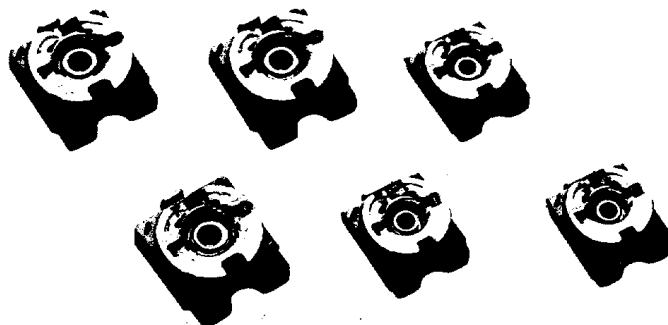


Features

- Wave solderable due to stainless steel wiper.
- Easy identification by code of resistance marked on adjustment side
- The same shape for 2 or 3 terminals allows standardization of circuit pattern design (CVR-4 series)
- High accuracy and high reliability by cermet construction
- Tape & reel packaging
- Standardization on both E6 value series and 1, 2, 3, 5 series
- Automatic adjustment type available



How to Order

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

① Style

Chip Trimmer Potentiometer

② Size

4	4mm
3	3mm

③ Number of Terminals

2	2 terminals
3	3 terminals

④ Circuit Type

A	Voltage Adjustment
C	Current Adjustment

⑤ Nominal Full Resistance Value (3 Digits)

$102 = 10 \times 10^2 = 1000\Omega$

⑥ Adjustment Method

S	Front Side Adjustment by Standard Screwdriver	CVR-4 Series
G	Automatic Adjustment	CVR-4 Series
A	Automatic Adjustment	CVR-3 Series
R	Front & Reverse Adjustment by Screwdriver	CVR-4 Series

⑦ Packaging

B	Bulk
W	Taping W Direction (standard)
X	Taping X Direction (option)

⑧ Standard Quantity Per Package

CVR-4	Quantity Per Package
1	1,000 pcs
5	5,000 pcs

CVR-3	Quantity Per Package
2	2,000 pcs
5	5,000 pcs
0	10,000 pcs

⑨ Specification

C	Standard Type
*	Options

* For option, please contact sales

⑩ Resistance Tolerance

30	±30% (standard)
*	Options

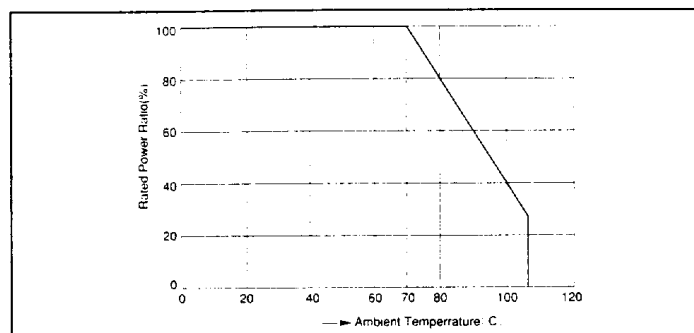
* For option, please contact sales

Rating

Item www.DataSheet4U.com	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	Linear	Linear
Rotation Life	(20 rotations) ≤ ±15%	(20 rotations) ≤ ±15%
Torque (within 10 Rotations)	2.0 ~ 29.4mNm 20 ~ 300gfcm	2.0 ~ 19.6mNm 20 ~ 200gfcm
Rotation angle	270 ±20°	270 ±20°
Operating temperature	-40°C ~ +100°C	-40°C ~ +100°C
T.C.R.	±250ppm/°C max	±250ppm/°C max

● Rated Power

When ambient temperature exceed 70°C, please refer to the derating curve shown below.



● Rated Voltage

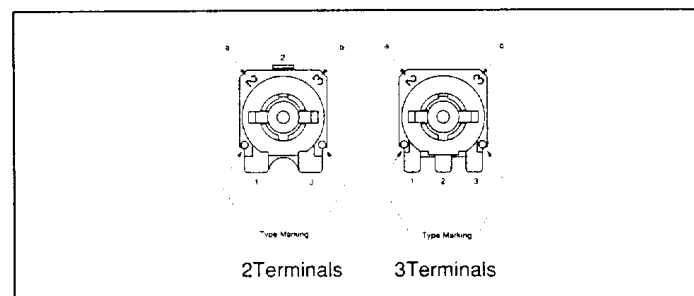
Rated voltage is calculated using the following formula.

$$E = \sqrt{P \cdot R} \text{ when } \begin{array}{l} E: \text{Rated voltage (V)} \\ P: \text{Rated power (W)} \\ R: \text{Nominal resistance value (}\Omega\text{)} \end{array}$$

Standard Values

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	2	1
CVR-□□□-301 □□□□	300Ω	3	1
CVR-□□□-331 □□□□	330Ω	3	1
CVR-□□□-471 □□□□	470Ω	4	1
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	2	2
CVR-□□□-302 □□□□	3.0KΩ	3	2
CVR-□□□-332 □□□□	3.3KΩ	3	2
CVR-□□□-472 □□□□	4.7KΩ	4	2
CVR-□□□-502 □□□□	5.0KΩ	5	2
CVR-□□□-682 □□□□	6.8KΩ	6	2
CVR-□□□-103 □□□□	10KΩ	1	3
CVR-□□□-153 □□□□	15KΩ	A	3
CVR-□□□-203 □□□□	20KΩ	2	3
CVR-□□□-223 □□□□	22KΩ	2	3
CVR-□□□-303 □□□□	30KΩ	3	3
CVR-□□□-333 □□□□	33KΩ	3	3
CVR-□□□-473 □□□□	47KΩ	4	3
CVR-□□□-503 □□□□	50KΩ	5	3
CVR-□□□-683 □□□□	68KΩ	6	3
CVR-□□□-104 □□□□	100KΩ	1	4
CVR-□□□-154 □□□□	150KΩ	A	4
CVR-□□□-204 □□□□	200KΩ	2	4
CVR-□□□-224 □□□□	220KΩ	2	4
CVR-□□□-304 □□□□	300KΩ	3	4
CVR-□□□-334 □□□□	330KΩ	3	4
CVR-□□□-474 □□□□	470KΩ	4	4
CVR-□□□-504 □□□□	500KΩ	5	4
CVR-□□□-684 □□□□	680KΩ	6	4
CVR-□□□-105 □□□□	1.0MΩ	1	5
CVR-□□□-155 □□□□	1.5MΩ	A	5
CVR-□□□-205 □□□□	2.0MΩ	2	5
CVR-□□□-225 □□□□	2.2MΩ	2	5

Coding

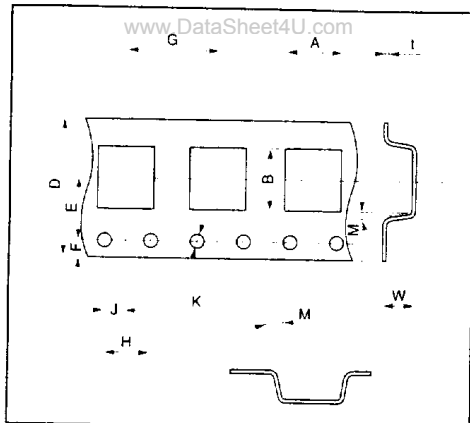


(a)		(b)	
The first two significant figures		Logarithmic multiplier	
Code	Value	Code	Value
1	10	1	10 ¹
A	15	2	10 ²
2	20, 22	3	10 ³
3	30, 33	4	10 ⁴
4	47	5	10 ⁵
5	50		
6	68		

Example: (a) = 2
(b) = 3
22 × 10² = 22kΩ

Packaging

1) Carrier tape

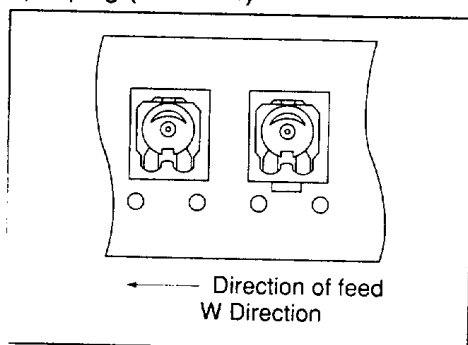


Code		A	B	D	E	F	G	H	J
Dimension	CVR-4	4.2 ±0.2	4.8 ±0.2	12.0 ±0.3	5.5 ±0.1	1.5 ±0.2	8.0 ±0.1	4.0 ±0.1	2.0 ±0.1
	CVR-3	3.3 ±0.2	4.0 ±0.2	8.0 ±0.3	3.5 ±0.1	1.75 ±0.2	4.0 ±0.1	4.0 ±0.1	2.0 ±0.1
Code		K	M	W	t				
Dimension	CVR-4	1.5 ^{+0.1} ₋₀	15° max	1.85 ±0.1	0.3 ±0.1				
	CVR-3	1.55 ±0.1	3° max	1.85 ±0.1	0.2 ±0.1				

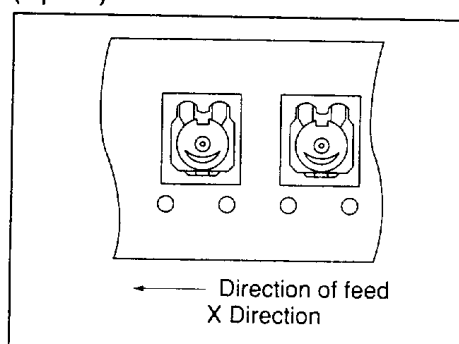
Remarks:

- 1) Embossed style plastic (CVR-4 series)
- 2) The dimensional tolerance on pitch is ± 0.2 cumulative across 10 pitches
- 3) There is a $\phi 1.0$ hole in the centre of cavity for CVR-3
- 4) CVR-43R: $W = 2.7 \pm 0.1$

2) Taping (Standard)

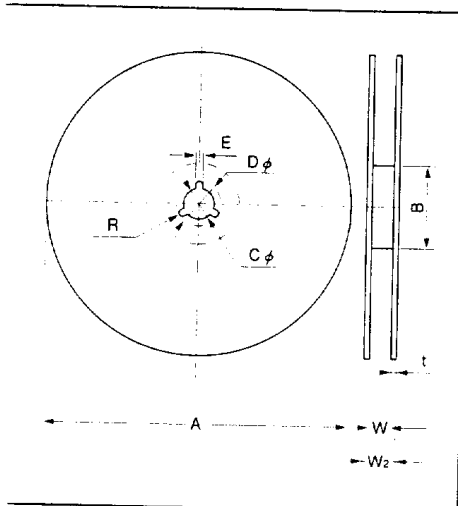


(Option)



- ① One reel unit
5000 pcs. max. for CVR-4
10000 pcs. max. for CVR-3
- ② Direction of taping
W direction standard
X direction optional

3) Reel



CVR-4

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 ±1.0
E	2.0 ±0.5	2.0 ±0.5
W	13.0 ±0.3	14.0 ±1.5
W ²	17.0 ±1.4 or 15.4 ±1.0	
t		2.0 ±0.5
R	1.0 or 0.5	5.0






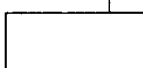

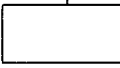






CVR-3

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 ±1.0	21.0 ±0.5
E	2.0 ±0.5	2.0 ±0.5	2.0 ±0.5
W	9.0 ±0.3	9.5 ±1.0	9.5 ±1.0
W ²	13.0 ±1.4 or 14.0 ±1.0		
t		3.0 max	3.0 max
R	1.0 or 0.5	1.5 ±0.5	1.5 ±0.5

Specifications and Methods of Reliability Test

Item	Specifications	Measuring condition
Load Life	±5% max	Stabilize at 70 ±2°C for 8 hrs. Measure initial resistance value Perform voltage cycle for 1000 ±12 hrs on 1.5 hrs, off 0.5 hrs Stabilize at room temperature for 5 hrs. Measure resistance value.
Load Life in Moisture	±5% max	Perform voltage cycle for 500 ±12 hrs in chamber (40 ±2°C, 90 ~ 95% RH) On: 1.5 hrs, Off: 0.5 hrs Stabilize at room temperature for 5 hrs. Measure resistance value
Heat Resistance	±5% max	Store at 100 ±3°C for 250 ±6 hrs Stabilize at room temperature for 5 hrs. Measure resistance value
Temperature Cycle	±2% max	5 cycles of: -40 ^{+3 -5} °C for 30 min 25 ^{+10 -5} °C for 15 min 100 ^{+10 -0} °C for 30 min 25 ^{+10 -5} °C for 15 min Stabilize at room temperature for 5 hour. Measure resistance value
Anti-Vibration Test	±1% max	Sweep through a frequency of 10 to 55 Hz, amplitude 1.5mm, 2 hrs each in X, Y and Z axis (total 6 hours). Measure resistance value.
Resistance to Solder	±1% max *No evidence of leaching	Immerse in solder bath at 250 ±5°C for 5 ±1 sec. Stabilize at room temperature for more than 5 hrs. Measure resistance value.
Resistance to Solvent		Immerse in trichloroethylene or equivalent for 15 min. Stabilize at room temperature for more than 5 hrs. Measure resistance value
Solderability	Cover > 75% of each termination end	Immerse in solder at 230 ±5°C for 3 ±0.5 sec

Frequency Band Chart

Product Name		Type	Oscillating Frequency										Applications
			1kHz	10kHz	100kHz	1MHz	10MHz	100MHz	1GHz	10GHz			
Quartz Crystal		Leaded		38K		150K						Micro-Processor	
Ceramic Resonator	KHz Band	Leaded		190K ~ 680K 795K ~ 815K			960K ~ 1050K					Micro-Processor	
		SMD		380K ~ 430K 440K ~ 525K 600K ~ 655K			795K ~ 815K 960K ~ 1050				Micro-Processor		
	MHz Band	Leaded				2.0M		40.0M				Micro-Processor	
		SMD					2.0M		40.0M				Micro-Processor
SAW Resonator		Leaded					46.0M		433.0M			RF Modulator Keyless Entry	
Clock Oscillator		Leaded			500k			72.0M				Micro-Processor	
		SMD					8.0M		68.0M			Micro-Processor	
	TCXO	SMD					12.0M		20.0M			Telecom- munication	
Voltage Control Oscillator (VCO)	VK Series	SMD					100.0M		700.0M			Telecom- munication	
	EK Series	SMD						700.0M		1.3G		Telecom- munication	
	RK Series	SMD							1.3G		2.0G	Telecom- munication	