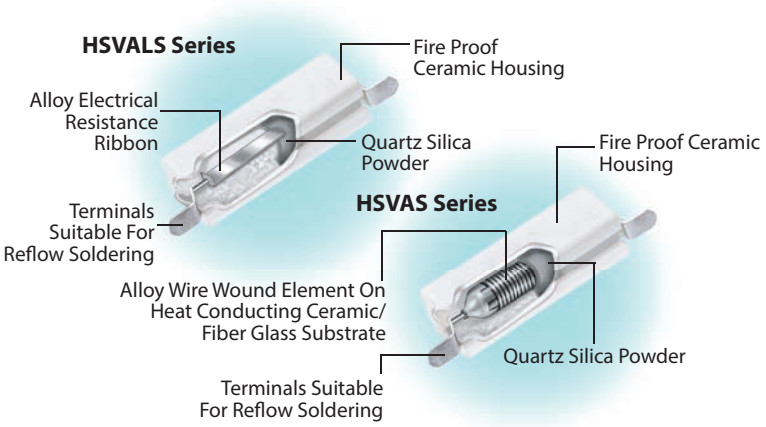



SURFACE MOUNT
CERAMIC ENCASED TYPE

# HSVAS/ HSVALS

SERIES

## Surface Mount Wire Wound/Current Sense Resistors

- 4W to 5W
- R003 to 16K

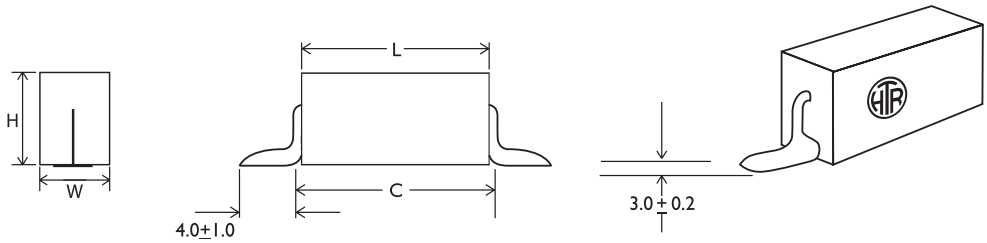
AEC-Q200 Qualified

Pb-free * RoHS COMPLIANT

SURFACE MOUNT CERAMIC ENCASED TYPE

# HSVAS/ HSVALS

## PHYSICAL CONFIGURATION

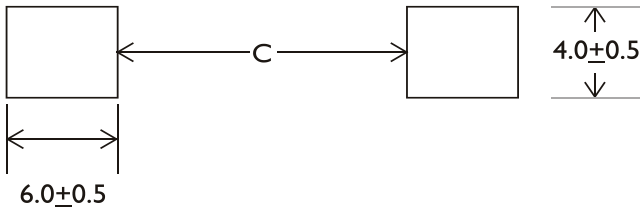



| SERIES | TYPE | POWER RATING at 70°C | DIMENSIONS (mm) | | | | RESISTANCE RANGE | | TYPICAL WEIGHT PER PC (gms) |
|---|---|---|---|---|---|---|---|---|---|
| | | | L (±1.5) | C (±1.5) | H (max) | W (max) | min | max | |
| HSVAS | SV4AS | 4W | 20.0 | 20.5 | 9.00 | 8.00 | R10 | 11K | 2.5 |
| HSVAS | SV5AS | 5W | 25.0 | 25.5 | 9.00 | 8.00 | R10 | 16K | 3.0 |
| HSVALS | SV4ALS | 4W | 20.0 | 20.5 | 9.00 | 8.00 | R003 | R051 | 2.5 |
| HSVALS | SV5ALS | 5W | 25.0 | 25.5 | 9.00 | 8.00 | R004 | R068 | 3.0 |

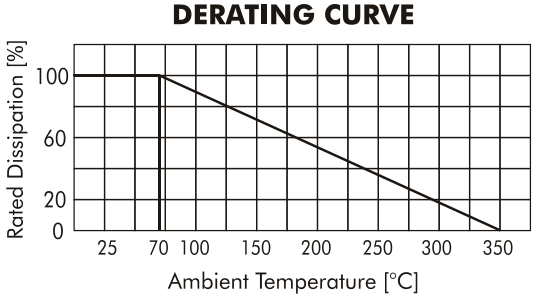
**SV4ALS & SV5ALS :**
Resistance value must be checked using 4½ digit micro-ohm meter with four wire system and insulated clips and the designer of the pad layout might prefer to split the pad for four wire checking.

## MOUNTING / ASSEMBLY DATA

For the guidance of the Design Engineer, our applications laboratory has given the recommended pad size and geometry which is shown below :




## DERATING CURVE



SURFACE MOUNT CERAMIC ENCASED TYPE

# HSVAS/ HSVALS

## ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS / DATA

| PARAMETER/PERFORMANCE TEST & TEST METHOD | PERFORMANCE REQUIREMENTS |
|---|---|
| **Power Rating** (Rated Ambient Temperature) | Full power dissipation at 70°C and linearly derated to zero at 350°C (Refer derating curve above) |
| **Resistance Tolerances Available** | ±10% [K]; ±5% [J]; ±3% [H]; ±2%[G]; ±1% [F] |
| **Temperature Range** | -55°C to 350°C (with suitable derating as per derating curve above) |
| **Voltage Rating / Limiting Voltage / Max Working Voltage** | $V = \sqrt{PxR}$ |
| **Maximum Overload Voltage** | Varies depending on resistance value, duration of overload and type of pulse waveform (Contact factory for details) |
| **Voltage Proof / Dielectric Withstanding Voltage** (Based on limiting voltage x 2 for 60 secs) | ΔR ± (1% + R05) No flashover, mechanical damage, arcing or insulation breakdown. |
| **Short Time Overload** (5 x Rated power for 5 secs) | ΔR ± [2% + R05] - HSVAS<br>ΔR ± [0.75% + R0005] - HSVALS - Typical |
| **Temperature Co-efficient of Resistance**<br>**HSVAS** | ± 120 ppm/°C for <R10 (Average)<br>± 80 ppm/°C for <1R0 (Average)<br>± 60 ppm/°C for <100R (Average)<br>± 90 ppm/°C or 30 ppm/°C for >100R depending on wire selected |
| **HSVALS** | ± 60 ppm/°C to ± 900 ppm/°C depending on resistance value (measured from - 55°C to +125°C referenced to +25°C) |
| **Insulation Resistance** | > 1000MΩ (Min) |
| **Temperature Cycling** (Room temperature →-55°C →Room temperature →200°C→Room temperature for 5 cycles )<br>**HSVAS**<br>**HSVALS** | <br><br>ΔR ± [2% + R05]<br>ΔR ± [0.5% + R0005] |
| **Damp Heat** (Steady State)<br>**HSVAS**<br>**HSVALS**<br>(40°C at 93% R.H for 1000 hours, no load applied) | <br>ΔR ± [2% + R05] - Average<br>ΔR ± [0.5% + R0005] - Average |
| **Endurance - Load Life** (70°C with limiting voltage - 1.5 hours on / 0.5 hours off for 1000 hours) | ΔR ± [≤3% + R05] - Average |

## MECHANICAL SPECIFICATIONS

| PARAMETER/PERFORMANCE TEST & TEST METHOD | PERFORMANCE REQUIREMENTS |
|---|---|
| **Resistance to Soldering heat** (260 - 270°C for 10 secs) | ΔR ± [0.2% + R05] - Typical |
| **Solderability** (As per IEC Pub. 60068-2-20 Ta) | Must meet the requirements laid down |
| **Marking** | As per IEC Pub. 60062 |

## TYPICAL APPLICATIONS

These devices have been introduced to answer the increased demand for power resistors which can be surface mounted.
The HSVAS series caters to those who require a normal wire wound with surface mounting and the HSVALS series caters to those who require a shunt / current sense device which is surface mounted.

Note:
The ceramic cases used may be steatite ceramic or corderite ceramic or high alumina ceramic. Hence, the ceramic cases may be off-white or variations of brown and variations of grey; colours which are inherent to these ceramic materials.

## ORDERING INFORMATION

| Series | HTR Type | Packing | Resistance Value | Tolerance |
|---|---|---|---|---|
| HSVAS / | HV4AS / | Bulk SV4AS / SV4AS* | 5K0 / | J |
| HSVALS | HV5ALS | Bulk SV5ALS / SV5ALS* | R03 | J |

a) RoHS version - SV4AS */ SV5ALS *