



Features

- Wave solderable due to stainless steel wiper.
- Easy identification by letter code of resistance value and dot marking of circuit type on adjustment side.
- The same shape of 2 or 3 terminals allows standardization of circuit pattern design (CVR-4 series).
- High accuracy and high reliability by cermet construction.
- Tape & reel packaging (all of CVR series), and automatic adjustment type is available. (CVR-42G, CVR-43G, CVR-32A, CVR-12G)
- Standardization on both E6 value series and 1, 2, 3, 5 series. (Excludy CVR-12G)

Application

- Optical pick ups
- Tuners
- HDD/FDD
- Telecommunications
- LCD
- Camcorders

How to Order

CVR 3 2 A 223 S W 2 C 30
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① Series
 - ② Size (4 : 4mm, 3 : 3mm, 1 : 1.5mm)
 - ③ Number of Terminals
- | | | | |
|---|-------------|---|-------------|
| 2 | 2 terminals | 3 | 3 terminals |
|---|-------------|---|-------------|
- (CVR-3, CVR-1 : 2 terminals only available)
- ④ Circuit Type

- | | | | |
|---|--------------------|---|--------------------|
| A | Voltage Adjustment | C | Current Adjustment |
|---|--------------------|---|--------------------|
- (CVR-3, CVR-1 : A type only available)
- ⑤ Nominal Full Resistance Value (3 Digits)
102 → 10 × 10² = 1000Ω
 - ⑥ Adjustment Method

Code	Adjustment Method	Type
S	Front Side Adjustment by Standard Screw Driver	CVR-42•43 CVR-3 Series
G	Automatic Adjustment	CVR-42•43 CVR-1 Series
A	Automatic Adjustment	CVR-3 Series
R	Front & Reverse Adjustment by Screw Driver	CVR-43 Series

- ⑦ Packaging
- | | |
|---|-------------------------------|
| B | Bulk |
| W | Taping W Direction (standard) |
| X | Taping X Direction (option) |

⑧ Standard Quantity Per Package

CVR-4	Taping Qty.	CVR-3 CVR-1	Taping Qty.
1	1,000pcs/reel	2	2,000pcs/reel
5	5,000pcs/reel	5	5,000pcs/reel
		0	10,000pcs/reel

(CVR-1 : Reflow Slodering only)

- ⑨ Spec
C : Reflow Solderable
D : Wave Solderable
- ⑩ Tolerance
30 : ±30%
Please contact your local AVX office for custom specification.

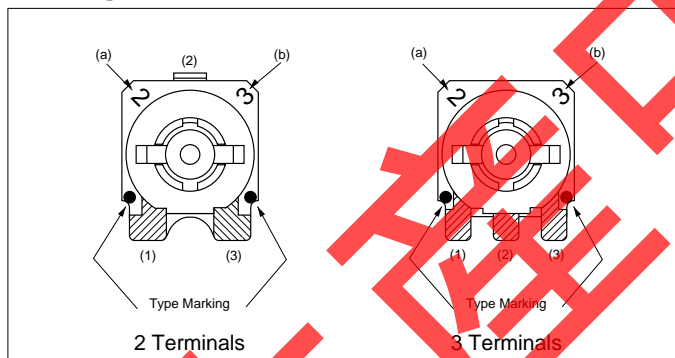
Discontinued Product

Item		Circuit Type	Equivalent Circuit	Dimensions (Unit:mm), Tolerance : ±0.2
(Front) (Reverse) CVR-43G (Auto)	A Type			
	C Type			
 CVR-42G (Auto)	A Type			
	C Type			
 CVR-43R (Reverse)	A Type			
	C Type			
 CVR-43S (Standard)	A Type			
	C Type			
 CVR-42S (Standard)	A Type			
	C Type			
 CVR-32S (Standard)	A Type			
 CVR-32A (Auto)	A Type			
 CVR-12G (Auto)	A Type			

Specifications

P/N	Rated power	Rated voltage	Resistance value	Resistance tolerance	Resistance change linearity	Rotation Life	Torque (within 10 Rotations)	Rotation angle	Operating temp.	T.C.R.
CVR-4 Series	0.2W (70°C)	DC100V	100Ω to 2.2MΩ	±30%	(B) Linear	(20 rotations) ≤±15%	2.0 to 29.4mNm 20 to 300gcm	270±20°	-40°C to +100°C	±250PPM/°C max
CVR-3 Series	0.1W (70°C)	DC50V				(5 rotations) ≤±15%	2.0 to 19.6mNm 20 to 200gcm			
CVR-1 Series	0.05W (70°C)		1kΩ to 47kΩ	0.5 to 9.8mNm 5 to 100gcm 5 rotation max						

Marking



Example (A)2,(B)3 22×10³=22kΩ (a) ▲, (b) ●; 22×10³=22kΩ (CVR-1 series)
 *CVR-1 series: No Type marking

Marking(a)		Marking(b)	
The first two significant figures	Logarithmic multiplier	Code	Value
1, ▽	10	1	10 ¹
A, ▲	15	2, ●	10 ²
2, ●	20,22	3, ●	10 ³
3, ●	30,33	4	10 ⁴
4, ▲	47	5	10 ⁵
5	50		
6, ●	68		

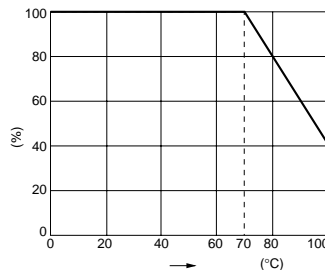
- End resistance
- For resistance under 330Ω : 10Ω max
under 1kΩ : 30Ω max
over 1kΩ : 2% max (not exceeding 10kΩ)
- Contact resistance less than 5% of nominal full resistance
- Rated Power
CVR-4 series : 0.2W
CVR-3 series : 0.1W
CVR-1 series : 0.05W
(When ambient temp. exceed 70°C, please refer to the derating curve shown below.)
- Rated Voltage

Rated voltage is calculated using following formula.

$$E = \sqrt{PR}$$

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

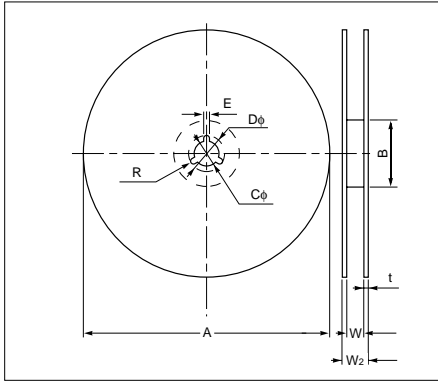
Maximum operating voltage
DC100V; CVR-4 series
DC50V; CVR-3, CVR-1 series



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

Packing

• Reel



<CVR-4>

(Unit : mm)

Code	1,000 per reel	5,000 per reel
A	180 ⁰ ₋₃	420±2.0
B	60 ⁺¹ ₀	80.0±2.0
C	13.0±0.2	13.0±0.5
D	21.0±0.8	21.0±0.5
E	2.0±0.5	2.0±0.5
W	13.0±0.3	13.5±1.5
W ₂	17.0±1.4 (or 15.4±1.0)	
t	2.0±0.5	
R	1.0 (or 0.5)	

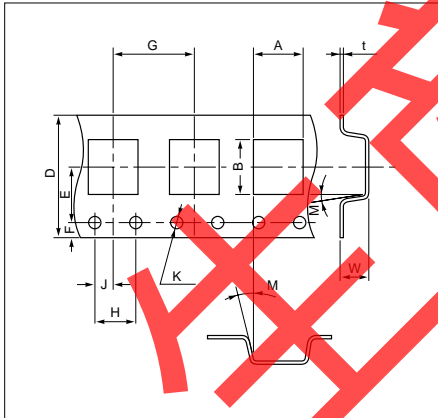
<CVR-3, CVR-1>

(Unit : mm)

Code	2,000 per reel	5,000 per reel	10,000 per reel
A	180 ⁰ ₋₃	250±2.0	330±2.0
B	60 ⁺¹ ₀	80.0±2.0	80.0±2.0
C	13.0±0.2	13.0±0.5	13.0±0.5
D	21.0±0.8	21.0±0.5	21.0±0.5
E	2.0±0.5	2.0±0.5	2.0±0.5
W	9.0±0.3	9.5±1.5	9.5±1.5
W ₂	13.0±1.4 (or 11.4±1.0)		
t	2.0±0.5		2.0±0.5
R	1.0 (or 0.5)		

• Carrier tape

(Unit : mm)

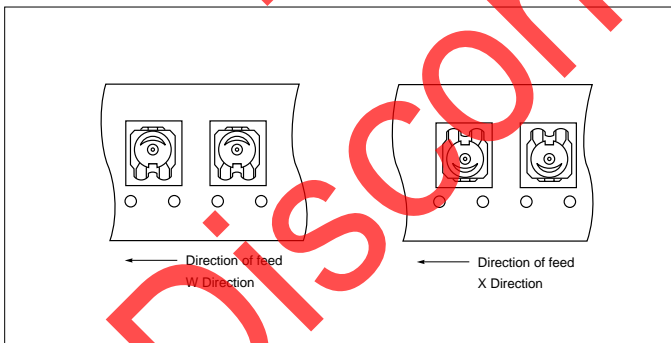


Code	A	B	D	E	F	G	H
Dimension CVR-4	4.2±0.2	4.8±0.2	12.0±0.3	5.5±0.1	1.5±0.2	8.0±0.1	4.0±0.1
CVR-3	3.3±0.2	4.0±0.2	8.0±0.3	3.5±0.1	1.75±0.2	4.0±0.1	4.0±0.1
CVR-1	1.8±0.2	2.4±0.2	8.0±0.3	3.5±0.1	1.75±0.2	4.0±0.1	4.0±0.1
Code	J	K	M	W	t		
Dimension CVR-4	2.0±0.1	1.55±0.1	5°max	1.85±0.1 (Remarks 4)	0.3±0.1		
CVR-3	2.0±0.1	1.55±0.1	3°max	1.85±0.1	0.2±0.1		
CVR-1	2.0±0.1	1.55±0.1	5°max	1.1±0.1	0.25±0.1		

Remarks:

- 1) Embossed style plastic.
- 2) The dimensional tolerance on pitch is ±0.2 cumulative 10 pitches.
- 3) There is a φ1.0 hole in the center of cavity for VCR-3.
- 4) CVR-43R, W=2.7±0.1

• Taping



- ① One reel unit
5000 pcs. max for CVR-4
10000 pcs. max for CVR-3, CVR-1

- ② Direction of taping
W direction : Standard
X direction : Option

Specifications and Methods of Reliability Test

Item	Specification	Test Conditions
Load life	±5%max	Stabilize at 70±3°C for 24±4hrs. Measure initial resistance value. Perform voltage cycle for 1000±12hrs. on 1.5hrs., off 0.5hrs. Stabilize at room temp. for 1 to 2hrs. measure resistance value.
Load Life in Moisture	±5%max	Perform voltage cycle for 500±12hrs. in chamber (40±2°C, 90-95%RH) On: 1.5hrs Off: 0.5hrs. Stabilize at room temp. for 1 to 2hrs. measure resistance value.
Heat Resistance	±5%max	Dwell at 100±2°C for 240±8hrs. Stabilize at room temp. for 1 to 2hrs. measure resistance value.
Temperature Cycle	±2%max ±5%max (CVR-12G)	(Cycle) 1. -40±3°C 30min 2. 25 ⁺¹⁰ °C 2 to 3min 3. 100±2°C 30min 4. 25 ⁺¹⁰ °C 2 to 3min 1 cycle composed of 4 conditions. After 5cycles, stabilized at room temp. for 1 to 2hrs. and measure resistance value.
Anti-Vibration Test	±1%max ±2%max (CVR-12G)	Sweep through a frequency of 10 to 55Hz, amplitude 1.5mm, 2hrs. each in X, Y and Z axis (total 6hrs.) measure resistance value.
Resistance to Solder	±1%max *No evidence of leaching	Immerse in solder bath at 260±5°C for 5±0.5sec. Stabilize at room temp. for 1 to 2hrs. measure resistance value.
	±2%max (CVR-12G) *No evidence of leaching	Reflow soldering at our recommended Temperature profile (Pre-Heating = 150°C 1min, Peak 230 to 250°C 10seconds max) And stabilize at room temp. for 1 to 2hrs. measure resistance value
Resistance to Solvent	±1%max ±3%max (CVR-12G)	Immerse in Isopropanol(IPA) at 20 to 25°C for 60±10sec. Stabilize at room temp. for 1 to 2hrs. measure resistance value.
Solderability	Cover>75% each termination end	Immerse in solder at 235±5°C for 2±0.5sec.