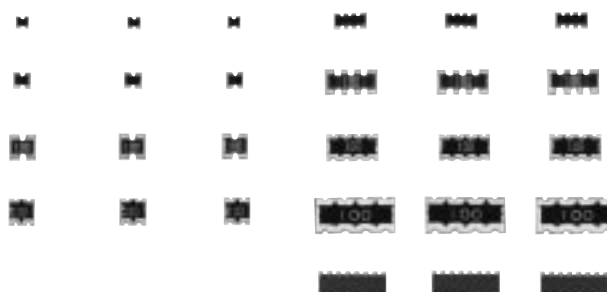
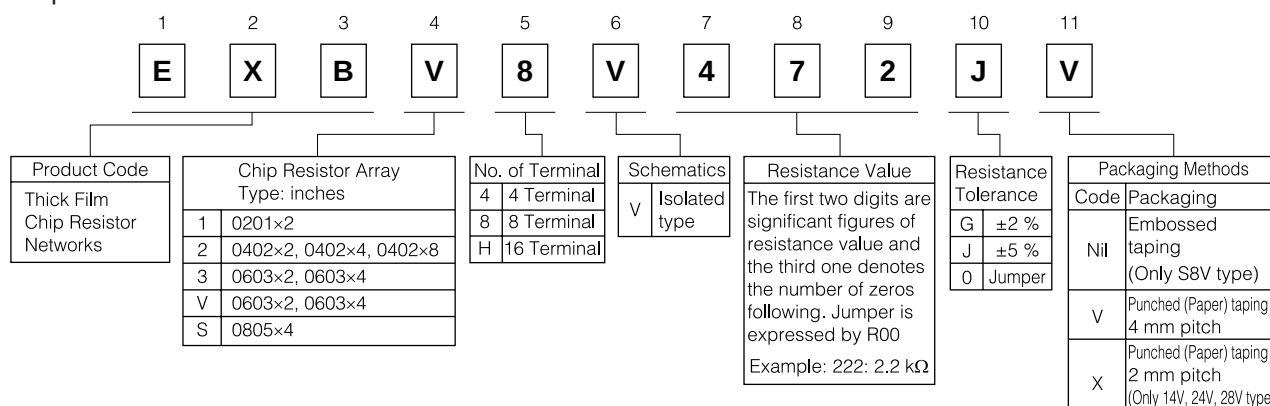


Type: **EXB1:0201x2**
EXB2:0402x2, 0402x4, 0402x8
EXB3:0603x2, 0603x4
EXBV:0603x2, 0603x4
EXBS:0805x4



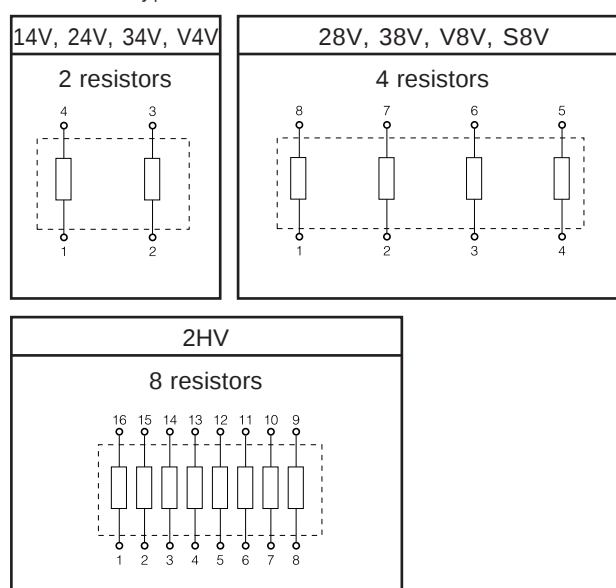
- High density

- ## ■ Explanation of Part Numbers

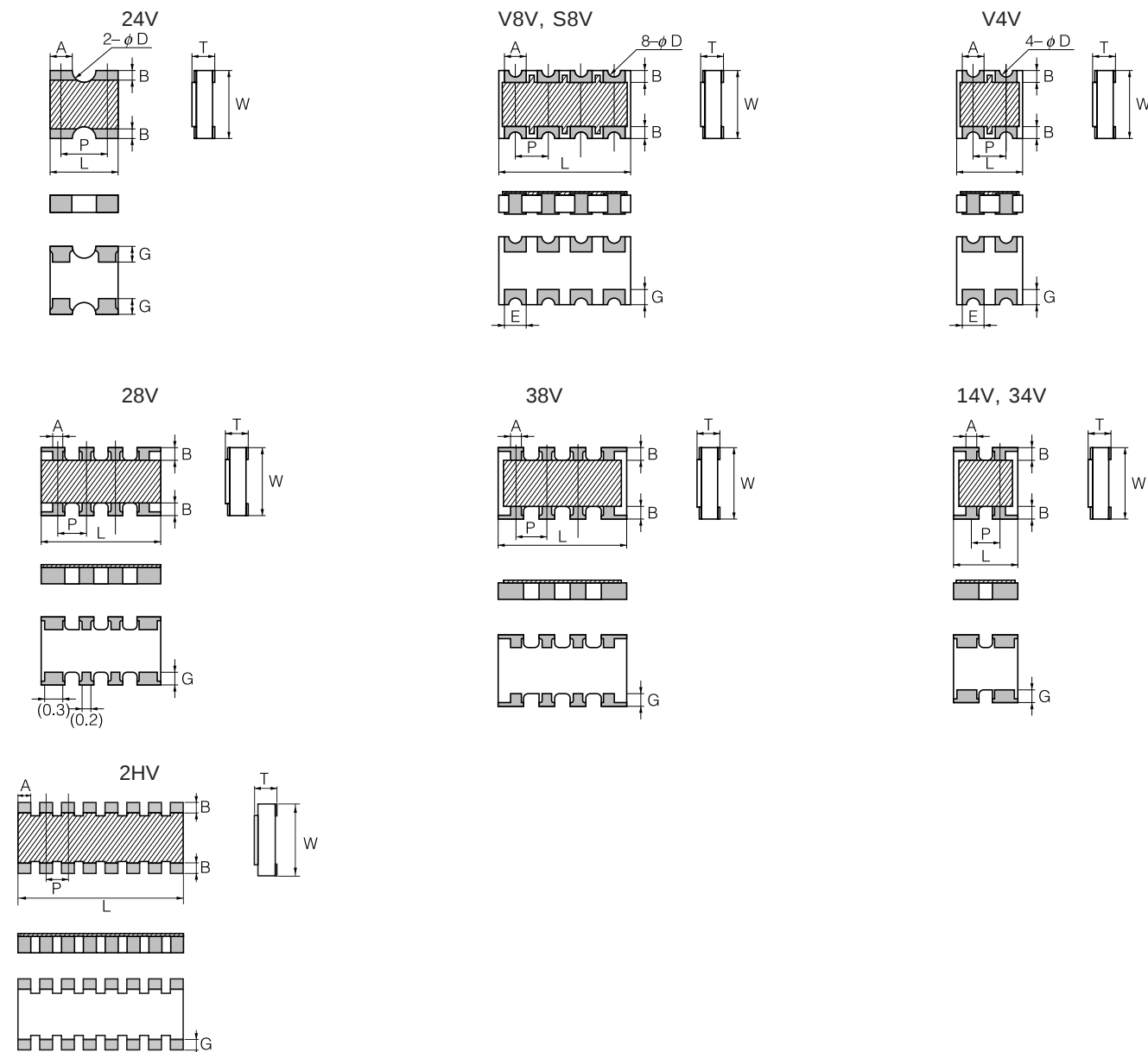


A 3D perspective diagram of a thick film resistor assembly. The assembly consists of a rectangular block labeled "High purity alumina substrate". On top of this substrate, there is a black rectangular area labeled "Resistive element". To the right of the resistive element, there is a hatched rectangular area labeled "Protective coating". The entire assembly is mounted on a base with several rectangular notches. A label "Termination" points to one of these notches on the right side of the assembly.

- 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	0.60±0.10	0.35±0.10	0.35±0.10	(0.15±0.10)	—	0.50±0.10	—	0.15±0.10
EXB24V (0402×2)	1.00±0.05	1.00±0.05	0.35±0.05	0.33±0.05	0.15±0.10	0.34±0.05	0.65±0.10	—	0.25±0.05
EXB28V (0402×4)	2.00±0.10	1.00±0.10	0.35±0.10	0.20±0.10	0.20±0.10	—	0.50±0.10	—	0.25±0.10
EXBV4V (0603×2)	1.60 ^{+0.20} _{-0.10}	1.60 ^{+0.20} _{-0.10}	0.60±0.10	0.60±0.10	0.30±0.15	(0.3)	0.80±0.10	0.45±0.10	0.40±0.15
EXB34V (0603×2)	1.60±0.20	1.60±0.15	0.50±0.10	0.45±0.15	(0.30±0.20)	—	0.80±0.15	—	0.30±0.20
EXBV8V (0603×4)	3.20 ^{+0.20} _{-0.10}	1.60 ^{+0.20} _{-0.10}	0.60±0.10	0.60±0.10	0.30±0.15	(0.3)	0.80±0.10	0.45±0.10	0.45±0.15
EXB38V (0603×4)	3.20±0.20	1.60±0.15	0.50±0.10	0.45±0.15	(0.30±0.20)	—	0.80±0.15	—	0.35±0.20
EXBS8V (0805×4)	5.08 ^{+0.20} _{-0.10}	2.20 ^{+0.20} _{-0.10}	0.70±0.20	0.80±0.15	0.50±0.15	(0.5)	1.27±0.20	0.70±0.20	0.55±0.15
NEW EXB2HV (0402×8)	3.80±0.10	1.60±0.10	0.45±0.10	0.30±0.10	(0.30±0.10)	—	0.50±0.10	—	0.30±0.10

() Reference

■ Ratings

Item	Specifications
Resistance Range	10 Ω to 1 MΩ: E24 series
Resistance Tolerance	14V, 2HV, 24V, 28V, 38V, 34V J: ±5 %
	V4V, V8V, S8V G: ±2 %, J: ±5 %
Number of Terminal	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)

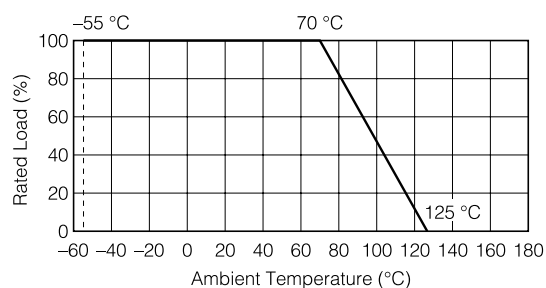
Item	Specifications
Limiting Element Voltage ⁽¹⁾ (Max. Rated Continuous Working Voltage)	14V 12.5 V
	2HV 25 V
	24V, 28V, 38V, 34V, V4V, V8V 50 V
	S8V 100 V
Max. Over-load Voltage ⁽²⁾	14V 25 V
	2HV 50 V
	24V, 28V, 38V, 34V, V4V, V8V 100 V
	S8V 200 V
T.C.R.	±200 ×10 ⁻⁶ /°C(ppm/°C)
Category Temperature Range (Operating Temperature Range)	-55 °C to 125 °C
Jumper Array	(A) R000 14V, 2HV, 24V, 28V, 38V, 34V, V4V, V8V 1 A
	Rated Current S8V 2 A
	(A) R000 14V, 2HV, 24V, 28V, 38V, 34V, V4V, V8V 2 A
	Max. Overload Current S8V 4 A

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

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

Power Derating Curve

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

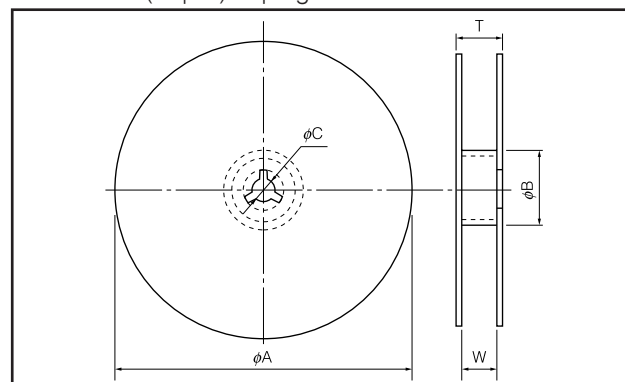


■ Packaging Methods

● 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	—

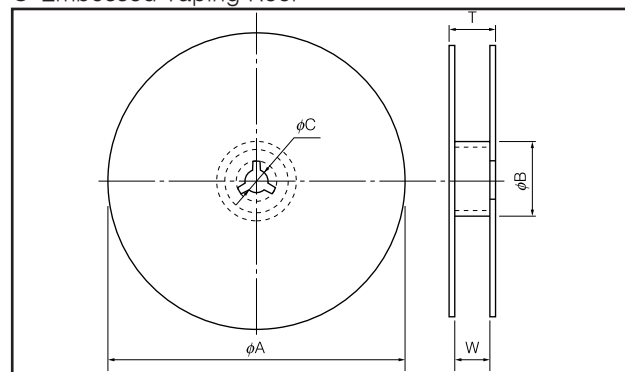
● Punched (Paper) Taping Reel



Dimensions (mm)	Type	ϕA	ϕB	ϕC
14V, 2HV 24V, 28V V4V, 34V V8V, 38V		180.0 ⁰ _{-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

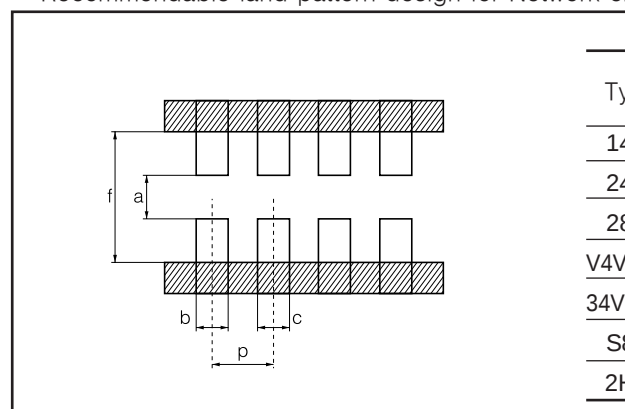


Dimensions (mm)	Type	ϕA	ϕB	ϕC
S8V		180.0 ⁰ _{-3.0}	60 min.	13.0±1.0

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

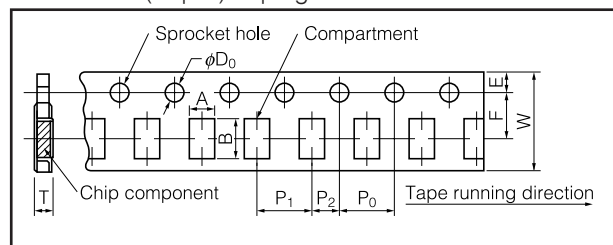
■ Land pattern design

Recommendable land pattern design for Network chip is as shown below figure.



Type	(Not to scale)				
	Dimensions				Unit (mm)
	a	b	c	p	f
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

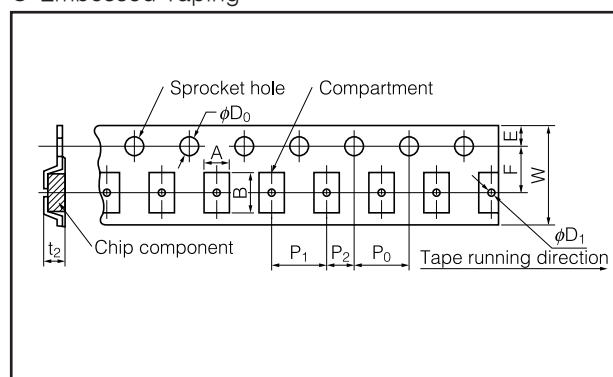
● Punched (Paper) Taping



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			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						
V8V		2.00±0.15	3.60±0.20			
38V						
2HV		1.90±0.15	4.10±0.15			

Dimensions (mm)	Type	P1	P2	P0	ϕD0	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	0.84±0.05
34V						0.64±0.05
V8V						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	ϕD0	t2	ϕD1
S8V		4.00±0.10	2.00±0.05	1.50 ^{+0.10} ₀	1.6 max.	1.50 ^{+0.10} ₀

⚠ Cautions for Safety

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

Precaution and recommendations are described below.

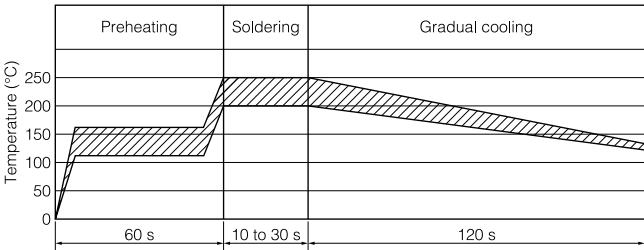
(a)Soldering iron

Keep the followings:

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

(b)Reflow soldering

Recommendable reflow soldering is shown right.



3. Cleaning

Recommendable 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.