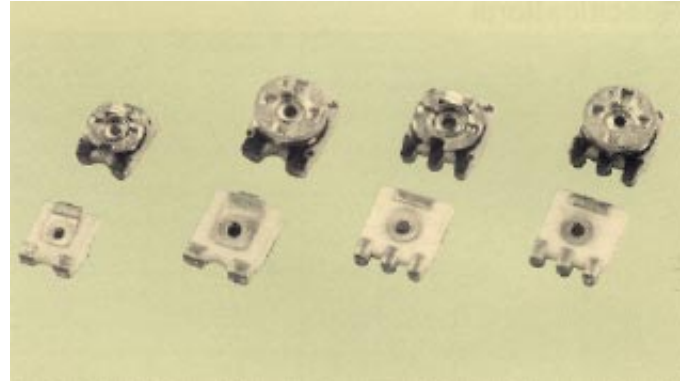


## CVR-32 / CVR-42 / CVR-43 Series

### Features:

- 1) Two small sizes and profiles: CVR-3 & CVR-4.
- 2) Solderable only in the terminal electrode areas.
- 3) Individual part marking provides easy identification.
- 4) The CVR-4 series is available in a 2 or 3 terminal style.
- 5) Packaged in bulk, or on 12mm embossed plastic tape and reel.
- 6) Easily adjustable with a screwdriver.



### How To Order:

**CVR - 4 3 C - 223 S W 1**

#### Others

#### Standard Quantity Per Package

CVR-4		CVR-3	
1	= 1,000pcs	2	= 2,000pcs
5	= 5,000pcs	5	= 5,000pcs
		0	= 10,000pcs

#### Packaging

B = Bulk  
 W = Taping (W direction)  
 X = Taping (X direction) option

#### Adjustment Method

S = Standard  
 G = Low Profile  
 A = For Automatic  
 R = Bottom (CVR-43 only)

#### Nominal Resistance Value

(3 digits, 2 significant digits and 1 number of zeros)  
 example: 223 = 22kΩ

#### Circuit Type

A = Voltage adjustment  
 C = Current adjustment (except for CVR-3)

#### Terminal Numbers

2 = 2 terminals  
 3 = 3 terminals (except for CVR-3)

#### Size

4 = 4mm  
 3 = 3mm

#### Chip Trimmer Potentiometer

## CVR-32 / CVR-42 / CVR-43 Series

### Dimensions

Item	Circuit Type	Equivalent Circuit	Dimension (Unit: mm)
(Face) (Back)  CVR-43 Auto	A type		<p>*G type height = <math>1.8 \pm 0.2</math></p>
	C type		
CVR-42 Auto	A type		<p>*G type height = <math>1.8 \pm 0.2</math></p>
	C type		
CVR-43 Reverse	A type		
	C type		
CVR-43 Standard	A type		
	C type		
CVR-42 Standard	A type		
	C type		
CVR-32 Standard	A type		

## CVR-32 / CVR-42 / CVR-43 Series

### Rating

Specifications	Rating	
	CVR-4 series	CVR-3 series
Rated power	0.2W (70°C)	0.1W (70°C)
Rated voltage	100V	50V
Resistance Value	100Ω~2.2MΩ	100Ω~2.2MΩ
Resistance Tolerance	±30%	±30%
Resistance Change Linearity	Straight line "B"	Straight line "B"
Rotation life	(20 rotations) ±15%	(20 rotations) ±15%
Torque	20~200g•cm	20~200g•cm
Rotation angle	270°±20°	270°±20°
Operating temp	-40°C~+100°C	-40°C~+100°C
T.C.R.	±250 ppm/°C	±250 ppm/°C

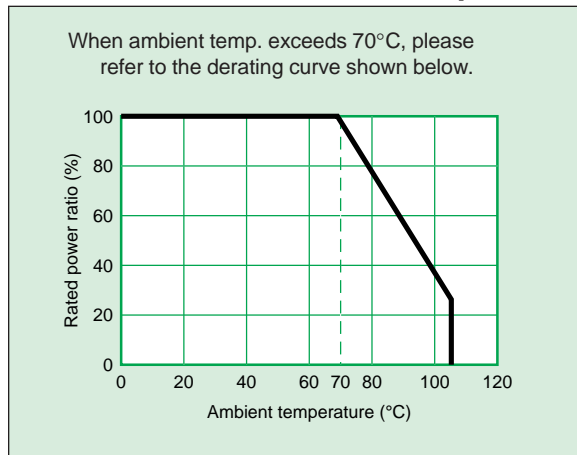
### Code

Type Marking  
(Left side (1) only . . . circuit type C)  
(Both side (1)&(3) . . . circuit type A)

Code (a) (The first two significant figures)		Code (b) (10 logarithmic multiplier)	
Sign	Value	Sign	Value
1	10	1	10 <sup>1</sup>
A	15	2	10 <sup>2</sup>
2	20	3	10 <sup>3</sup>
3	30	4	10 <sup>4</sup>
4	47	5	10 <sup>5</sup>
5	50		
6	68		

• Example (a) 4 (b) 3 ⇒ 47 × 10<sup>3</sup> = 47 kΩ

### Rated Power vs. Ambient Temp.



### Rated Power

Rated voltage is calculated from the following definition.

$$E = \sqrt{PR}$$

E: Rated voltage (V)  
P: Rated power (W)  
R: Nominal resistance value (Ω)

Maximum operating voltage

CVR-4 series – 100VDC  
CVR-3 series – 50VDC

### Standard Values

Style	Full resistance value (Ω, kΩ, MΩ)	Code	
		(a)	(b)
CVR-□□□-101	100 Ω	1	1
CVR-□□□-151	150 Ω	A	1
CVR-□□□-201	200 Ω		1
CVR-□□□-221	220 Ω	2	1
CVR-□□□-301	300 Ω		1
CVR-□□□-331	330 Ω	3	1
CVR-□□□-471	470 Ω	4	1
CVR-□□□-501	500 Ω	5	1
CVR-□□□-681	680 Ω	6	1
CVR-□□□-102	1.0 kΩ	1	2
CVR-□□□-152	1.5 kΩ	A	2
CVR-□□□-202	2.0 kΩ		2
CVR-□□□-222	2.2 kΩ	2	2
CVR-□□□-302	3.0 kΩ		2
CVR-□□□-332	3.3 kΩ	3	2
CVR-□□□-472	4.7 kΩ	4	2
CVR-□□□-502	5.0 kΩ	5	2
CVR-□□□-682	6.8 kΩ	6	2
CVR-□□□-103	10 kΩ	1	3
CVR-□□□-153	15 kΩ	A	3
CVR-□□□-203	20 kΩ		3
CVR-□□□-223	22 kΩ	2	3
CVR-□□□-303	30 kΩ		3
CVR-□□□-333	33 kΩ	3	3
CVR-□□□-473	47 kΩ	4	3
CVR-□□□-503	50 kΩ	5	3
CVR-□□□-683	68 kΩ	6	3
CVR-□□□-104	100 kΩ	1	4
CVR-□□□-154	150 kΩ	A	4
CVR-□□□-204	200 kΩ		4
CVR-□□□-224	220 kΩ	2	4
CVR-□□□-304	300 kΩ		4
CVR-□□□-334	330 kΩ	3	4
CVR-□□□-474	470 kΩ	4	4
CVR-□□□-504	500 kΩ	5	4
CVR-□□□-684	680 kΩ	6	4
CVR-□□□-105	1.0 MΩ	1	5
CVR-□□□-155	1.5 MΩ	A	5
CVR-□□□-205	2.0 MΩ		5
CVR-□□□-225	2.2 MΩ	2	5

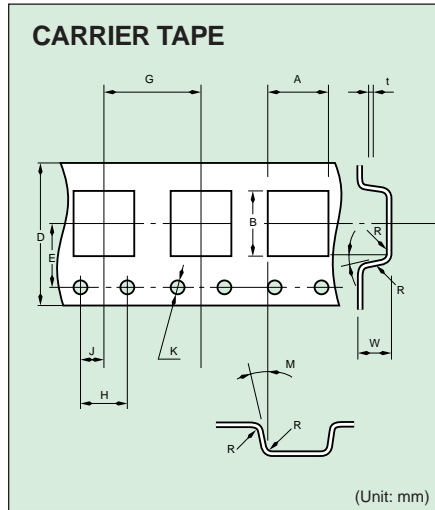
## CVR-32 / CVR-42 / CVR-43 Series

### Specifications and Methods of Reliability Test

Item	Specification	Measuring Condition
Load life	$\Delta R < \pm 5\%$ of Initial value	1: Stabilize at $70 \pm 2^\circ\text{C}$ for 8 hours. 2: Measure initial value. 3: Perform voltage cycle for $1000 \pm 12$ hours. on: 1.5 hours off: 0.5 hours 4: Stabilize at $25^\circ\text{C}$ for 5 hours. 5: Measure value.
Load life in moisture	$\Delta R < \pm 5\%$ of Initial value	1: Perform voltage cycle for $500 \pm 12$ hours in chamber ( $40 \pm 2^\circ\text{C}$ , 90–95% RH). on: 1.5 hours off: 0.5 hours 2: Stabilize at $25^\circ\text{C}$ for 5 hours. 3: Measure value.
Heat resistance	$\Delta R < \pm 5\%$ of Initial value	Dwell in temperature $100 \pm 3^\circ\text{C}$ for $250 \pm 6$ hours stabilize at $25^\circ\text{C}$ for 5 hours. Measure resistance value.
Temperature cycle	$\Delta R < \pm 2\%$ of Initial value	Cycle 1: $-40^{+3}_{-3}^\circ\text{C}$ for 30 min.      1 cycle is composed of 4 conditions. 2: $25^{+10}_{-5}^\circ\text{C}$ for 15 min.      After 5 cycles, stabilize at $25^\circ\text{C}$ 3: $100^{+10}_{-5}^\circ\text{C}$ for 30 min.      for 5 hours. 4: $25^{+10}_{-5}^\circ\text{C}$ for 15 min.      Measure resistance value.
Antivibration test	$\Delta R < \pm 1\%$ of Initial value	Sweep at frequency 10 to 55Hz, amplitude 15mm, during 2 hours each in X, Y, and Z axes. (total 6 hours) Measure resistance value.
Resistance to solder	$\Delta R < \pm 1\%$ of Initial value (no evidence of leaching)	Immerse in solder bath at $250^\circ\text{C}$ for $5 \pm 1$ sec. Stabilize at $25^\circ\text{C}$ for 5 hours. Measure resistance value.
Solvent resistance	$\Delta R < \pm 1\%$ of Initial value	Immerse in trichloroethylene or equivalent for 15 min. Stabilize at $25^\circ\text{C}$ for 5 hours. Measure resistance value.
Solderability	Coverage $> 75\%$ each termination end	Immerse in solder at $230 \pm 5^\circ\text{C}$ for $3 \pm 0.5$ sec.

## CVR-32 / CVR-42 / CVR-43 Series

### Tape & Reel Packaging Dimensions



Code	A	B	D	E
CVR-4	4.2±0.2	4.8±0.2	12.0±0.3	5.5±0.1
CVR-3	3.3±0.2	4.0±0.2	8.1±0.3	3.5±0.1

Code	F	G	H	J
CVR-4	1.5±0.2	8.0±0.1	4.0±0.1	2.0±0.1
CVR-3	1.75±0.2	4.0±0.1	4.0±0.1	2.0±0.1

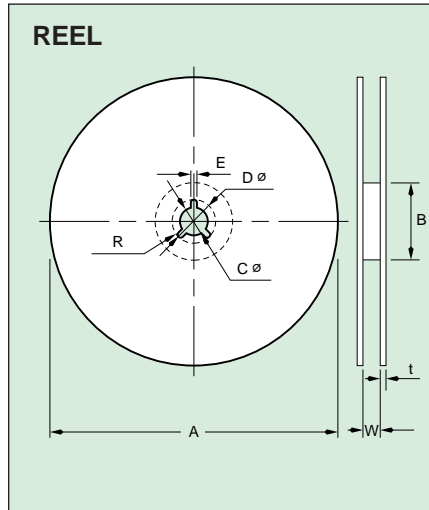
Code	K	M	R	W*
CVR-4	1.5 <sup>+0.1</sup> <sub>-0</sub>	15°±0	0.3±0	2.7±0.1
CVR-3	1.55±0.1	3°±0	0.3±0	2.15±0.2

Code	t
CVR-4	0.3±0.1
CVR-3	0.2±0.1

\*G type W = 1.85±0.1

### Remarks

- 1) Embossed style plastic (CVR-4 series), or vinyl chloride (CVR-3 series).
- 2) The dimensional tolerance on pitch is ± 0.2 mm cumulative over 40 pitches (CVR-4), or ± 0.2 mm cumulative over 10 pitches (CVR-3).
- 3) The top cover tape width is 9.5 ± 0.2 mm (CVR-4), or 5.7 ± 0.2 mm (CVR-3), and shall not cover the feeder sprocket holes.



Code	1,000 per reel	5,000 per reel
A	178±2.0	420±2.0
B	>50	80.0±2.0
C	13.0±0.5	13.0±0.5
D	21.0±0.8	21.0±1.0
E	2.0±0.5	2.0±0.5
W	14.0±1.5	14.0±1.5
t	1.0±0.5	2.0±0.5
R	1.0	5.0

Code	2,000 per reel	5,000 per reel	10,000 per reel
A	178±2.0	250±2.0	330±2.0
B	80.0±2.0	80.0±2.0	80.0±2.0
C	13.0±0.5	13.0±0.5	13.0±0.5
D	21.0±0.5	21.0±0.5	21.0±0.5
E	2.0±0.5	2.0±0.5	2.0±0.5
W	9.5±1.0	9.5±1.0	9.5±1.0
t	2.5MAX	3.0MAX	3.0MAX
R	1.0±0.5	1.5±0.5	1.5±0.5

### Taping

- 1) Quantity per reel:  
A maximum of 5000 pcs at 1 reel (CVR-4) or maximum of 1,000 pcs at 1 reel (CVR-3) is packaged. There should be no missing parts.
- 2) Direction of taping:  
W direction is our standard; X direction taping is available upon special order

