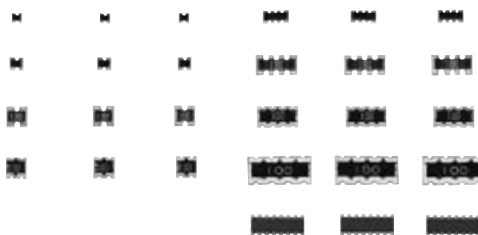


Chip Resistor Array

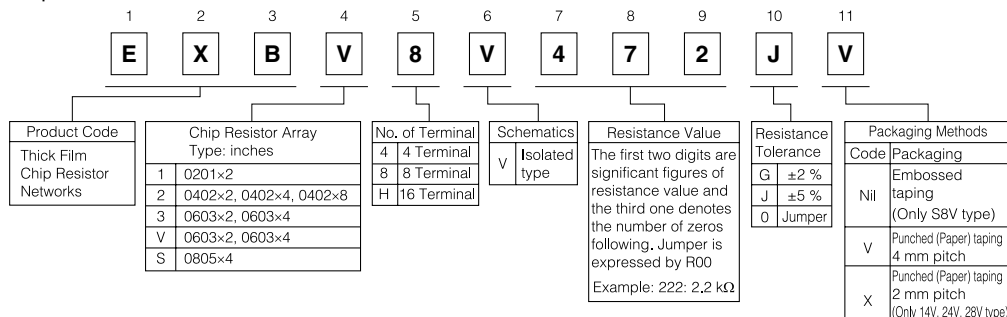
Type: **EXB1:0201x2**
EXB2:0402x2, 0402x4, 0402x8
EXB3:0603x2, 0603x4
EXBV:0603x2, 0603x4
EXBS:0805x4



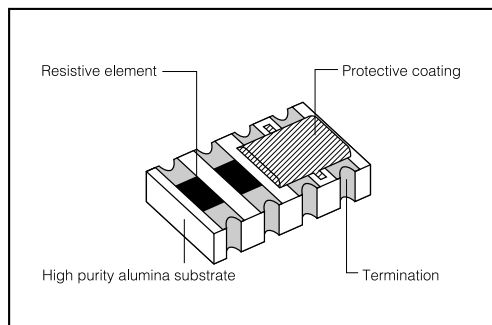
■ Features

- High density
 - 2 resistors in 0.8 mm × 0.6 mm size (14V, Convex Terminal)
 - 2 resistors in 1.0 mm × 1.0 mm size (24V, Convex Terminal)
 - 2 resistors in 1.6 mm × 1.6 mm size (34V, Convex Terminal)
 - 2 resistors in 1.6 mm × 1.6 mm size (V4V, Concave Terminal)
 - 4 resistors in 2.0 mm × 1.0 mm size (28V, Convex Terminal)
 - 4 resistors in 3.2 mm × 1.6 mm size (38V, Convex Terminal)
 - 4 resistors in 3.2 mm × 1.6 mm size (V8V, Concave Terminal)
 - 4 resistors in 5.08 mm × 2.2 mm size (S8V, Concave Terminal)
 - 8 resistors in 3.8 mm × 1.6 mm size (2HV, Convex Terminal)
- Improvement of placement efficiency
 Placement efficiency of Chip Resistor Array is two or four or eight times that of the flat type chip resistor
- Approved under the ISO 9001 system

■ Explanation of Part Numbers

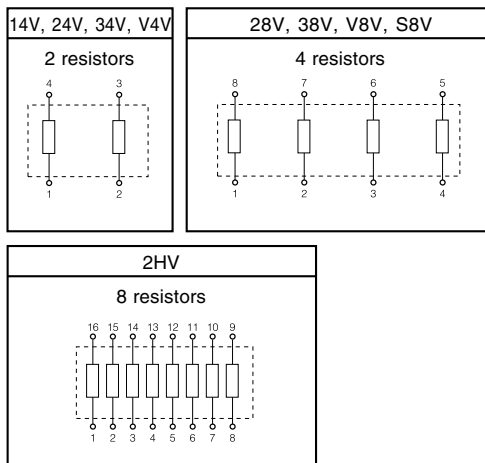


■ Construction (Example : EXBV8V)

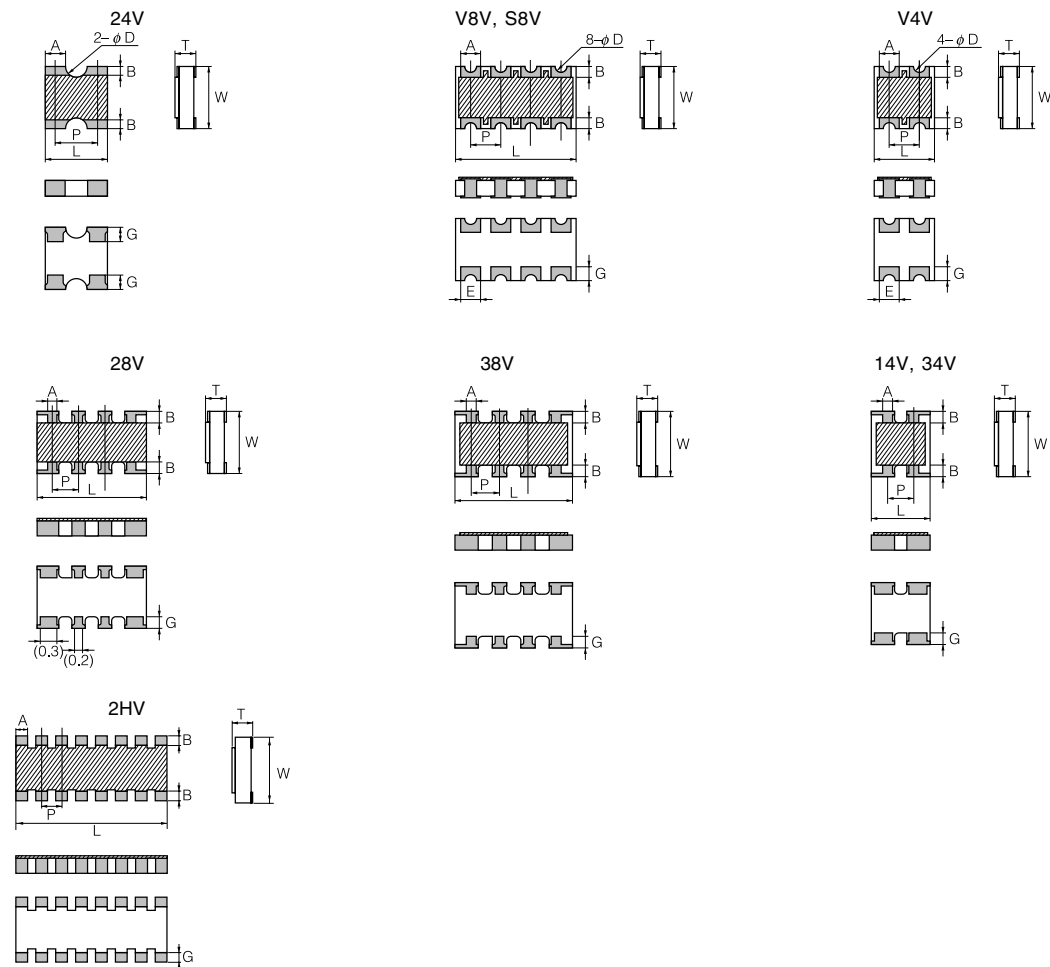


■ Schematics

- Isolated type



■ Dimensions in mm (not to scale)



	Type (inches)	Dimensions (mm)								
		L	W	T	A	B	φD	P	E	G
NEW	EXB14V (0201×2)	0.80 ^{+0.10} _{-0.10}	0.60 ^{+0.10} _{-0.10}	0.35 ^{+0.10} _{-0.10}	0.35 ^{+0.10} _{-0.10}	(0.15 ^{+0.10} _{-0.10})	—	0.50 ^{+0.10} _{-0.10}	—	0.15 ^{+0.10} _{-0.10}
	EXB24V (0402×2)	1.00 ^{+0.05} _{-0.05}	1.00 ^{+0.05} _{-0.05}	0.35 ^{+0.05} _{-0.05}	0.33 ^{+0.05} _{-0.05}	0.15 ^{+0.10} _{-0.10}	0.34 ^{+0.05} _{-0.05}	0.65 ^{+0.10} _{-0.10}	—	0.25 ^{+0.05} _{-0.05}
	EXB28V (0402×4)	2.00 ^{+0.10} _{-0.10}	1.00 ^{+0.10} _{-0.10}	0.35 ^{+0.10} _{-0.10}	0.20 ^{+0.10} _{-0.10}	0.20 ^{+0.10} _{-0.10}	—	0.50 ^{+0.10} _{-0.10}	—	0.25 ^{+0.10} _{-0.10}
	EXBV4V (0603×2)	1.60 ^{+0.20} _{-0.10}	1.60 ^{+0.20} _{-0.10}	0.60 ^{+0.10} _{-0.10}	0.60 ^{+0.10} _{-0.10}	0.30 ^{+0.15} _{-0.15}	(0.3)	0.80 ^{+0.10} _{-0.10}	0.45 ^{+0.10} _{-0.10}	0.40 ^{+0.15} _{-0.15}
	EXB34V (0603×2)	1.60 ^{+0.20} _{-0.10}	1.60 ^{+0.15} _{-0.15}	0.50 ^{+0.10} _{-0.10}	0.45 ^{+0.15} _{-0.15}	(0.30 ^{+0.20} _{-0.20})	—	0.80 ^{+0.15} _{-0.15}	—	0.30 ^{+0.20} _{-0.20}
	EXBV8V (0603×4)	3.20 ^{+0.20} _{-0.10}	1.60 ^{+0.20} _{-0.10}	0.60 ^{+0.10} _{-0.10}	0.60 ^{+0.10} _{-0.10}	0.30 ^{+0.15} _{-0.15}	(0.3)	0.80 ^{+0.10} _{-0.10}	0.45 ^{+0.10} _{-0.10}	0.45 ^{+0.15} _{-0.15}
	EXB38V (0603×4)	3.20 ^{+0.20} _{-0.10}	1.60 ^{+0.15} _{-0.15}	0.50 ^{+0.10} _{-0.10}	0.45 ^{+0.15} _{-0.15}	(0.30 ^{+0.20} _{-0.20})	—	0.80 ^{+0.15} _{-0.15}	—	0.35 ^{+0.20} _{-0.20}
	EXBS8V (0805×4)	5.08 ^{+0.20} _{-0.10}	2.20 ^{+0.20} _{-0.10}	0.70 ^{+0.20} _{-0.20}	0.80 ^{+0.15} _{-0.15}	0.50 ^{+0.15} _{-0.15}	(0.5)	1.27 ^{+0.20} _{-0.20}	0.70 ^{+0.20} _{-0.20}	0.55 ^{+0.15} _{-0.15}
	NEW	EXB2HV (0402×8)	3.80 ^{+0.10} _{-0.10}	1.60 ^{+0.10} _{-0.10}	0.45 ^{+0.10} _{-0.10}	0.30 ^{+0.10} _{-0.10}	(0.30 ^{+0.10} _{-0.10})	—	0.50 ^{+0.10} _{-0.10}	—

() Reference

■ Ratings

Item		Specifications
Resistance Range		10 Ω to 1MΩ E24 series
Resistance Tolerance	14V, 2HV, 24V, 28V, 38V, 34V	J: ±5%
	V4V, V8V, S8V	G: ±2 %, J: ±5 %
Number of Terminals	14V, 24V, V4V, 34V	4 terminal
	28V, 38V, V8V, S8V	8 terminal
	2HV	16 terminal
Number of Resistors	14V, 24V, V4V, 34V	2 resistors
	28V, 38V, V8V, S8V	4 resistors
	2HV	8 resistors
Power Rating at 70°C	14V, 28V	0.031 W/element
	24V, V4V, 34V, V8V, 38V	0.063 W/element
	S8V	0.1 W/element
	2HV	0.063 W/element (0.25 W/package)

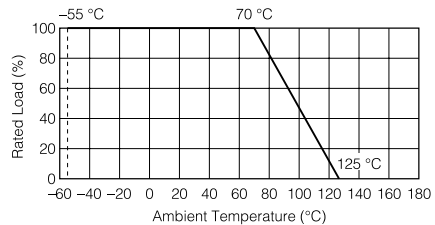
Item		Specifications
Limiting Element Voltage ⁽¹⁾ (Max. Rated Continuous Working Voltage)	14V	12.5 V
	2HV	25 V
	24V, 28V, 38V, 34V, V4V, V8V	50 V
	S8V	100 V
Max. Over-load Voltage ⁽²⁾	14V	25 V
	2HV	50 V
	24V, 28V, 38V, 34V, V4V, V8V	100 V
	S8V	200 V
T.C.R.		±200 x10 ⁻⁶ /°C(ppm/°C)
Category Temperature Range (Operating Temperature Range)		-55°C to 125°C
Jumper Array	(A) R000	14V, 24V, 28V, 38V, 34V, V4V, V8V
	Rated Current	S8V
	(A) R000	14V, 24V, 28V, 38V, 34V, V4V, V8V
	Max. Overload Current	S8V

(1) Rated Continuous Working Voltage (RCWV) should be determined from $RCWV = \sqrt{\text{Power Rating} \times \text{Resistance Value}}$, or Limiting Element Voltage (max. RCWV) listed above, whichever is less.

(2) Overload (Short-time Overload) Test Voltage (SOTV) should be determined from $SOTV = 2.5 \times \text{Power Rating}$ or max. Overload (Voltage) listed above whichever is less.

Power Derating Curve

For resistors operated in ambient temperature above 70 °C, power rating should be derated in accordance with the figure on the right.

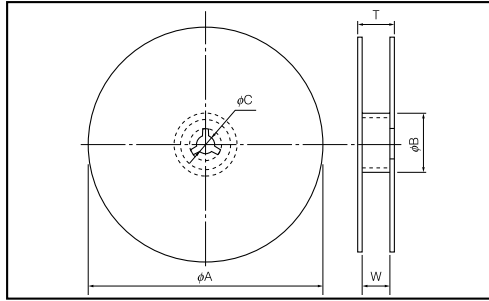


■ Packaging Methods

● Standard Quantity

Type (inches)	Thickness (mm)	Weight/1000 pcs. (g)	Punched (Paper) Taping	Embossed Taping
EXB14V (0201×2)	0.35	14V: 0.5	10000 pcs./reel	—
EXB24V, 28V (0402×2, 0402×4)	0.35	24V: 1.2 28V: 2	10000 pcs./reel	—
EXBV4V, V8V (0603×2, 0603×4)	0.6	V4V: 5 V8V: 10	5000 pcs./reel	—
EXB34V, 38V (0603×2, 0603×4)	0.5	34V: 3.5 38V: 7	5000 pcs./reel	—
EXBS8V (0805×4)	0.7	S8V: 30	—	2500 pcs./reel
EXB2HV (0402×8)	0.45	2HV: 9	5000 pcs./reel	—

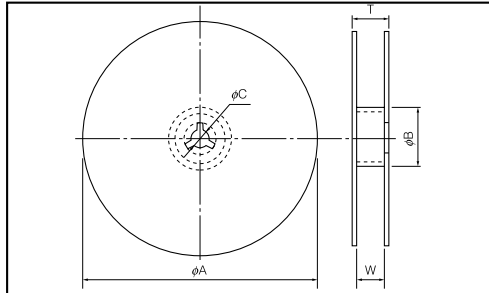
● Punched (Paper) Taping Reel



Dimensions (mm)	Type	ϕA	ϕB	ϕC
	14V, 2HV 24V, 28V V4V, 34V V8V, 38V	180.0 $^{+0.0}_{-3.0}$	60 min.	13.0 ± 1.0

Dimensions (mm)	Type	W	T
	14V, 2HV 24V, 28V V4V, 34V V8V, 38V	9.0 ± 1.0	11.4 ± 2.0

● Embossed Taping Reel



Dimensions (mm)	Type	ϕA	ϕB	ϕC
	S8V	180.0 $^{+0.0}_{-3.0}$	60 min.	13.0 ± 1.0

Dimensions (mm)	Type	W	T
	S8V	13.0 ± 1.0	15.4 ± 2.0

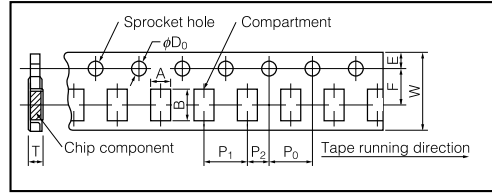
■ Land pattern design

Recommended land pattern design for Network chip is shown in figure below.

Type	Dimensions					(Not to scale)
	a	b	c	p	f	Unit (mm)
14V	0.3	0.3	0.3	0.50	0.9	
24V	0.5	0.35 to 0.40	0.35 to 0.40	0.65	1.4 to 1.5	
28V	0.4	0.525	0.25	0.50	1.4	
V4V, V8V	0.7 to 0.9	0.4 to 0.45	0.4 to 0.45	0.80	2 to 2.4	
34V, 38V	0.7 to 0.9	0.4 to 0.5	0.4 to 0.5	0.80	2.2 to 2.6	
S8V	1 to 1.2	0.5 to 0.75	0.5 to 0.75	1.27	3.2 to 3.8	
2HV	1	0.425	0.25	0.50	2	

Design and specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use.
Whenever a doubt about safety arises from this product, please contact us immediately for technical consultation.

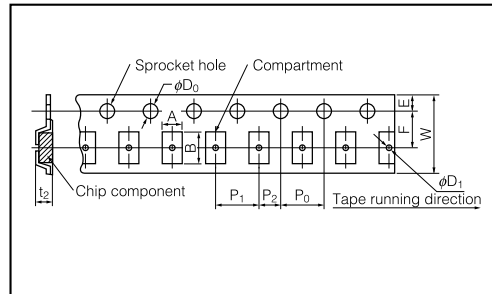
● Punched (Paper) Taping



Dimensions (mm)	Type	A	B	W	F	E
	14V	0.70 ± 0.05	0.90 ± 0.05			
	24V	1.20 ± 0.05	1.20 ± 0.05			
	28V	1.20 ± 0.05	2.20 ± 0.10			
	V4V	1.95 ± 0.15	1.95 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10
	34V	2.00 ± 0.15	3.60 ± 0.20			
	V8V	2.00 ± 0.15	3.60 ± 0.20			
	38V	1.90 ± 0.15	4.10 ± 0.15			
	2HV	1.90 ± 0.15	4.10 ± 0.15			

Dimensions (mm)	Type	P1	P2	P0	ϕD_0	T
	14V					
	24V	2.00 ± 0.10				0.45 ± 0.05
	28V					
	V4V		2.00 ± 0.05	4.00 ± 0.10	1.50 $^{+0.10}_{-0.10}$	0.84 ± 0.05
	34V					0.64 ± 0.05
	V8V	4.00 ± 0.10				0.84 ± 0.05
	38V					
	2HV					0.64 ± 0.05

● Embossed Taping



Dimensions (mm)	Type	A	B	W	F	E	P0
	S8V	2.80 ± 0.20	5.70 ± 0.20	12.00 ± 0.30	5.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10

Dimensions (mm)	Type	P1	P2	ϕD_0	t2	ϕD_1
	S8V	4.00 ± 0.10	2.00 ± 0.05	1.50 $^{+0.10}_{-0.10}$	1.6 max.	1.50 $^{+0.10}_{-0.10}$

⚠ Safety Precautions

1. Component Placement

- ① Take measure against mechanical stress during and after mounting so as not to damage the termination and protective coating.
- ② Misplacement of components on the land pattern may cause solder bridge problem.

2. Soldering

Precautions and recommendations are described below.

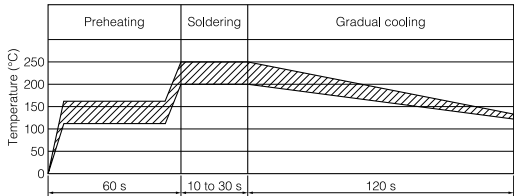
(a)Soldering iron

Follow these guidelines:

- ① Soldering iron tip shall not touch the protective coating of the part.
- ② Solder as quickly as possible (within 3 seconds) when the temperature of the soldering iron tip is over 280 °C.

(b)Reflow soldering

Recommended reflow soldering is shown in the figure on the right.



3. Cleaning

Recommended cleaning method is shown below.

Solvents	Cleaning condition	
	Dipping	Ultrasonic wave washing
Isopropyl Alcohol	5 minutes maximum	1 minute maximum [Power: 20 W/L Frequency: 10 kHz to 100 kHz]

- 4. If transient load (heavy load in a short time) like pulse is expected to be applied, carry out evaluation and confirmation test with the resistors actually mounted on your own board.
When the load of more than rated power is applied under the load condition at steady state, it may impair performance and/or reliability of resistor. Never exceed the rated power.
- 5. Chlorine type or other high-activity flux is not recommended as the residue may affect performance or reliability of resistors.
- 6. When soldering with soldering iron, never touch the body of the chip resistor with a tip of the soldering iron.
When using a soldering iron with a tip at high temperature, solder for a time as short as possible (three seconds or less up to 350 °C).
- 7. Avoid physical shock to the resistor and nipping of the resistor with hard tool (a pair of pliers or tweezers) as it may damage protective film or the body of resistor and may affect resistor's performance.
- 8. Do not use the product in dewy atmospheres.