

KVS Series Datasheet

Power Wirewound Resistor | Vertical | Fiber glass core | ceramic case

APPLICATIONS



Industrial



Power & Energy

FEATURES

Pulse version available

Other preforming available

RoHS & REACH Compliant

ORDERING CODE - Example

New SAP Part Nr.:

| | | | | | | | |
|------------|--------------|-----------------------------|-----------------------|------------------------|------------------------------|-------------|--------------------------|
| KVS | 400 | K | B | - | RD- | 150R | AA |
| Serie | Power rating | Tol. J = ±5% K = ±10% | Pack-Code B = Bulk | TCR - Base on spec. | Forming type RD- = Radial | R Value | Special AA = Standard |

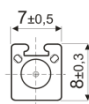
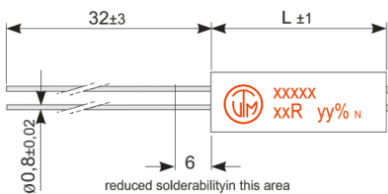
Historical VTM Part Nr.:

| | | | |
|------------------|-----------------------------|-----------------------|-------------|
| KV206 - 3 | 5 | B | 150R |
| Type | Tol. ±5% = J ±10% = K | Pack-Code B = Bulk | R Value |

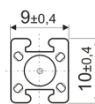
ELECTRICAL SPECIFICATIONS

| Type | | KVS400 | KVS500 | KVS700 | KVS800 | KVS10A | KVS11A | KVS17A |
|---|--------------------------------------|--|---------|---------|---------|---------|---------|---------|
| Historical Part Number | | KV206-3 | KV208-3 | KV210-3 | KV212-3 | KV214-3 | KV216-3 | KV218-3 |
| Nominal Power Rating P ₇₀ | [W] | 4 | 5 | 7 | 8 | 10 | 11 | 17 |
| Resistance Range (Other values upon request) | [Ω] | Please check the table below | | | | | | |
| | Min. | | | | | | | |
| | Max. | 9K1 | 15K | 33K | 15K | 33K | 47K | 82K |
| E-Series (preferred) | | E24 = 5% ; E12 = 10% (Other upon request) | | | | | | |
| Tolerances | ±[%] | J = 5% ; K = 10% | | | | | | |
| Temperature Coefficient | ±[10 ⁻⁶ K ⁻¹] | Depends on the value, please check the table below | | | | | | |
| Working Temperature Range | [°C] | -55 ... +350 | | | | | | |
| Thermal Resistance | [KW ⁻¹] | 70 | 56 | 40 | 35 | 28 | 25 | 16 |
| Insulation Resistance IEC60115-1 clause 4.6 | [MΩ] | > 10 ⁴ | | | | | | |
| Max. Working Voltage | [V] _{RMS} | $\sqrt{P_{70} \times R}$ | | | | | | |
| Dielectric Withstanding Voltage IEC60115-1 clause 4.7 (1[min]) | [V] _{RMS} | 2000 | | | | | | |

DIMENSIONS [mm]



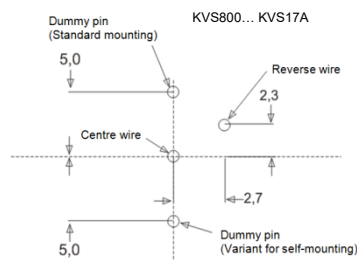
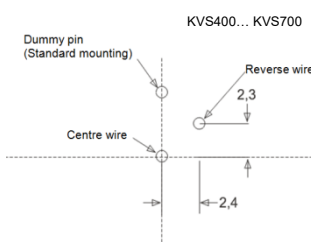
KVS400...
KVS700



KVS800...
KVS17A

| Type | Historical P/N: | L ₁ |
|--------|-----------------|----------------|
| KVS400 | KV206 - 3 | 20 ±1,0 |
| KVS500 | KV208 - 3 | 25 ±1,0 |
| KVS700 | KV210 - 3 | 38 ±1,0 |
| KVS800 | KV212 - 3 | 25 ±1,0 |
| KVS10A | KV214 - 3 | 38 ±1,0 |
| KVS11A | KV216 - 3 | 50 ±1,5 |
| KVS17A | KV218 - 3 | 75 ±2,0 |

PCB - Layout for KVS



KVS Series Datasheet

PERFORMANCE DATA

| Type | | KVS400 | KVS500 | KVS700 | KVS800 | KVS10A | KVS11A | KVS17A |
|---|-------------------------------------|-------------------------------------|---------|---------|---------|---------|---------|---------|
| Historical Part Number | | KV206-3 | KV208-3 | KV210-3 | KV212-3 | KV214-3 | KV216-3 | KV218-3 |
| Derating Linear | [°C] | 70...350 (0W) | | | | | | |
| Climatic Category | | 55/200/21 | | | | | | |
| Failure Rate <i>(Total, θ_j, max, 60[%] cont. lev.)</i> | [10 ⁻⁹ h ⁻¹] | appr. 100 depends on value | | | | | | |
| Endurance <i>IEC60115-1 clause 4.25 (P_{av} @ 70[°C], 1000[h])</i> | ±[%] | 3 | | | | | | |
| Damp Heat, Steady State <i>IEC60115-1 clause 4.24 (40[°C], 93[% r.h.], 56[d])</i> | ±[%] | 2 | | | | | | |
| Climatic Sequence <i>IEC60115-1 clause 4.23</i> | ±[%] | 2 | | | | | | |
| Resistance to Soldering Heat <i>IEC60115-1 clause 4.18 (260^{±5}[°C], 3,5^{±1}[s])</i> | ±[%] | 0,2 | | | | | | |
| Terminal Strength | ±[%] | 1 | | | | | | |
| Terminal Tensile Strength | [N] | 50 | | | | | | |
| Solderability <i>IEC60068-2-20 (245^{±5}[°C] 3^{±0,5}[s])</i> | | Solder bath method (> 95% coverage) | | | | | | |
| Marking <i>IEC60062</i> | | Printed in clear | | | | | | |

ELECTRICAL CHARACTERISTICS

RESISTANCE RANGE (minimum)

| New P/Nr. Type | Historical P/N: | ± 10 [%] | ± 5 [%] |
|----------------|-----------------|----------|---------|
| KVS400 | KV206 – 3 | OR051 | OR1 |
| KVS500 | KV208 – 3 | OR075 | OR15 |
| KVS700 | KV210 – 3 | OR11 | OR33 |
| KVS800 | KV212 – 3 | OR075 | OR15 |
| KVS10A | KV214 – 3 | OR11 | OR33 |
| KVS11A | KV216 – 3 | OR15 | OR51 |
| KVS17A | KV218 – 3 | OR27 | OR91 |

TEMPERATURE COEFFICIENT

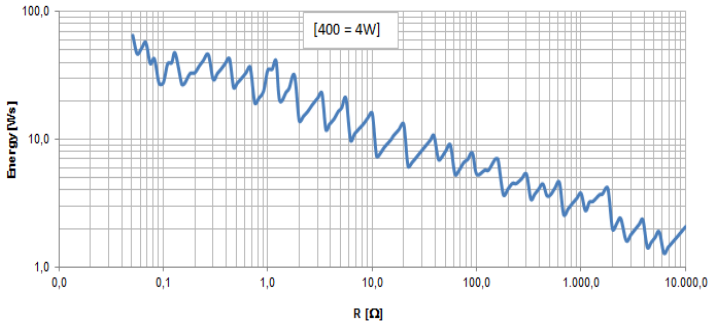
| New P/Nr. Type | Historical P/N: | 400 ± 50 ppm/K | | -20 ± 60 ppm/K | | 0 ± 10 ppm/K | |
|----------------|-----------------|----------------|--------|----------------|--------|--------------|-------|
| | | ≥ | ≤ | ≥ | ≤ | ≥ | ≤ |
| KVS400 | KV206 – 3 | ≥ OR051 | ≤ OR2 | ≥ OR22 | ≤ 300R | ≥ 330R | ≤ 9K1 |
| KVS500 | KV208 – 3 | ≥ OR075 | ≤ OR3 | ≥ R33 | ≤ 470R | ≥ 510R | ≤ 15K |
| KVS700 | KV210 – 3 | ≥ OR11 | ≤ OR68 | ≥ OR75 | ≤ 910R | ≥ 1K | ≤ 33K |
| KVS800 | KV212 – 3 | ≥ OR075 | ≤ OR3 | ≥ OR33 | ≤ 470R | ≥ 510R | ≤ 15K |
| KVS10A | KV214 – 3 | ≥ OR11 | ≤ OR68 | ≥ OR75 | ≤ 910R | ≥ 1K | ≤ 33K |
| KVS11A | KV216 – 3 | ≥ OR15 | ≤ 1R | ≥ 1R1 | ≤ 1K3 | ≥ 1K5 | ≤ 47K |
| KVS17A | KV218 – 3 | ≥ OR27 | ≤ 1R6 | ≥ 1R8 | ≤ 2K4 | ≥ 2K7 | ≤ 82K |

KVS Series Datasheet

PERFORMANCE GRAPHS

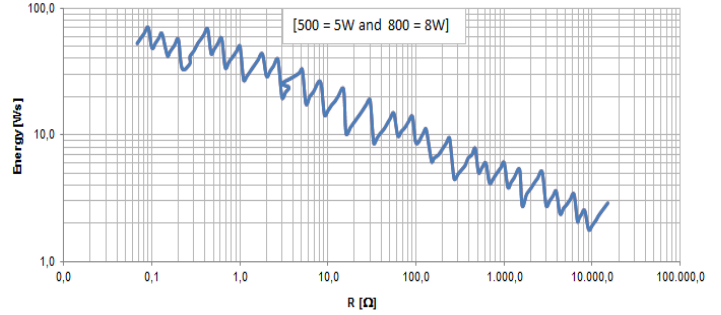
KVS400

Energy Capability graph (based on a wire temperature)



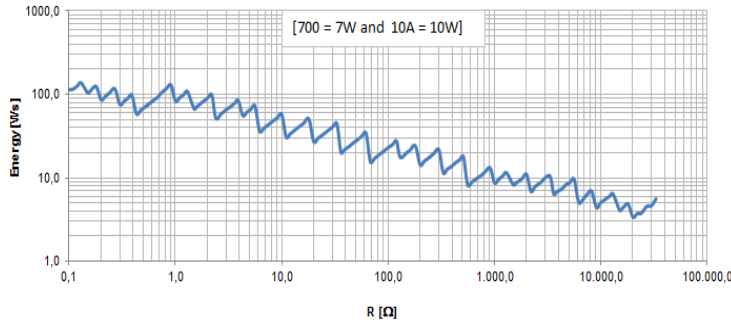
KVS500 and KVS800

Energy Capability graph (based on a wire temperature)



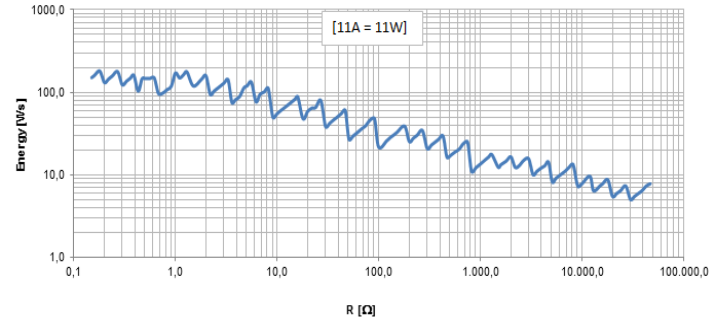
KVS700 and KVS10A

Energy Capability graph (based on a wire temperature)



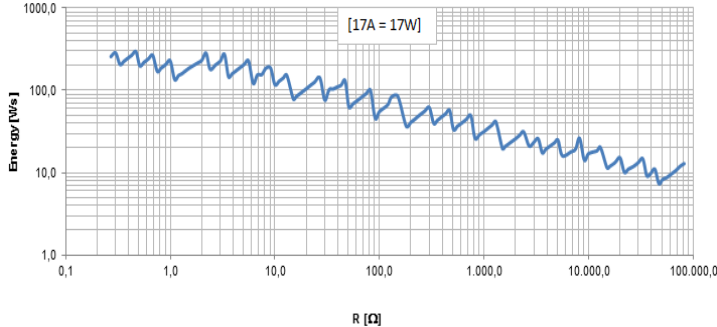
KVS11A

Energy Capability graph (based on a wire temperature)



KVS17A

Energy Capability graph (based on a wire temperature)



PACKAGING

The standard packaging for KVS in radial type is bulk, dimensions below.



| New P/Nr. Type | Historical P/N: | Pack Code | Pieces | Forming Type |
|----------------|-----------------|-----------|--------|--------------|
| KVS400 | KV206 - 3 | B = Bulk | 200 | RD- = Radial |
| KVS500 | KV208 - 3 | | 200 | |
| KVS700 | KV210 - 3 | | 200 | |
| KVS800 | KV212 - 3 | | 200 | |
| KVS10A | KV214 - 3 | | 200 | |
| KVS11A | KV216 - 3 | | 200 | |
| KVS17A | KV218 - 3 | | 100 | |