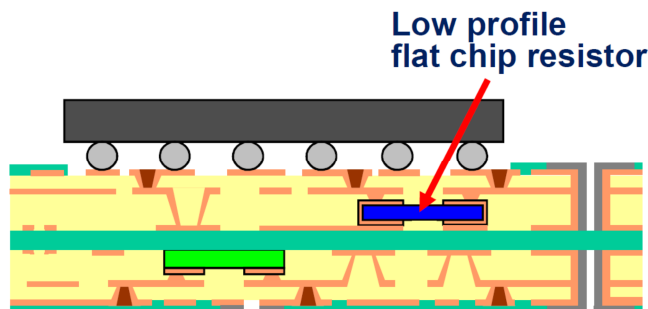


Embedded resistors in a PCB allow the miniaturization of the total packages with improved electrical performance and highest reliability. The key factors are high density mounting, good high frequency performance, excellent heat dissipation and high reliability by protection.

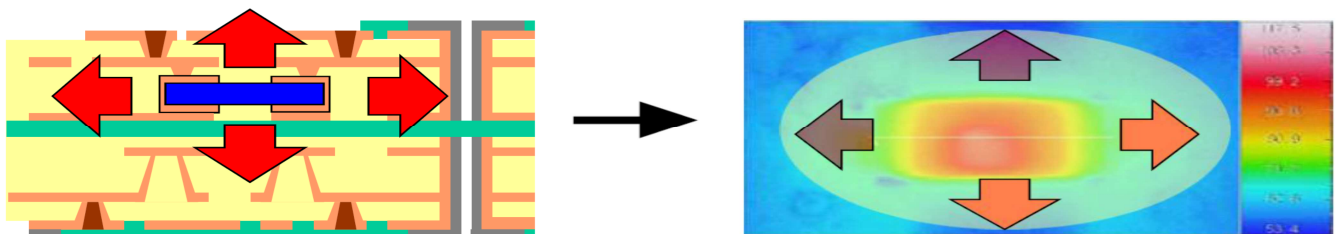
■ High Density Mounting

Embedded resistors are placed between the PCB layers



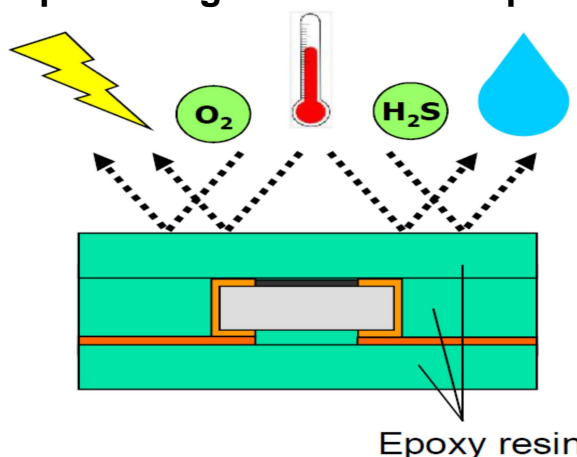
■ Heat Dissipation

PCB has better thermal conductivity than air
Hot spot temperature is reduced



■ Reliability

Epoxy resin is protecting embedded components



For more information, please contact:

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Embedded Resistors

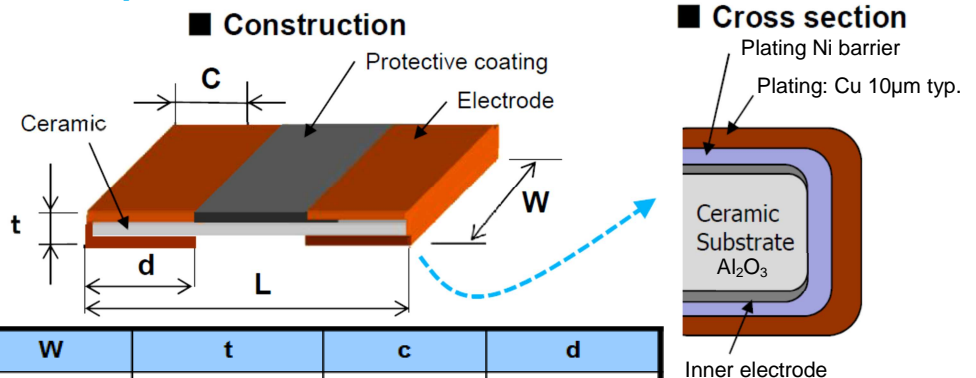
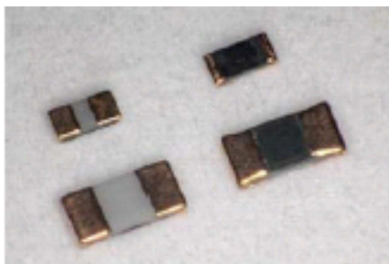


KOA's resistors of XR73 series are especially designed for the usage in embedded technologies.

These extremely low profile parts of 0.13/0.14 mm height with Cu-terminations allow an easy placement between the PCB layers and can be connected with the top and bottom terminations to the PCB layers. This can realize high miniaturization of the circuit.

The parts are connected by conductive adhesion.

XR73- Series KOA Flat Chip Resistors for Embedded Substrates



Dimensions (mm)

Type	Inch	L	W	t	c	d
1H	0201	0.6 ± 0.03	0.3 ± 0.03	0.13 ± 0.02	0.23 ± 0.03	0.23 ± 0.03
1E	0402	1.0 ± 0.05	0.5 ± 0.05	0.14 ± 0.03	0.28 ± 0.05	0.28 ± 0.05

Ratings (in surface mounting condition)

Type	Inch size	Power rating	Max. working voltage	Max. overload voltage	Resistance range (Ω)		T.C.R (ppm/K)
					XR73H	XR73B	
XR73 1H	0201	0.063 W	50 V	100 V	F: ± 1%	J: ± 5%	± 200
					10~1M	10~10M	± 400
XR73 1E	0402	0.063 W	50 V	100 V	1~9.1*	1~9.1	± 100
					10~1M	-	± 200
					1~9.76	1~10M	
					1.02M~10M		

Rated ambient temperature: +70 °C, Operating temperature range: -55 °C ~ +155 °C

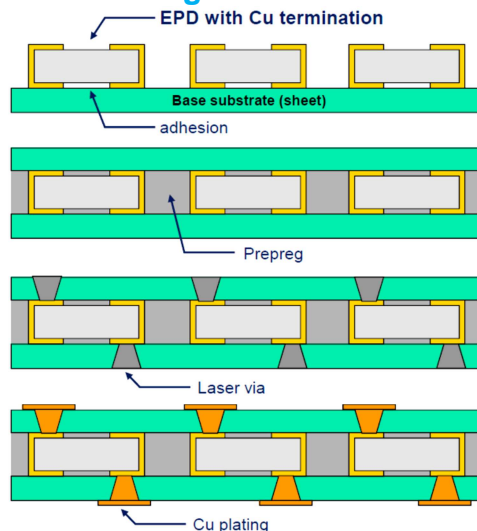
Product Features

- Low profile of 0.13 and 0.14 mm height
- Cu terminations
- Al₂O₃ substrate
- R-tolerance ±1 %, ±5 % is standard
- Jumper (1A) also available
- Suitable for conductive adhesion

Application Examples

- Industrial control systems
- Medical
- Semiconductor packaging substrate
- Smart phone module (RF, PA, CPU)
- Tablet PC, Note PC
- etc.

Cu Plating Method



Process Flow

- (1) SMD mounting
 - Mounting accuracy
 - Mechanical shock
 - Adhesive
- (2) Prepreg forming
 - Inner stress
- (3) Laser via
 - Laser diameter
 - Positioning accuracy
 - Component thickness
- (4) Cu plating
 - Chemical resistance

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