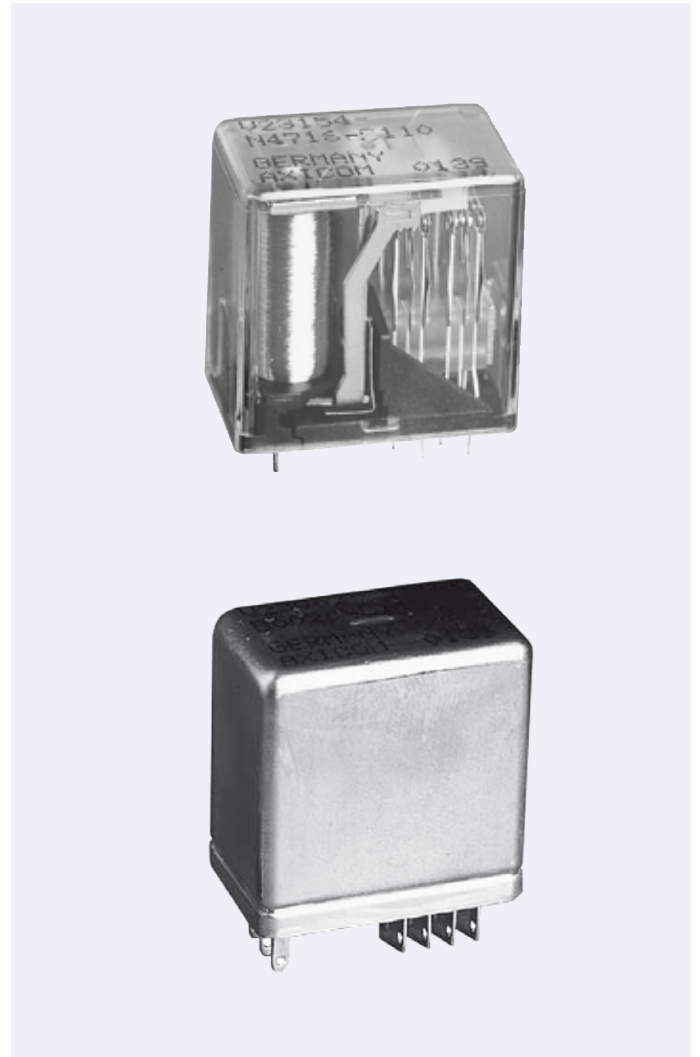
- Multi purpose relay
- highly reliable
- great variety of contact arrangements and materials to meet specific applications
- Contacts for signal loads and currents up to 5 A
- AC and DC, latching and non-latching, coils operating voltage 1.5 V ... 125 V
- Sockets for easy and quick mounting of relays (see data sheet Accessories)

### Typical applications

- Measurement and control equipment
- Press controls with high safety requirements (forcibly guided springs)
- Telecommunications

### Relay types

- Size I or II, depending on contact set
- Standard contact sets with max. 4 changeover, 2 break or 6 make contacts, special configurations on request
- Single or bifurcated contacts
- Hand solder terminals also for plug-in connection with screw fixing or PCB terminals
- Dust-protected with plastic cover, V23154 - xxx  
hermetically sealed with metal enclosure, V23162 - xxx



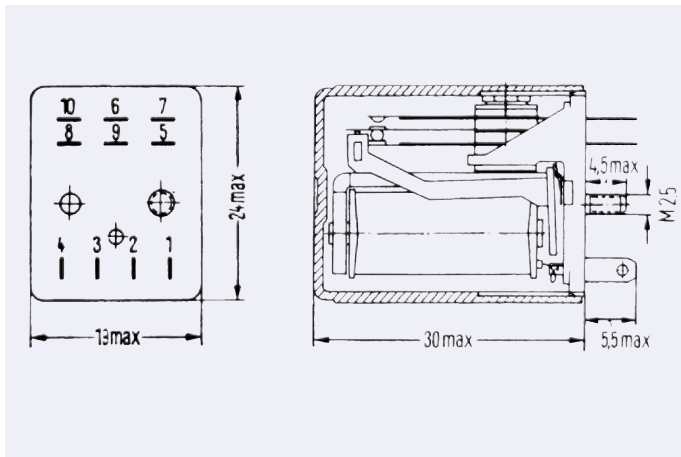
## Cradle Relay N V23154/V23162

### Dimensions

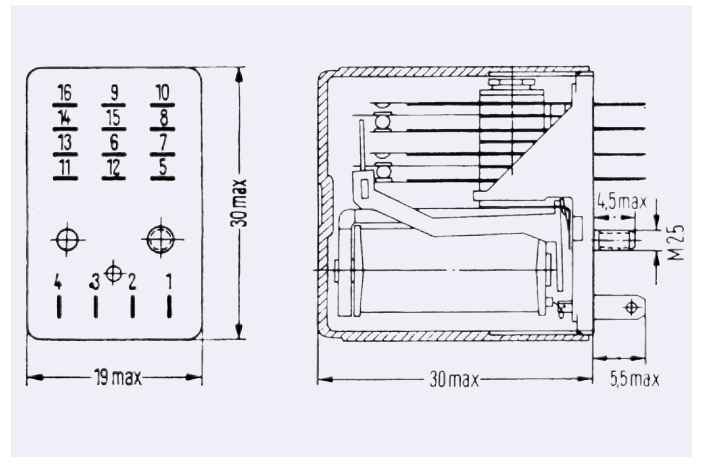
Dimensions in mm

#### Type V23154-COxx Size I

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

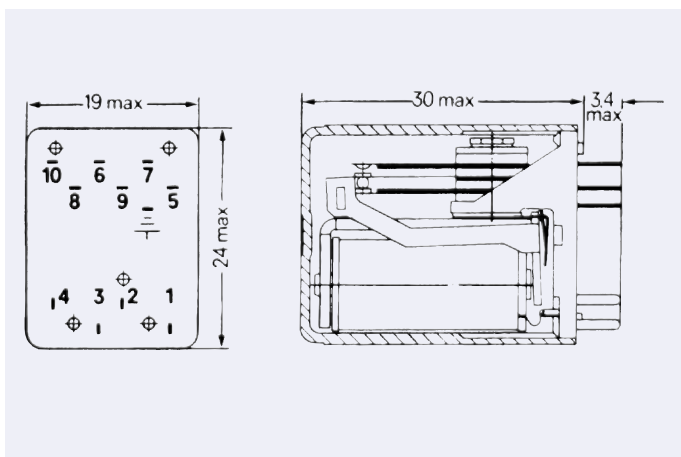


#### Type V23154-DOxx Size II

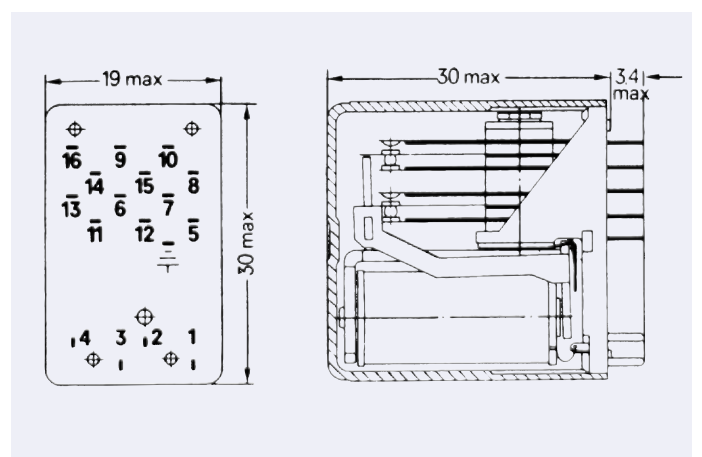


#### Type V23154-MXX Size I

For printed circuit mounting  
With or without earth terminal  
Dust-protected



#### Type V23154-NXX Size II



For sockets and hold-down springs see data sheet Accessories

## Cradle Relay N V23154/V23162

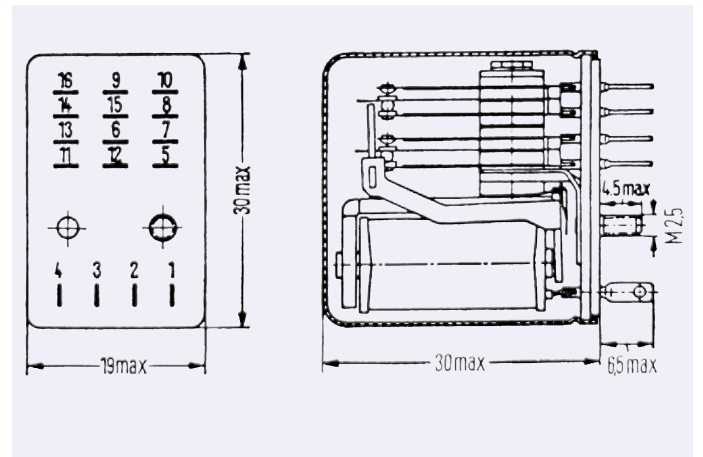
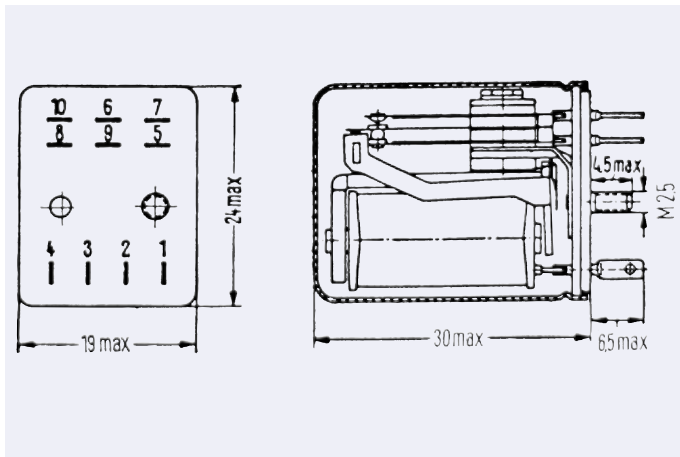
### Dimensions

Dimensions in mm

#### Type V23162-A0xx Size I

#### Type V23162-B0xx Size II / V23162-H0xx Size II

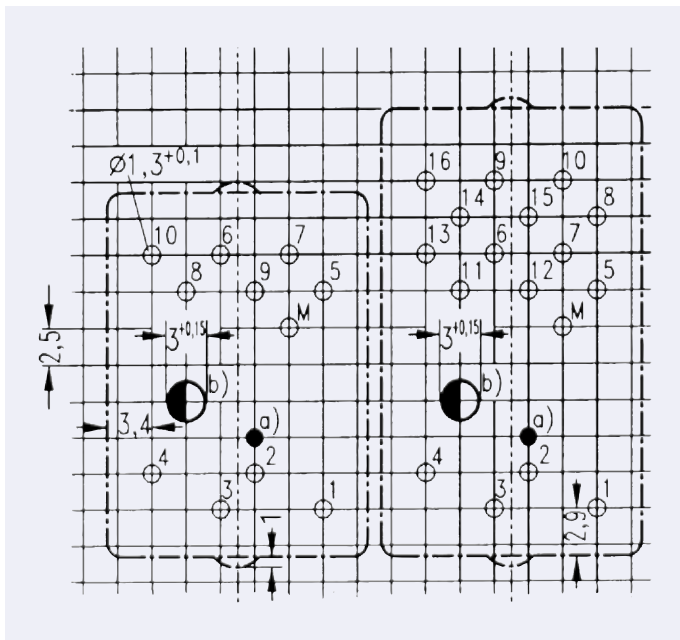
Hand solder terminals, silver or gold plated  
Also for plug-in connection and screw fixing  
Hermetically sealed



For sockets and hold-down springs see data sheet Accessories

### Mounting hole layout for V23154 - M/Nxx

View onto the component side of the PCB (top view)



M = Earth terminal

- a) Hole for mechanical armature actuation, if required
- b) Hole for socket mounting with screw M1.6.

## Cradle Relay N V23154/V23162

### Coil Data and operating range

Nominal voltage	from 5 Vdc to 125 Vdc
Typical nominal power consumption, at 20 °C	0.8 W
Class of the operative range acc to EN 61810-1 / IEC 61810-1 and VDE 0435 Part 201	2
Operating voltage (according to the coil type)	max. 98% of the nominal voltage

Terminals:

Coil with 1 winding

Start 4 End 1

Coil with 2 windings (upon request)

Start 3 End 2 for winding I

Start 4 End 1 for winding II

The minimum voltage  $U_I$  depends on the contact set and the ambient temperature, the maximum voltage  $U_{II}$  only depends on the ambient temperature.

Between minimum voltage  $U_{I \text{ t amb}}$  and operating voltage  $U$  a safety margin of approx. 20% is recommended.

$$U_{I \text{ t amb}} (1.2) < U \leq U_{II \text{ t amb}}$$

$$U_{I \text{ t amb}} = U_I \cdot U_{20 \text{ °C}} \cdot k_{I \text{ t amb}}$$

$$U_{II \text{ t amb}} = U_{II \text{ 20 °C}} \cdot k_{II \text{ t amb}}$$

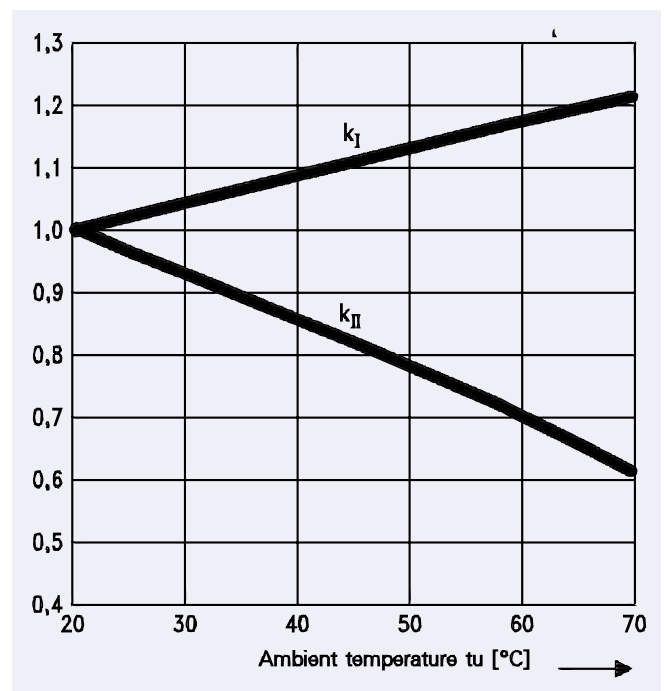
$t_{\text{amb}}$  = Ambient temperature

$U$  = Operating voltage

$U_{I \text{ t amb}}$  = Minimum voltage at ambient temperature,  $t_{\text{amb}}$

$U_{II \text{ t amb}}$  = Maximum voltage at ambient temperature,  $t_{\text{amb}}$

$k_I$  and  $k_{II}$  = Factors



## Cradle Relay N V23154/V23162

### Relay Code

		V	2	3	1	5	4					
Identification of the Cradle N Relay, dust protected												
Relay type												
C0 =	Size I, for plug-in and screw fixing, hand solder terminals silver-plated, with earth terminal, dust-protected											
D0 =	Size II, for plug-in and screw fixing, hand solder terminals silver-plated, with earth terminal, dust-protected											
M0 =	Size I, for printed circuit mounting, with earth terminal, dust-protected											
N0 =	Size II, for printed circuit mounting, with earth terminal, dust-protected											
M4 =	Size I, for printed circuit mounting, without earth terminal, dust-protected											
N4 =	Size II, for printed circuit mounting, without earth terminal, dust-protected											
Coil number												
Monostable, 1 coil												
711 =	5 V nominal voltage											
712 =	6 V											
717 =	12 V											
721 =	24 V											
726 =	48 V											
734 =	60 V											
735 =	110 V											
703 =	125 V											
Contact set / type of contact see page 19												

**Ordering example:**

V23154-D0721-B110

Cradle relay N, size II, plug-in, dust-protected, hand solder terminals, silver-plated, coil 24 Vdc, 4 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.

**Cradle Relay N V23154/V23162**

**Relay Code**



Identification of the  
Cradle N Relay, hermetically sealed

Relay type

- A0 = Size I,  
for plug-in and screw fixing, hand solder terminals tinned,  
hermetically sealed
- B0 = Size II,  
for plug-in and screw fixing, hand solder terminals tinned,  
hermetically sealed
- H0 = Size II,  
for plug-in and screw, fixing, hand solder terminals, gold-plated

Coil number

Monostable, 1 coil

- 711 = 5 V nominal voltage
- 712 = 6 V
- 717 = 12 V
- 721 = 24 V
- 726 = 48 V
- 734 = 60 V
- 735 = 110 V
- 703 = 125 V

Contact set / type of contact  
see page 19

Ordering example:

V23162-A0721-B104

Cradle relay N, size I, plug-in, hermetically sealed, hand solder terminals, silver-plated, coil 24 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.



## Cradle Relay N V23154/V23162

### Coil Data (values at 20 °C)

### Ordering Information

Nominal Voltage Unom Vdc	Operating voltage range		Coil power mW	Coil Resistance $\Omega \pm 15\%$	Relay code	Typ part number
	Minimum Voltage Umin Vdc	Maximum voltage Umax Vdc				

#### V23154-C0XX standard, size I

5.00	1.80	7.20	893	28	V23154C711B104	5-1393806-3
5.00	1.80	7.20	893	28	V23154C711B604	5-1393806-4
7.00	2.70	10.50	845	58	V23154C712B104	5-1393806-5
7.00	2.70	10.50	845	58	V23154C712B604	5-1393806-6
10.00	7.10	16.00	714	140	V23154C430B104	2-1393806-0
12.00	6.60	20.50	626	230	V23154C418B104	1393806-8
12.00	5.30	20.00	655	220	V23154C717B104	6-1393806-7
12.00	7.10	20.00	655	220	V23154C717C104	6-1393806-8
15.00	6.80	24.50	692	325	V23154C719B104	7-1393806-1
15.00	6.80	24.50	692	325	V23154C719B604	7-1393806-2
15.00	9.10	24.50	692	325	V23154C719C104	7-1393806-3
15.00	9.10	24.50	692	325	V23154C719C404	7-1393806-4
20.00	8.90	32.00	727	550	V23154C720B101	7-1393806-6
20.00	8.90	32.00	727	550	V23154C720B103	7-1393806-7
20.00	8.90	32.00	727	550	V23154C720B104	7-1393806-8
20.00	8.90	32.00	727	550	V23154C720B604	7-1393806-9
20.00	11.90	32.00	727	550	V23154C720C104	8-1393806-1
24.00	11.20	36.00	823	700	V23154C421B104	1-1393806-1
24.00	11.00	40.00	647	890	V23154C721B104	8-1393806-6
24.00	11.00	40.00	647	890	V23154C721B604	8-1393806-7
24.00	14.50	40.00	647	890	V23154C721C104	8-1393806-8
24.00	14.50	40.00	647	890	V23154C721C404	8-1393806-9
25.00	20.80	36.30	856	730	V23154C496C104	2-1393806-5
32.00	16.90	54.00	602	1700	V23154C722B101	9-1393806-3
32.00	16.90	54.00	602	1700	V23154C722B104	9-1393806-4
32.00	16.90	54.00	602	1700	V23154C722B604	9-1393806-5
32.00	22.60	54.00	602	1700	V23154C722C104	9-1393806-7
32.00	22.60	54.00	602	1700	V23154C722C404	9-1393806-8
32.00	22.60	54.00	602	1700	V23154C722C604	9-1393806-9
48.00	23.00	75.00	720	3200	V23154C726B101	1393807-5
48.00	23.00	75.00	720	3200	V23154C726B104	1393807-6
48.00	23.00	75.00	720	3200	V23154C726B604	1393807-7
48.00	30.00	75.00	720	3200	V23154C726C104	1393807-8
48.00	30.00	75.00	720	3200	V23154C726C404	1393807-9
60.00	27.00	92.00	766	4700	V23154C734B104	1-1393807-4
72.00	36.00	100.00	894	5800	V23154C404B104	1393806-2
72.00	36.20	114.00	682	7600	V23154C704B101	4-1393806-1
72.00	36.20	114.00	682	7600	V23154C704B102	4-1393806-2
72.00	36.20	114.00	682	7600	V23154C704B104	4-1393806-3
72.00	36.20	114.00	682	7600	V23154C704B108	4-1393806-4
72.00	36.20	114.00	682	7600	V23154C704B604	4-1393806-5
72.00	48.40	114.00	682	7600	V23154C704C104	4-1393806-6
72.00	48.40	114.00	682	7600	V23154C704C404	4-1393806-7
110.00	49.00	164.00	807	15000	V23154C735B104	1-1393807-6
125.00	61.00	190.00	748	20900	V23154C703B104	3-1393806-6
125.00	81.00	190.00	748	20900	V23154C703C101	3-1393806-7
125.00	81.00	190.00	748	20900	V23154C703C403	3-1393806-8

#### V23154-C0XX 5A, size I

1.10	0.40	1.70	807	1.5	V23154C702F101	3-1393806-3
1.10	0.40	1.70	807	1.5	V23154C702F106	3-1393806-4
7.00	2.70	10.50	845	58	V23154C712F105	5-1393806-7
7.00	2.70	10.50	845	58	V23154C712F106	5-1393806-8

## Cradle Relay N V23154/V23162

### Coil Data (values at 20 °C)

### Ordering Information

Nominal Voltage Unom Vdc	Operating voltage range		Coil power mW	Coil Resistance $\Omega \pm 15\%$	Relay code	Typc part number
	Minimum Voltage Umin Vdc	Maximum voltage Umax Vdc				

#### V23154-C0XX 5A, size I

9.00	3.90	14.00	736	110	V23154C715F105	6-1393806-3
12.00	7.10	20.00	655	220	V23154C717F105	6-1393806-9
12.00	7.10	20.00	655	220	V23154C717F106	7-1393806-0
14.50	6.60	24.00	647	325	V23154C719F105	7-1393806-5
19.00	8.20	31.00	681	530	V23154C720F105	8-1393806-2
19.00	8.20	31.00	681	530	V23154C720F106	8-1393806-3
24.00	15.00	36.00	823	700	V23154C421F105	1-1393806-3
24.00	11.00	40.00	647	890	V23154C721F105	9-1393806-1
24.00	11.00	40.00	647	890	V23154C721F106	9-1393806-2
33.00	16.00	54.00	641	1700	V23154C722F101	1393807-1
33.00	16.00	54.00	641	1700	V23154C722F105	1393807-2
33.00	16.00	54.00	641	1700	V23154C722F106	1393807-3
48.00	23.00	75.00	720	3200	V23154C726F105	1-1393807-1
48.00	30.00	75.00	720	3200	V23154C726F106	1-1393807-2
60.00	27.00	92.00	766	4700	V23154C734F106	1-1393807-5
72.00	36.20	114.00	682	7600	V23154C704F105	4-1393806-8
72.00	36.20	114.00	682	7600	V23154C704F106	1413000-2
110.00	49.00	164.00	807	15000	V23154C735F106	1-1393807-7
125.00	61.00	190.00	748	20900	V23154C703F106	4-1393806-0

#### V23154-D0XX standard, size II

5.00	2.50	7.20	893	28	V23154D711B110	2-1393808-8
5.00	2.50	7.20	893	28	V23154D711B628	2-1393808-9
5.00	3.00	7.20	893	28	V23154D711C110	3-1393808-0
5.00	3.00	7.20	893	28	V23154D711C410	3-1393808-1
7.00	3.60	10.50	845	58	V23154D712B110	3-1393808-3
7.00	3.60	10.50	845	58	V23154D712B610	3-1393808-4
7.00	4.40	10.50	845	58	V23154D712C110	3-1393808-5
8.50	4.80	14.00	657	110	V23154D715B110	3-1393808-8
8.50	4.80	14.00	657	110	V23154D715B610	3-1393808-9
8.50	5.80	14.00	657	110	V23154D715C110	4-1393808-0
10.00	5.80	16.50	667	150	V23154D716B110	4-1393808-3
10.00	5.80	16.50	667	150	V23154D716B117	8-1422029-0
10.00	5.80	16.50	667	150	V23154D716B610	4-1393808-5
10.00	7.10	16.50	667	150	V23154D716C110	4-1393808-6
12.00	8.80	20.50	626	230	V23154D418B110	3-1393807-0
12.00	7.10	20.00	655	220	V23154D717B110	4-1393808-9
12.00	7.10	20.00	655	220	V23154D717B112	5-1393808-0
12.00	7.10	20.00	655	220	V23154D717B124	5-1393808-1
12.00	7.10	20.00	655	220	V23154D717B529	5-1393808-2
12.00	7.10	20.00	655	220	V23154D717B610	8-1422029-2
12.00	10.50	20.00	655	220	V23154D717C110	5-1393808-3
15.00	9.10	24.50	692	325	V23154D719B110	5-1393808-6
15.00	9.10	24.50	692	325	V23154D719B112	5-1393808-7
15.00	9.10	24.50	692	325	V23154D719B117	5-1393808-8
15.00	9.10	24.50	692	325	V23154D719B124	5-1393808-9
15.00	9.10	24.50	692	325	V23154D719B210	6-1393808-0
15.00	9.10	24.50	692	325	V23154D719B610	6-1393808-1
15.00	11.00	24.50	692	325	V23154D719C110	1413000-3
16.00	15.20	27.00	656	390	V23154D479B110	7-1393807-5
16.00	15.20	27.00	656	390	V23154D479B111	7-1393807-6
16.00	15.20	27.00	656	390	V23154D479B117	1422029-6
16.00	15.20	27.00	656	390	V23154D479B128	7-1393807-7

## Cradle Relay N V23154/V23162

### Coil Data (values at 20 °C)

### Ordering Information

Nominal Voltage Unom Vdc	Operating voltage range		Coil power mW	Coil Resistance $\Omega \pm 15\%$	Relay code	Typ part number
	Minimum Voltage Umin Vdc	Maximum voltage Umax Vdc				

#### V23154-D0XX standard, size II

16.00	18.90	27.00	656	390	V23154D479C110	7-1393807-8
20.00	11.90	32.00	727	550	V23154D720B110	6-1393808-5
20.00	11.90	32.00	727	550	V23154D720B112	6-1393808-6
20.00	11.90	32.00	727	550	V23154D720B116	6-1393808-7
20.00	11.90	32.00	727	550	V23154D720B117	6-1393808-8
20.00	11.90	32.00	727	550	V23154D720B610	6-1393808-9
20.00	14.40	32.00	727	550	V23154D720C110	7-1393808-0
20.00	14.40	32.00	727	550	V23154D720C112	7-1393808-1
20.00	14.40	32.00	727	550	V23154D720C410	7-1393808-3
20.00	14.40	32.00	727	550	V23154D720C412	7-1393808-4
20.00	14.40	32.00	727	550	V23154D720C610	7-1393808-5
24.00	15.00	36.00	823	700	V23154D421B110	3-1393807-7
24.00	15.00	36.00	823	700	V23154D421B117	3-1393807-9
24.00	15.00	36.00	823	700	V23154D421B124	4-1393807-0
24.00	15.00	36.00	823	700	V23154D421B612	4-1393807-1
24.00	18.20	36.00	823	700	V23154D421C110	4-1393807-2
24.00	18.20	36.00	823	700	V23154D421C410	4-1393807-3
24.00	14.50	40.00	647	890	V23154D721B110	8-1393808-3
24.00	14.50	40.00	647	890	V23154D721B112	8-1393808-4
24.00	14.50	40.00	647	890	V23154D721B114	8-1393808-5
24.00	14.50	40.00	647	890	V23154D721B116	8-1393808-6
24.00	14.50	40.00	647	890	V23154D721B117	8-1393808-7
24.00	14.50	40.00	647	890	V23154D721B124	8-1393808-8
24.00	14.50	40.00	647	890	V23154D721B129	8-1393808-9
24.00	14.50	40.00	647	890	V23154D721B142	9-1393808-0
24.00	14.50	40.00	647	890	V23154D721B510	9-1393808-1
24.00	14.50	40.00	647	890	V23154D721B610	9-1393808-2
24.00	14.50	40.00	647	890	V23154D721B612	9-1393808-3
24.00	22.00	40.00	647	890	V23154D721C110	9-1393808-5
24.00	18.00	40.00	647	890	V23154D721C112	9-1393808-6
24.00	18.00	40.00	647	890	V23154D721C114	9-1393808-7
24.00	18.00	40.00	647	890	V23154D721C117	9-1393808-8
24.00	18.00	40.00	647	890	V23154D721C410	9-1393808-9
25.00	20.80	36.30	856	730	V23154D496B110	8-1393807-2
25.00	20.80	36.30	856	730	V23154D496B112	8-1393807-3
32.00	22.60	54.00	602	1700	V23154D722B110	1-1393809-4
32.00	22.60	54.00	602	1700	V23154D722B112	1-1393809-5
32.00	22.60	54.00	602	1700	V23154D722B113	1-1393809-6
32.00	22.60	54.00	602	1700	V23154D722B114	1-1393809-7
32.00	22.60	54.00	602	1700	V23154D722B116	1-1393809-8
32.00	22.60	54.00	602	1700	V23154D722B117	1-1393809-9
32.00	22.60	54.00	602	1700	V23154D722B124	2-1393809-0
32.00	22.60	54.00	602	1700	V23154D722B129	1413000-1
32.00	22.60	54.00	602	1700	V23154D722B129	1419138-9
32.00	22.60	54.00	602	1700	V23154D722B610	2-1393809-1
32.00	33.80	54.00	602	1700	V23154D722C110	2-1393809-2
32.00	33.80	54.00	602	1700	V23154D722C410	2-1393809-3
48.00	30.00	75.00	720	3200	V23154D726B110	3-1393809-2
48.00	30.00	75.00	720	3200	V23154D726B112	3-1393809-4
48.00	30.00	75.00	720	3200	V23154D726B117	3-1393809-5
48.00	30.00	75.00	720	3200	V23154D726B124	3-1393809-6
48.00	30.00	75.00	720	3200	V23154D726B129	3-1393809-7
48.00	30.00	75.00	720	3200	V23154D726B610	3-1393809-8

## Cradle Relay N V23154/V23162

### Coil Data (values at 20 °C)

### Ordering Information

Nominal Voltage Unom Vdc	Operating voltage range		Coil power mW	Coil Resistance $\Omega \pm 15\%$	Relay code	Typ part number
	Minimum Voltage Umin Vdc	Maximum voltage Umax Vdc				

#### V23154-D0XX standard, size II

48.00	45.00	75.00	720	3200	V23154D726C110	3-1393809-9
48.00	37.00	75.00	720	3200	V23154D726C112	4-1393809-0
48.00	37.00	75.00	720	3200	V23154D726C117	4-1393809-1
48.00	37.00	75.00	720	3200	V23154D726C410	4-1393809-2
60.00	36.00	92.00	766	4700	V23154D734B110	5-1393809-6
60.00	36.00	92.00	766	4700	V23154D734B610	5-1393809-7
60.00	43.00	92.00	766	4700	V23154D734C410	5-1393809-8
72.00	48.00	100.00	894	5800	V23154D404B110	1-1393807-8
72.00	48.00	100.00	894	5800	V23154D404B112	1-1393807-9
72.00	48.00	100.00	894	5800	V23154D404B117	2-1393807-0
72.00	48.00	100.00	894	5800	V23154D404B610	2-1393807-1
72.00	48.40	114.00	682	7600	V23154D704B110	1393808-6
72.00	48.40	114.00	682	7600	V23154D704B112	1393808-8
72.00	48.40	114.00	682	7600	V23154D704B114	1393808-9
72.00	48.40	114.00	682	7600	V23154D704B116	1-1393808-0
72.00	48.40	114.00	682	7600	V23154D704B117	1-1393808-1
72.00	48.40	114.00	682	7600	V23154D704B119	1-1393808-2
72.00	48.40	114.00	682	7600	V23154D704B121	1-1393808-3
72.00	48.40	114.00	682	7600	V23154D704B210	1-1393808-4
72.00	58.70	114.00	682	7600	V23154D704C110	1-1393808-6
72.00	58.70	114.00	682	7600	V23154D704C112	1-1393808-7
72.00	58.70	114.00	682	7600	V23154D704C113	1-1393808-8
110.00	65.00	164.00	807	15000	V23154D735B110	6-1393809-2
110.00	65.00	164.00	807	15000	V23154D735B117	6-1393809-3
110.00	65.00	164.00	807	15000	V23154D735B610	6-1393809-4
125.00	81.00	190.00	748	20900	V23154D703B110	1393808-1
125.00	81.00	190.00	748	20900	V23154D703B117	1393808-3

#### V23154-D0XX 5A, size II

5.00	1.80	7.20	893	28	V23154D711F104	3-1393808-2
7.00	3.60	10.50	845	58	V23154C712B104	3-1393808-6
12.00	6.60	20.50	626	230	V23154D418F104	3-1393807-1
12.00	7.10	20.00	655	220	V23154D717F104	5-1393808-4
15.00	6.80	24.50	692	325	V23154D719F104	6-1393808-2
20.00	11.90	32.00	727	550	V23154D720F104	7-1393808-6
20.00	8.90	32.00	727	550	V23154D720F304	7-1393808-7
24.00	15.00	36.00	823	700	V23154D421F104	4-1393807-4
24.00	11.00	40.00	647	890	V23154D721F104	1393809-1
24.00	14.50	40.00	647	890	V23154D721F304	1393809-2
32.00	22.60	54.00	602	1700	V23154D722F104	2-1393809-4
48.00	30.00	75.00	720	3200	V23154D726F104	4-1393809-4
60.00	27.00	92.00	766	4700	V23154D734F104	6-1393809-0
72.00	36.00	100.00	894	5800	V23154D404F104	2-1393807-2
72.00	48.40	114.00	682	7600	V23154D704F104	1-1393808-9
110.00	65.00	164.00	807	15000	V23154D735F104	6-1393809-5
125.00	81.00	190.00	748	20900	V23154D703F104	1393808-4

#### V23154-M0XX standard, size I

7.00	2.70	10.50	845	58	V23154M712B104	1-1393810-8
12.00	5.30	20.00	655	220	V23154M717B104	2-1393810-1
12.00	7.10	20.00	655	220	V23154M717C104	2-1393810-2
15.00	6.80	24.50	692	325	V23154M719B104	2-1393810-3
15.00	9.10	24.50	692	325	V23154M719C104	2-1393810-4

## Cradle Relay N V23154/V23162

### Coil Data (values at 20 °C)

### Ordering Information

Nominal Voltage Unom Vdc	Operating voltage range		Coil power mW	Coil Resistance $\Omega \pm 15\%$	Relay code	Typc part number
	Minimum Voltage Umin Vdc	Maximum voltage Umax Vdc				

#### V23154-M0XX standard, size I

20.00	8.90	32.00	727	550	V23154M720B104	2-1393810-5
20.00	8.90	32.00	727	550	V23154M720B604	2-1393810-6
24.00	11.00	40.00	647	890	V23154M721B104	2-1393810-7
24.00	11.00	40.00	647	890	V23154M721B604	2-1393810-9
24.00	14.50	40.00	647	890	V23154M721C104	3-1393810-0
32.00	16.90	54.00	602	1700	V23154M722B104	3-1393810-4
32.00	16.90	54.00	602	1700	V23154M722B604	3-1393810-5
33.00	22.60	54.00	641	1700	V23154M722C104	2-1419172-5
33.00	22.60	54.00	641	1700	V23154M722C404	3-1393810-6
48.00	23.00	75.00	720	3200	V23154M726B104	3-1393810-8
48.00	30.00	75.00	720	3200	V23154M726C104	4-1393810-0
72.00	36.20	114.00	682	7600	V23154M704B104	1-1393810-5
125.00	61.00	190.00	748	20900	V23154M703B104	1-1393810-4

#### V23154-M0XX 5A, size I

7.00	2.70	10.50	845	58	V23154M712F101	1-1393810-9
19.00	8.20	31.00	681	530	V23154M720F105	2-1422030-5
24.00	11.00	40.00	647	890	V23154M721F101	3-1393810-1
24.00	11.00	40.00	647	890	V23154M721F105	3-1393810-2
24.00	11.00	40.00	647	890	V23154M721F106	3-1393810-3
33.00	16.00	54.00	641	1700	V23154M722F106	3-1393810-7
48.00	23.00	75.00	720	3200	V23154M726F106	4-1393810-1
72.00	36.20	114.00	682	7600	V23154M704F101	1-1393810-6

#### V23154-M4XX standard, size I

12.00	7.10	20.00	655	220	V23154M4717C104	4-1393810-5
15.00	9.10	24.50	692	325	V23154M4719C104	4-1393810-6
24.00	14.50	40.00	647	890	V23154M4721C104	4-1393810-7

#### V23154-M4XX 5A, size I

24.00	11.00	40.00	647	890	V23154M4721F106	2-1422030-4
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#### V23154-N0XX standard, size II

7.00	3.60	10.50	845	58	V23154N712B110	5-1393810-4
10.00	7.10	16.50	667	150	V23154N716C110	5-1393810-8
12.00	7.10	20.00	655	220	V23154N717B110	5-1393810-9
12.00	10.50	20.00	655	220	V23154N717C414	6-1393810-0
15.00	9.10	24.50	692	325	V23154N719B110	6-1393810-3
20.00	11.90	32.00	727	550	V23154N720B110	6-1393810-4
20.00	11.90	32.00	727	550	V23154N720B610	6-1393810-5
20.00	17.70	32.00	727	550	V23154N720C110	6-1393810-6
20.00	14.40	32.00	727	550	V23154N720C112	6-1393810-7
20.00	17.70	32.00	727	550	V23154N720C410	6-1393810-8
24.00	14.50	40.00	647	890	V23154N721B110	7-1393810-0
24.00	14.50	40.00	647	890	V23154N721B112	7-1393810-1
24.00	14.50	40.00	647	890	V23154N721B610	7-1393810-2
24.00	22.00	40.00	647	890	V23154N721C110	7-1393810-3
24.00	22.00	40.00	647	890	V23154N721C114	7-1393810-4
32.00	22.60	54.00	602	1700	V23154N722B110	7-1393810-6
32.00	33.80	54.00	602	1700	V23154N722C110	7-1393810-7
32.00	27.40	54.00	602	1700	V23154N722C112	7-1393810-8
48.00	30.00	75.00	720	3200	V23154N726B110	8-1393810-0
48.00	45.00	75.00	720	3200	V23154N726C110	8-1393810-2

## Cradle Relay N V23154/V23162

### Coil Data (values at 20 °C) Ordering Information

Nominal Voltage Unom Vdc	Operating voltage range		Coil power mW	Coil Resistance $\Omega \pm 15\%$	Relay code	Typ part number
	Minimum Voltage Umin Vdc	Maximum voltage Umax Vdc				
48.00	37.00	75.00	720	3200	V23154N726C117	8-1393810-3
48.00	37.00	75.00	720	3200	V23154N726C119	8-1393810-4
48.00	45.00	75.00	720	3200	V23154N726C121	8-1393810-5
48.00	45.00	75.00	720	3200	V23154N726C124	8-1393810-6
60.00	36.00	92.00	766	4700	V23154N734B110	8-1393810-9
72.00	48.00	100.00	894	5800	V23154N404B110	4-1393810-8
72.00	58.70	114.00	682	7600	V23154N704C114	5-1393810-2
72.00	58.70	114.00	682	7600	V23154N704C121	5-1393810-3

#### V23154-N0XX 5A, size II

12.00	5.30	20.00	655	220	V23154N717F104	6-1393810-1
20.00	8.90	32.00	727	550	V23154N720F104	6-1393810-9
24.00	11.00	40.00	647	890	V23154N721F104	7-1393810-5
32.00	16.90	54.00	602	1700	V23154N722F104	7-1393810-9
48.00	23.00	75.00	720	3200	V23154N726F104	8-1393810-7
60.00	27.00	92.00	766	4700	V23154N734F104	9-1393810-0
72.00	36.20	114.00	682	7600	V23154N704F104	1422030-1
125.00	61.00	190.00	748	20900	V23154N703F104	5-1393810-1

#### V23154-N4XX standard, size II

10.00	9.00	16.50	667	150	V23154N4716C110	1393811-1
20.00	11.90	32.00	727	550	V23154N4720B110	1393811-2
24.00	22.00	40.00	647	890	V23154N4721C110	1393811-7
48.00	30.00	75.00	720	3200	V23154N4726B110	1-1393811-0
60.00	36.00	92.00	766	4700	V23154N4734B110	1-1393811-1

#### V23154-N4XX 5A, size II

24.00	11.00	40.00	647	890	V23154N4721F104	1393811-8
60.00	27.00	92.00	766	4700	V23154N4734F104	1-1393811-2
110.00	49.00	164.00	807	15000	V23154N4735F104	1-1393811-3

#### V23162-A0XX standard, size I

5.00	1.80	7.20	893	28	V23162A711B104	2-1393818-5
12.00	5.30	20.00	655	220	V23162A717B104	2-1393818-8
12.00	5.30	20.00	655	220	V23162A717B604	2-1393818-9
15.00	6.80	24.50	692	325	V23162A719B104	3-1393818-2
20.00	8.90	32.00	727	550	V23162A720B104	3-1393818-3
20.00	8.90	32.00	727	550	V23162A720B604	3-1393818-4
20.00	11.90	32.00	727	550	V23162A720C104	3-1393818-5
20.00	11.90	32.00	727	550	V23162A720C404	3-1393818-6
24.00	11.20	36.00	823	700	V23162A421B104	1393818-6
24.00	11.20	36.00	823	700	V23162A421B604	1393818-7
24.00	11.00	40.00	647	890	V23162A721B104	3-1393818-7
24.00	11.00	40.00	647	890	V23162A721B604	3-1393818-8
24.00	14.50	40.00	647	890	V23162A721C104	4-1393818-0
24.00	14.50	40.00	647	890	V23162A721C404	4-1393818-1
32.00	16.90	54.00	602	1700	V23162A722B101	4-1393818-5
32.00	16.90	54.00	602	1700	V23162A722B104	4-1393818-6
32.00	16.90	54.00	602	1700	V23162A722B604	4-1393818-7
32.00	22.60	54.00	602	1700	V23162A722C104	4-1393818-8
48.00	23.00	75.00	720	3200	V23162A726B104	5-1393818-1
48.00	23.00	75.00	720	3200	V23162A726B604	5-1393818-2
48.00	30.00	75.00	720	3200	V23162A726C404	5-1393818-3
48.00	30.00	75.00	720	3200	V23162A735C104	5-1393818-5
72.00	36.00	100.00	894	5800	V23162A404B104	1393818-1

## Cradle Relay N V23154/V23162

### Coil Data (values at 20 °C) Ordering Information

Nominal Voltage Unom Vdc	Operating voltage range		Coil power mW	Coil Resistance $\Omega \pm 15\%$	Relay code	Typ part number
	Minimum Voltage Umin Vdc	Maximum voltage Umax Vdc				

V23162-A0XX standard, size I

72.00	36.00	100.00	894	5800	V23162A404B604	1419147-6
72.00	36.20	114.00	682	7600	V23162A704B104	1-1393818-9
72.00	36.20	114.00	682	7600	V23162A704B604	2-1393818-0
72.00	48.40	114.00	682	7600	V23162A704C402	2-1393818-1
72.00	48.40	114.00	682	7600	V23162A704C404	2-1393818-2
110.00	65.00	164.00	807	15000	V23162A735C404	5-1393818-6
125.00	61.00	190.00	748	20900	V23162A703B104	1-1393818-6
125.00	81.00	190.00	748	20900	V23162A703C404	1-1393818-7

V23162-A0XX 5A, size I

1.10	0.50	1.70	807	1.5	V23162A702F106	1-1393818-5
12.00	5.30	20.00	655	220	V23162A717F105	3-1393818-0
12.00	7.10	20.00	655	220	V23162A717F106	3-1393818-1
24.00	11.00	40.00	647	890	V23162A721F101	4-1393818-2
24.00	11.00	40.00	647	890	V23162A721F105	4-1393818-3
24.00	14.50	40.00	647	890	V23162A721F106	4-1393818-4
33.00	16.00	54.00	641	1700	V23162A722F101	4-1393818-9
33.00	16.00	54.00	641	1700	V23162A722F105	5-1393818-0
48.00	30.00	75.00	720	3200	V23162A726F106	5-1393818-4
72.00	48.00	100.00	894	5800	V23162A404F106	1393818-2
72.00	36.20	114.00	682	7600	V23162A704F105	2-1393818-3
72.00	48.40	114.00	682	7600	V23162A704F106	2-1393818-4
125.00	81.00	190.00	748	20900	V23162A703F106	1-1393818-8

V23162-B0XX standard, size II

7.00	3.60	10.50	845	58	V23162B712B110	8-1393818-1
8.50	7.60	14.00	657	110	V23162B715C110	8-1393818-4
10.00	5.80	16.50	667	150	V23162B716B110	8-1393818-5
12.00	7.10	20.00	655	220	V23162B717B110	8-1393818-7
12.00	7.10	20.00	655	220	V23162B717B610	8-1393818-8
12.00	8.70	20.00	655	220	V23162B717C112	8-1393818-9
15.00	9.10	24.50	692	325	V23162B719B110	9-1393818-1
20.00	11.90	32.00	727	550	V23162B720B110	9-1393818-4
20.00	11.90	32.00	727	550	V23162B720B112	9-1393818-5
20.00	11.90	32.00	727	550	V23162B720B117	9-1393818-6
20.00	11.90	32.00	727	550	V23162B720B610	9-1393818-7
20.00	17.70	32.00	727	550	V23162B720C110	9-1393818-8
20.00	14.40	32.00	727	550	V23162B720C112	9-1393818-9
20.00	17.70	32.00	727	550	V23162B720C410	1393819-1
24.00	15.00	36.00	823	700	V23162B421B110	6-1393818-1
24.00	15.00	36.00	823	700	V23162B421B610	6-1393818-3
24.00	14.50	40.00	647	890	V23162B721B110	1393819-4
24.00	14.50	40.00	647	890	V23162B721B112	1393819-5
24.00	14.50	40.00	647	890	V23162B721B610	1-1393819-0
24.00	22.00	40.00	647	890	V23162B721C110	1-1393819-2
24.00	22.00	40.00	647	890	V23162B721C410	1-1393819-3
32.00	22.60	54.00	602	1700	V23162B722B110	1-1393819-5
32.00	22.60	54.00	602	1700	V23162B722B112	1-1393819-6
32.00	22.60	54.00	602	1700	V23162B722B610	1-1393819-7
32.00	33.80	54.00	602	1700	V23162B722C410	1-1393819-8
48.00	30.00	75.00	720	3200	V23162B726B110	2-1393819-0
48.00	30.00	75.00	720	3200	V23162B726B112	2-1393819-1
48.00	30.00	75.00	720	3200	V23162B726B610	2-1393819-3

## Cradle Relay N V23154/V23162

### Coil Data (values at 20 °C)

### Ordering Information

Nominal Voltage Unom Vdc	Operating voltage range		Coil power mW	Coil Resistance $\Omega \pm 15\%$	Relay code	Typ part number
	Minimum Voltage Umin Vdc	Maximum voltage Umax Vdc				

#### V23162-B0XX standard, size II

48.00	45.00	75.00	720	3200	V23162B726C110	2-1393819-6
60.00	36.00	92.00	766	4700	V23162B734B610	2-1393819-9
72.00	48.00	100.00	894	5800	V23162B404B110	5-1393818-7
72.00	48.40	114.00	682	7600	V23162B704B110	7-1393818-6
72.00	48.40	114.00	682	7600	V23162B704B112	7-1393818-7
72.00	48.40	114.00	682	7600	V23162B704B610	7-1393818-8
110.00	65.00	164.00	807	15000	V23162B735B110	3-1393819-0
110.00	65.00	164.00	807	15000	V23162B735B610	3-1393819-1
110.00	98.00	164.00	807	15000	V23162B735C110	3-1393819-2
110.00	98.00	164.00	807	15000	V23162B735C410	3-1393819-3
125.00	81.00	190.00	748	20900	V23162B703B110	7-1393818-3
125.00	81.00	190.00	748	20900	V23162B703B610	7-1393818-4

#### V23162-B0XX 5A, size II

7.00	3.60	10.50	845	58	V23162B712F104	8-1393818-2
12.00	7.10	20.00	655	220	V23162B717F104	9-1393818-0
15.00	9.10	24.50	692	325	V23162B719F104	9-1393818-3
20.00	11.90	32.00	727	550	V23162B720F104	1393819-2
24.00	15.00	36.00	823	700	V23162B421F104	6-1393818-4
24.00	14.50	40.00	647	890	V23162B721F104	1-1393819-4
32.00	22.60	54.00	602	1700	V23162B722F104	1-1393819-9
48.00	30.00	75.00	720	3200	V23162B726F104	2-1393819-7
72.00	48.40	114.00	682	7600	V23162B704F104	8-1393818-0
110.00	65.00	164.00	807	15000	V23162B735F104	3-1393819-4
125.00	81.00	190.00	748	20900	V23162B703F104	7-1393818-5

#### V23162-H0XX standard, size II

8.50	5.10	14.00	657	110	V23162H715B110	4-1393819-2
20.00	11.90	32.00	727	550	V23162H720B110	4-1393819-4
20.00	11.90	32.00	727	550	V23162H720B610	4-1393819-6
20.00	17.70	32.00	727	550	V23162H720C410	4-1393819-7
20.00	17.70	32.00	727	550	V23162H720C610	4-1393819-8
24.00	15.00	36.00	823	700	V23162H421B610	3-1393819-7
24.00	14.50	40.00	647	890	V23162H721B110	4-1393819-9
24.00	14.50	40.00	647	890	V23162H721B610	5-1393819-0
24.00	22.00	40.00	647	890	V23162H721C410	5-1393819-1
32.00	33.80	54.00	602	1700	V23162H722C110	5-1393819-3
32.00	33.80	54.00	602	1700	V23162H722C410	5-1393819-4

#### V23162-H0XX 5A, size II

7.00	3.60	10.50	845	58	V23162H712F104	4-1393819-1
15.00	9.10	24.50	692	325	V23162H719F104	4-1393819-3
24.00	14.50	40.00	647	890	V23162H721F104	5-1393819-2
24.00	14.50	40.00	647	890	V23162H721F107	1419147-7
32.00	22.60	54.00	602	1700	V23162H722F104	5-1393819-5
72.00	48.40	114.00	682	7600	V23162H704F104	4-1393819-0
125.00	81.00	190.00	748	20900	V23162H703F104	3-1393819-9



## Cradle Relay N V23154/V23162

### Instructions for Impulse Operation

The maximum voltage stated in the table (page 6) can be increased for impulse operation as follows:

$$\begin{aligned}
 U_{II \text{ Impuls}} &= U_{II \text{ tamb}} \cdot q \\
 U_{II \text{ tamb}} &= \text{Maximum continuous voltage at ambient temperature } t_{\text{amb}} \\
 q &= \text{Factor}
 \end{aligned}$$

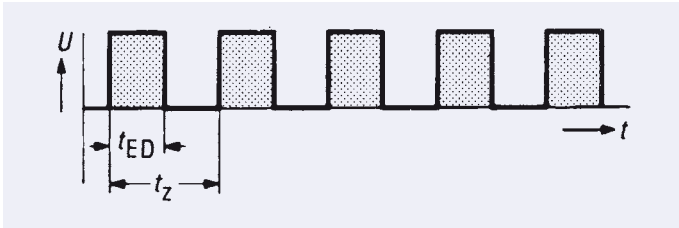
The impulse voltage must not exceed 80% of the test voltage (winding/frame or winding/winding) or 2.5 times the value of the maximum voltage listed in the table (page 6).

$$\text{If } t_{ED} \leq 3 \text{ s then } q = \sqrt{\frac{t_z}{t_{ED}}}$$

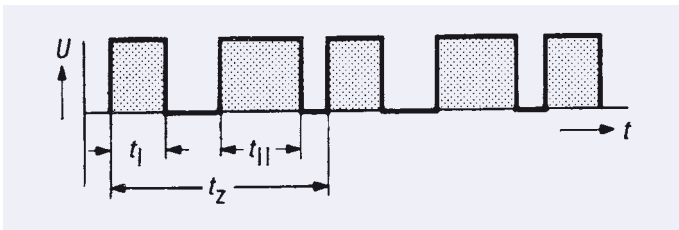
$$\begin{aligned}
 \text{If } t_{ED} &= \text{Pulse width} \\
 t_z &= \text{Cycle time} \\
 \text{If } t_{ED} &= > 3 \text{ s the value of } q \text{ must be obtained from the nomograph (next page).}
 \end{aligned}$$

Examples of various periodic pulse trains (energizing side)

1. Periodic recurrence of one energizing pulse



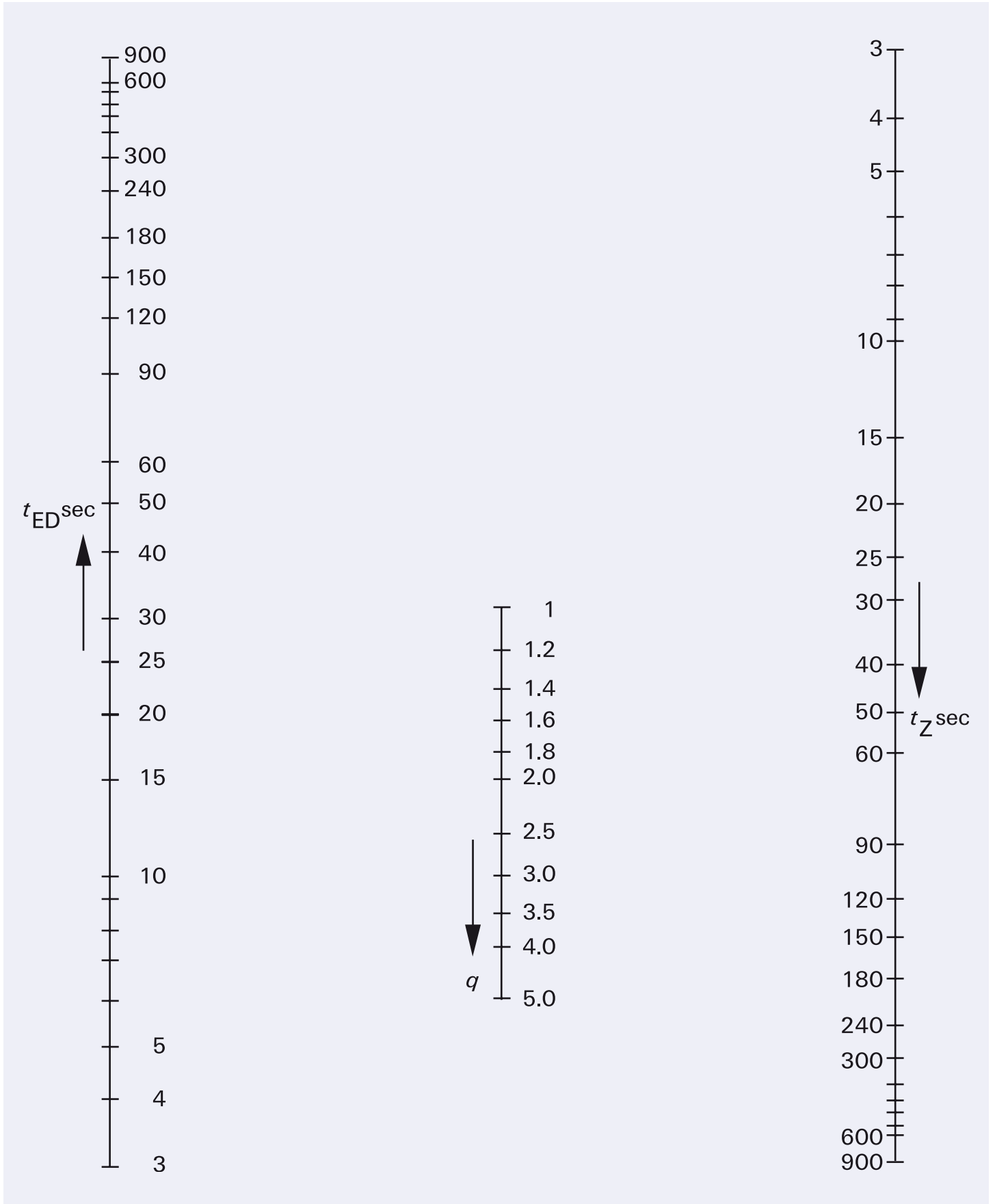
2. Periodic recurrence of two unequal energizing pulses



$$\begin{aligned}
 t_{ED} &= t_I + t_{II} \\
 t_I + t_{II} &= \text{Pulse widths within one cycle}
 \end{aligned}$$

**Cradle Relay N V23154/V23162**

**Nomograph for Determining Factor  $q$**



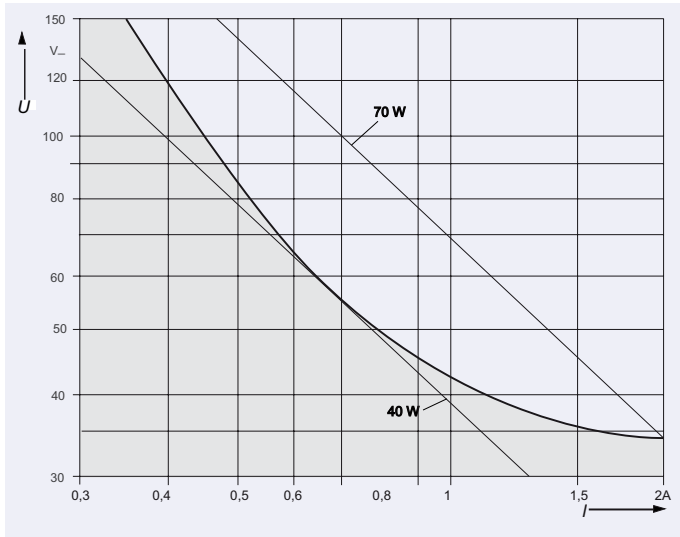
## Cradle Relay N V23154/V23162

### Contact Data

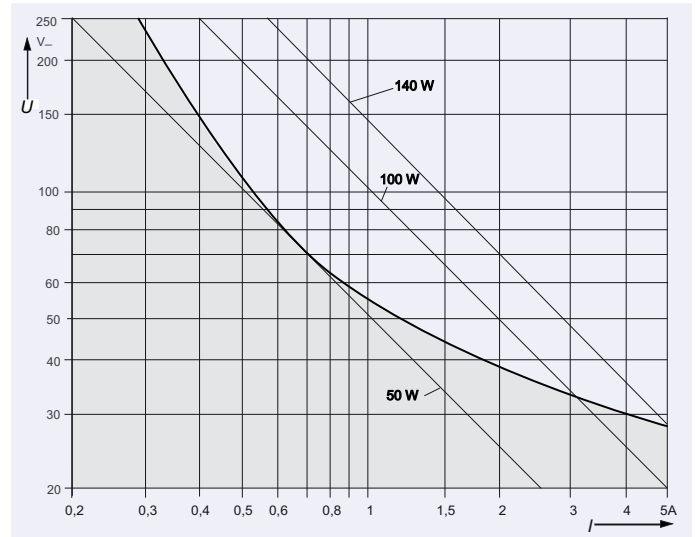
Ordering code block 3	B104/B110/ B112	B604/B610/ B612	C104/C110/ C112	C404/C410	F104 ... F107
Number of contacts and Type	max. 4 changeover contacts, 2 break contacts or 6 make contacts				
Contact assembly	single contacts		bifurcated contacts		single contacts
Contact material	silver, gold-flashed	gold 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	35 to 70 W see load limit curve below 50 VA	5 W 5 VA	35 to 70 W see load limit curve below 50 VA	5 W 5 VA	50 to 140 W see load limit curve below 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



for contact sets F1xx



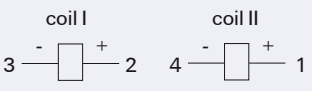
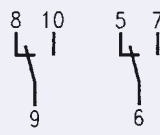
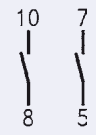
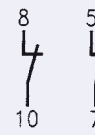
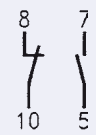
Safe breaking, no stationary arc  
Contact material silver, gold-flashed

$I$  = switching current  
 $U$  = switching voltage

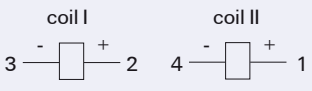
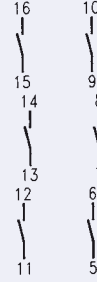
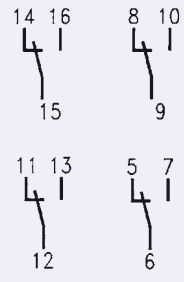
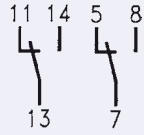
## Cradle Relay N V23154/V23162

### Contact sets

#### Size I

Number of contacts and type	2 changeover contacts		2 make contacts	2 break contacts	1 break 1 make contact
Symbols with base connections  Contacts in release condition, coil polarity to set the relay					
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	6 make contacts		4 changover contacts		2 changover contacts
Symbols with base connections  Contacts in release condition, coil polarity to set the relay					
Contact assembly	single contacts	bifurcated contacts	single contacts	bifurcated contacts	single contacts
Contact material silver, gold-flashed Ordering code block 3	B112	C112	B110	C110	F104
Contact material gold F Ordering code block 3	B612		B610	C410	

## Cradle Relay N V23154/V23162

### Insulation

Ordering code block 3	B1xx	B6xx	C1xx	C4xx	F1xx
Test voltage (1 min)					
winding / frame		500 Vac <sub>rms</sub>			500 Vac <sub>rms</sub>
contact / contact		500 Vac <sub>rms</sub>			1000 Vac <sub>rms</sub>
contact / frame		500 Vac <sub>rms</sub>			1000 Vac <sub>rms</sub>
contact / coil		1000 Vac <sub>rms</sub>			1500 Vac <sub>rms</sub>

### General Data

Ordering code block 3	B1xx	B6xx	C1xx	C4xx	F1xx
Operate time at $U_{nom}$ and 20 °C, typical	7.5 ms				
Reset time typical	3 ms				
Maximum switching rate without load	50 operations/s				10 operations/s
Ambient temperature range acc. to EN 61810-1 / IEC 61810-1 and VDE 0435 part 201	-40 °C ... +70 °C				
Thermal resistance	50 K/W				
Maximum temperature	100 °C				
Continuous thermal load	1.6 W				
Degree of protection acc. to EN 60529 / IEC 60529 / VDE 0470 part 1	dust-protected IP 30 or hermetically sealed IP 67				
Mechanical endurance	approx. 10 <sup>8</sup> operations				approx. 10 <sup>7</sup> operations
Mounting position	any				
Processing information	Ultrasonic cleaning should be avoided if possible or carried out only after consulting the manufacturer				
Weight					
V23154-C0/-MO Size I	approx. 20 g				
V23154-D0/-NO Size II	approx. 25 g				
V23162-A0xxx Size I	approx. 30 g				
V23162-B0xxx Size II	approx. 35 g				

## Cradle Relay N V23154/V23162

### 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 W/62,5 VA. It is currently the only 2 A rated 4G relay on the market. Dielectric strength fulfills the Telcordia requirements according GR 1089 (2,5 kV – 2 / 10  $\mu$ s) and FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The IM relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950.

Dimensions approx. 10 x 6 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 ... 24 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 kV – 2 / 10  $\mu$ s) and FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The P2 relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. 15 x 7,5 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 ... 48 V, coil power consumption of 80 ... 260 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 W/62,5 VA. Dielectric strength fulfills the Telcordia requirements according GR 1089 (2,5 kV – 2 / 10  $\mu$ s) and FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The FX2 relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. 15 x 7,5 mm board space and 10,7 mm height.

### FT2 / FU2 Relays

3rd generation non polarized, non latching 2 c/o telecom relay with bifurcated contacts. Nominal voltage range from 3 ... 48 V, coil power consumption 200 ... 300 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 kV – 2 / 10  $\mu$ s) and FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The FT2/FU2 relay is tested according CECC/IECQ and certified in accordance with IEC/EN 60950 and UL 60950. Dimensions approx. 15 x 7,5 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 ... 48 V, coil power consumption of 80 ... 260 mW for the high sensitive version, 140... 300 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 W/62,5 VA. Dielectric strength fulfills FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). The FP2 is tested according CECC/IECQ approved.

Dimensions approx. 14 x 9 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 kV – 10 / 160  $\mu$ s).

Dimensions approx. 20 x 10 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 ... 48 V, coil power consumption from 150 ... 500 mW. The D2n relay is capable to switch currents up to 3 A. Dielectric strength fulfills the requirements according FCC part 68 (1,5 kV – 10 / 160  $\mu$ s). Dimensions approx. 20 x10 mm board space and 11 mm height.

### P1 Relays

Extremely sensitive, polarized 1 c/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 ... 24 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 kV – 10 / 160  $\mu$ s). Dimensions approx. 13 x 7,6 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 ... 24 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 x 10,6 mm board space and 11,5 mm height.

### Reed Relays

High sensitive, non polarized relay for telecom and various other applications, available with 1 n/o, 2 n/o or 1c/o contacts. Nominal voltage range from 5 ... 24 V, coil power consumption 50...280 mW for 1 n/o and 125 ... 280 mW for 2 n/o or 1 c/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 x 7 mm board space and 5 ... 7,5 mm height for DIP or 19,8 x 5 mm board space and 7,8 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 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 x 24 to 19x35 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 ... 24 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 x 7.3 x 10.3 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 x 7.6 x 10.6 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 x 7.6 x 10.6 mm.



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