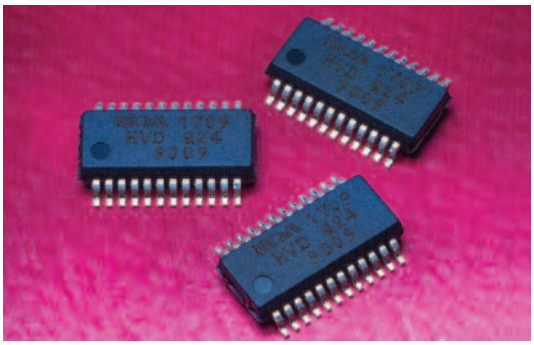
KOA SPEER ELECTRONICS, INC.

Recommended Replacement for New Design-HVDP08

# HVDQ24

## thin film network resistors for high voltage divider

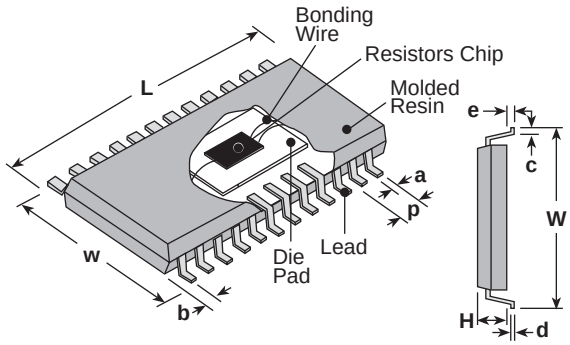
EU RoHS COMPLIANT



## features

- High precision high voltage divider
- Maximum resistance value 11.5MΩ, maximum working voltage 1000V, maximum resistance ratio 1000:1
- Relative precision of pair resistors are guaranteed
- Higher integration saves board space and overall assembly costs
- Excellent reliability with standard molded IC package
- Suitable for reflow soldering
- Products meet EU RoHS requirements
- AEC-Q200 tested

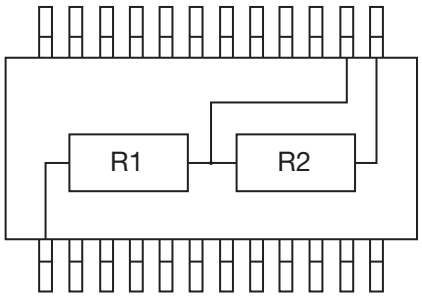
## dimensions and construction




| Type | Dimensions inches (mm) | | | | |
|---|---|---|---|---|---|
| | L ±0.2 | W ±0.2 | w ±0.2 | H ±0.2 | p ±0.1 |
| HVD | .341 (8.66) | .236 (5.99) | .150 (3.81) | .063 (1.60) | .025 (0.635) |

| Type | Dimensions inches (mm) | | | | |
|---|---|---|---|---|---|
| | a ±0.1 | b ±0.1 | c ±0.2 | d ±0.1 | e ±0.1 |
| HVD | .010 (0.25) | .033 (0.84) | .026 (0.66) | .008 (0.20) | .007 (0.18) |

## circuit schematic




## ordering information

| HVD | Q24 | T | TE | 9XXX |
|---|---|---|---|---|
| Circuit Code | Package Symbol | Termination Surface Material | Packaging | Custom Code |
| HVD: High Voltage Divider | Package type symbol + Number of pins | T: Sn | TE: Embossed plastic | |

Contact KOA when you have a control request for environmental hazardous material other than the substance specified by EU RoHS.

For further information on packaging, please refer to Appendix A.



11/08/22

## applications and ratings

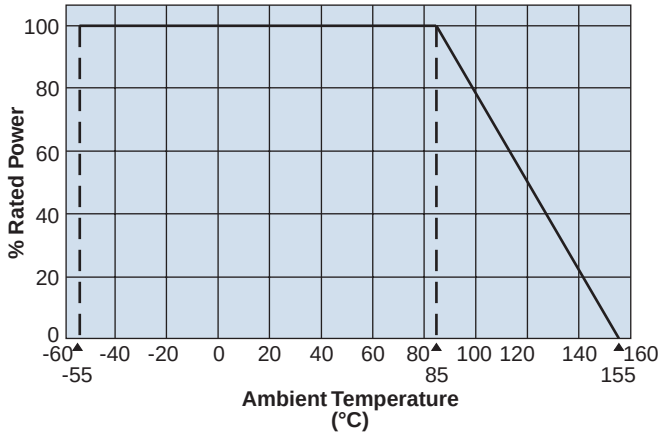
| Part Designation | Max. Working Voltage | Power Rating /Resistor Element | Resistance Range Max. Resistance Ratio (1:1000) (R1+R2)/R2 | Absolute Resistance Tolerance | Relative Resistance Tolerance | T.C.R. ($X10^{-6}$/K) | Relative T.C.R. Tracking | Rated Ambient Temperature | Operating Temperature Range |
|---|---|---|---|---|---|---|---|---|---|
| R1 | 1000V | 250mW | 0.5MΩ ~ 11.5MΩ | ±0.1%, ±0.25%, ±0.5%, ±1% | 0.1%<br>0.25%<br>0.5% | ±25<br>±50 | 10<br>25 | +85°C | -55°C to +155°C |
| R2 | 15V | 50mW | 1.5kΩ ~ 1MΩ | — | | | | | |

Rated voltage = $\sqrt{\text{Power rating x resistance value}}$ or max. working voltage, whichever is lower

Guaranteed value differs depending on resistance value

## environmental applications

### Derating Curve




For resistors operated at an ambient temperature of 85°C or above, a power rating shall be derated in accordance with the derating curve.

### Performance Characteristics

| Parameter | Requirement △ R ±(%+0.05Ω) Limit | Typical | Test Method |
|---|---|---|---|
| Resistance | Within specified tolerance | — | 25°C |
| T.C.R. | Within specified T.C.R. | — | +25°C/-55°C, +25°C/+155°C |
| Resistance to Soldering Heat | ±0.1% | ±0.02% | 260°C ± 5°C, 10 seconds ± 1 second |
| Rapid Change of Temperature | ±0.1% | ±0.01% | -55°C (30 minutes), +155°C (30 minutes), 1000 cycles |
| Moisture Resistance | ±0.1% | ±0.02% | 85°C ± 2°C, 85% ± 5% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle |
| Endurance at 85°C | ±0.1% | ±0.01% | 85°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle |
| High Temperature Exposure | ±0.1% | ±0.03% | +155°C, 1000 hours |