

HVP

High Voltage Thick Film Planar Resistors

- High resistance resistors for high voltage circuits
- Thin SIP shape
- The flame retardant coats corresponding to UL94V-0 are used
- Thick film resistors ensure high stabilities in life and change in aging
- Products with lead-free terminations meet EU RoHS requirement.

EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.



■ GENETAL SPECIFICATIONS

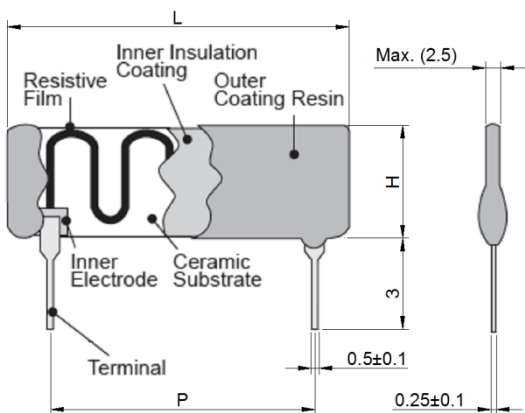
| Model | Power Rating | Resistance Range [Ω] | | | | | | T.C.R [ppm/ $^{\circ}$ C] | Max. Working Voltage |
|---------|--------------|-------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|------------------------------|----------------------|
| | | D [$\pm 0.5\%$] | F [$\pm 1.0\%$] | G [$\pm 2.0\%$] | J [$\pm 5.0\%$] | K [$\pm 10\%$] | M [$\pm 20\%$] | | |
| HVP 3C | 0.5W | 1M-100M | 1M-100M | - | - | - | - | ± 50 | 4kV |
| | | - | 1M-500M | 1M-500M | 1M-1G | 1M-1G | 1M-1G | ± 250 | 7kV |
| HVP 4C | 0.6W | 1M-100M | 1M-100M | - | - | - | - | ± 50 | 5kV |
| HVP 5C | 0.75W | 1M-150M | 1M-150M | - | - | - | - | ± 50 | 6kV |
| | | - | 1M-500M | 1M-500M | 1M-1G | 1M-1G | 1M-1G | ± 250 | 10kV |
| HVP 6C | 0.8W | 1M-150M | 1M-150M | - | - | - | - | ± 50 | 7kV |
| HVP 7C | 0.85W | 1M-200M | 1M-200M | - | - | - | - | ± 50 | 8kV |
| | | - | 1M-500M | 1M-500M | 1M-1G | 1M-1G | 1M-1G | ± 250 | 10kV |
| HVP 8C | 1.0W | 1M-200M | 1M-200M | - | - | - | - | ± 50 | 9kV |
| | | - | 1M-500M | 1M-500M | 1M-1G | 1M-1G | 1M-1G | ± 250 | 10kV |
| HVP 9C | 1.1W | - | 1M-500M | 1M-500M | 1M-1M | 1M-1G | 1M-1G | ± 250 | 10kV |
| HVP 4L | 0.5W | - | 2M-10M | 2M-10M | - | - | - | ± 250 | 1kV |
| HVP 5L | 0.5W | - | 1M-500M | 1M-500M | 1M-1G | 1M-1G | 1M-1G | ± 250 | 10kV |
| HVP 6L | 0.6W | - | 1M-500M | 1M-500M | 1M-1M | 1M-1G | 1M-1G | ± 250 | 10kV |
| HVP 11X | 1.7W | - | 1M-500M | 1M-500M | 1M-1G | 1M-1G | 1M-1G | ± 250 | 10kV |
| HVP 18X | 2.7W | - | 1M-500M | 1M-500M | 1M-1G | 1M-1G | 1M-1G | ± 250 | 15kV |
| HVP 18D | 4W | 1M-100M | 1M-500M | 1M-500M | 1M-1G | 1M-1G | 1M-1G | ± 100 | 15kV |

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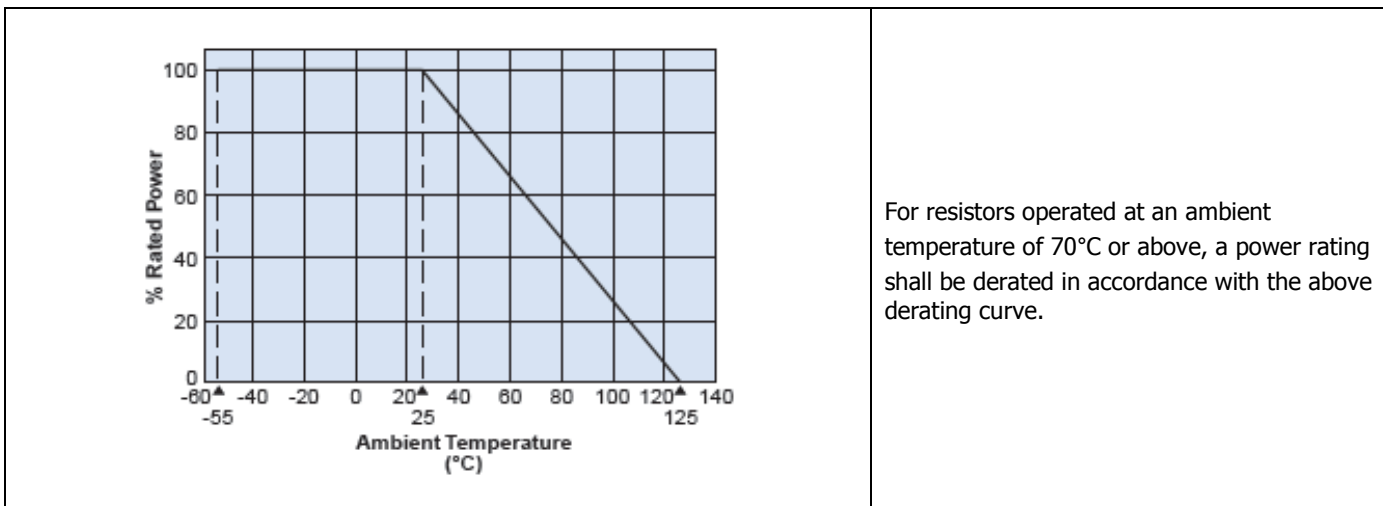
| Parameter | Requirement $\Delta R \pm (\% + 0.05\Omega)$ | | Test Method |
|----------------------------|--|---------|--|
| | Limit | Typical | |
| Rated Ambient Temp. | - | -- | +70 $^{\circ}$ C |
| Operating Temp. Range | - | - | -25 $^{\circ}$ C to +125 $^{\circ}$ C |
| T.C.R | Within specified tolerance | | +25 $^{\circ}$ C / +125 $^{\circ}$ C |
| Resistance to Solder Heat | 1% | 0.5% | 260 $^{\circ}$ C \pm 5 $^{\circ}$ C, 10 seconds \pm 1 second |
| Rapid Change of Temp. | 1% | 0.5% | -25 $^{\circ}$ C (30 minutes) / +125 $^{\circ}$ C (30 minutes) 5 cycles |
| Moisture Resistance | 5% | 3% | 40 $^{\circ}$ C \pm 2 $^{\circ}$ C, 90-95% RH, 1000 hours |
| Endurance @70 $^{\circ}$ C | 5% | 3% | Room Temp. 1000 hours, Rated voltage |

DIMENSIONS [mm] AND CONSTRUCTION

| Model | Dimensions | | |
|---------|------------|----------|-------|
| | L (Max.) | H (Max.) | P |
| HVP 3C | 10.8 | 6.5 | 7.62 |
| HVP 4C | 13.3 | 6.5 | 10.16 |
| HVP 5C | 15.8 | 6.5 | 12.7 |
| HVP 6C | 18.4 | 6.5 | 15.24 |
| HVP 7C | 20.9 | 6.5 | 17.78 |
| HVP 8C | 23.5 | 6.5 | 20.32 |
| HVP 9C | 26.0 | 6.5 | 22.86 |
| HVP 4L | 12.7 | 5.08 | 10.16 |
| HVP 5L | 15.3 | 5.08 | 12.7 |
| HVP 6L | 17.8 | 5.08 | 15.24 |
| HVP 11X | 31.0 | 10.0 | 27.94 |
| HVP 18X | 48.9 | 10.0 | 45.72 |
| HVP 18D | 48.9 | 13.2 | 45.72 |



DERATING CURVE



For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the above derating curve.

ODERING PROCEDURE EXAMPLE

| HVP 3C | 1004 | F | 50 |
|---------------|------------------------------------|---|------------|
| Model # | Resistance | Resistance Tolerance | T.C.R |
| (Standard) | 4 digits : F 3 digits : G,J,K,M | F : ±1% G : ±2% J : ±5% K : ±10% M : ±20% | 100 250 |
| (Precision) | 4 digits : D,F | D : ±0.5% F : ±1% | 50 |