

HV05 Series High Voltage Resistors

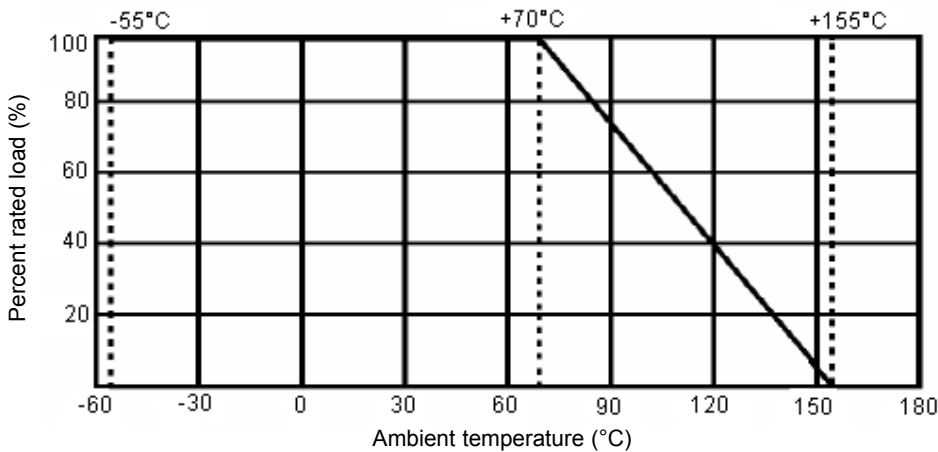


Specification

Type	Power Rating (W)	Maximum Working Voltage (V)	Maximum Overload Voltage (V)	Temperature Range (°C)	Ambient Temperature (°C)
HV05	0.10	300	800	-55 to +155	70

Power Rating:

Resistors shall have a power rating based on continuous load operation at an ambient temperature of 70°C. For temperature in excess of 70°C, The load shall be derate.



Nominal Resistance

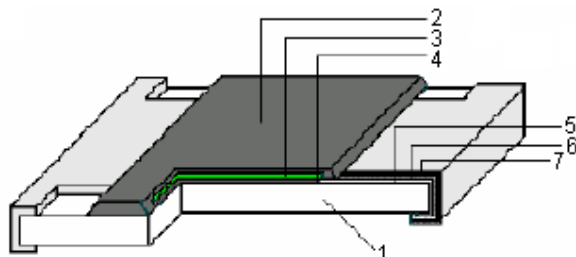
Effective figures of nominal resistance shall be in accordance with E-24 and E-96 series for 1% and E-24 series for 2% and 5%.



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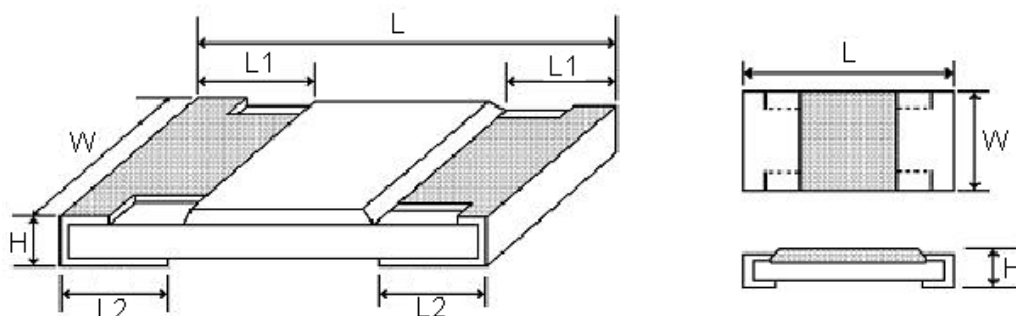


Construction:



1. High Purity Alumina Substrate.
2. Protective covering.
3. Protective covering.
4. Resistive covering.
5. Termination inner (Ag/Pd).
6. Termination (between) Ni plating.
7. Termination (outer) Sn plating.

Power rating and dimensions



Dimensions : Millimetres

Dimensions

Type	$L \pm 0.15$	$W + 0.15$ $- 0.10$	$H \pm 0.10$	$L1 \pm 0.20$	$L2 \pm 0.20$
HV05	2.00	1.25	0.55	0.40	0.40

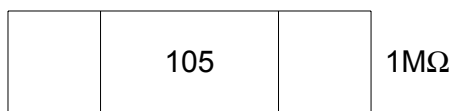
Dimensions : Millimetres

Power Rating

Type	Power Rating at 70°C (W)	Tolerance %	Resistance Range (Ω)	Standard Series
HV05	0.10 (1/10)	± 5	100K to 10M	E-24

Marking on the Resistors

A $\pm 5\%$ Tolerance: the first two digits are significant figures of resistance and the third one denoted number of zeros.



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Performance specifications

Characteristics	Limits	Test Methods (JIS C 5202)
Temperature coefficient	± 200 PPM/ $^{\circ}$ C	Natural resistance change per temperature degree centigrade $R2-R1/ R1 (t2-t1) \times 10^6$ (PPM/ $^{\circ}$ C). R1 : Resistance value at room temperature (t1) R2 : Resistance value at room temperature plus 100 $^{\circ}$ C (t2). Test pattern : Room temperature(t1), Room temperature+100 $^{\circ}$ C(t2)
Short time overload	$\Delta R \leq \pm(2.0\% + 0.1\Omega)$ maximum	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds.
Humidity (Steady State)	$\Delta R \leq \pm(3.0\% + 0.1\Omega)$ maximum	Temporary resistance change after 1000 hours exposure in a humidity test chamber controlled at 40 $\pm 2^{\circ}$ C and 90 to 95% relative humidity.
Terminal bending	$\Delta R \leq \pm(1.0\% + 0.05\Omega)$ maximum	Twist of Test Board : Y/X = 3/90 mm for 60 seconds.
Temperature cycling	5%: $\Delta R \leq \pm(1.0\% + 0.05\Omega)$ maximum	Resistance change after continuous 5 cycles for duty cycles specified below Step 1 : 30 minutes at -55 $\pm 3^{\circ}$ C Step 2 : 10 to 15 minutes at room temperature Step 3 : 30 minutes at 155 $\pm 2^{\circ}$ C Step 4 : 10 to 15 minutes at room temperature
Load life in humidity	$\Delta R \leq \pm(3.0\% + 0.01\Omega)$ maximum	Resistance change after 1000 hours (1.5 hours "on", 0.5 hour "off") at RCWV in a humidity chamber controlled at 40 $^{\circ}$ C $\pm 3^{\circ}$ C and 90 to 95% relative humidity.
Load Life	$\Delta R \leq \pm(3.0\% + 0.01\Omega)$ maximum	Permanent resistance change after 1000 hours operating at RCWV, with duty cycle 1.5 hours "on", 0.5 hour"off" at 70 $^{\circ}$ C $\pm 2^{\circ}$ C ambient.
Solderability	95% coverage minimum	Test temperature of solder : 245 $\pm 3^{\circ}$ C Dipping time in solder : 2 to 3 seconds.
	Go up tin rate bigger than half of end pole.	Reflow:



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Resistance Preferred Value Range

E6	E12	E24	E96	E6	E12	E24	E96	E6	E12	E24	E96
10	10	10	10.0				21.5				46.4
			10.2	22	22	22	22.1	47	47	47	47.5
			10.5				22.6				48.7
			10.7				23.2				49.9
		11	11.0				23.7			51	51.1
			11.3			24	24.3				52.3
			11.5				24.9				53.6
			11.8				25.5				54.9
	12	12	12.1				26.1	56	56	56	56.2
			12.4				27.7				57.6
			12.7		27	27	27.4				59.0
		13	13.0				28.0				60.4
			13.3				28.7			62	61.9
			13.7				29.4				63.4
			14.0			30	30.1				64.9
			14.3				30.9				66.5
			14.7				31.6	68	68	68	68.1
15	15	15	15.0				32.4				69.8
			15.4	33	33	33	33.2				71.5
			15.8				34.0				73.2
		16	16.2				34.8			75	75.0
			16.5				35.7				76.8
			16.9			36	36.5				78.7
			17.4				37.4				80.6
			17.8				38.3	82	82	82	82.5
	18	18	18.2		39	39	39.2				84.5
			18.7				40.2				86.6
			19.1				41.2				88.7
			19.6				42.2			91	90.9
		20	20.0			43	43.2				93.1
			20.5				44.2				95.3
			21.0				45.3				97.6

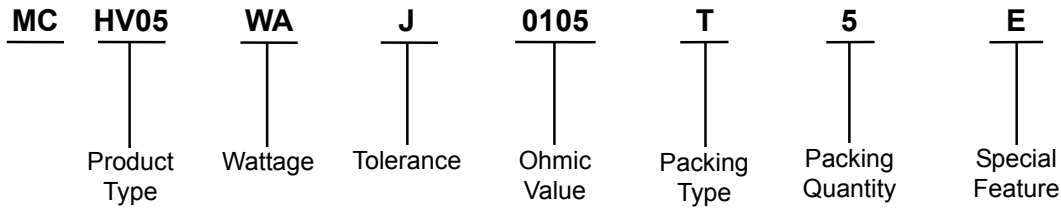
Above values in accordance with IEC Publication 63 (1963) and BS2488



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Part Number Explanation:



- Product Type** : HV05 type.
Wattage : W4 = 1/10W.
Tolerance : J = $\pm 5\%$.
Ohmic Value : Where R = Ohms = Ω .
 K = Kiloohms = $K\Omega$.
 M = Megaohms = $M\Omega$.
 And replaces the decimal point.
 eg: 1R5 = 1.5Ω .
 4K7 = $4.7K\Omega$.
 6M8 = $6.8M\Omega$.
Packing Type : T = T/R Packing.
Packing Quantity : 5 = 5000 pieces
Special Feature : E = Lead free.

Stocked Values

Tolerance	Wattage (W)	Preferred Value Range	Range Value
1%	0.063	E96	1R5 - 1M
1%	0.1	E24	1R5 - 1M
1%	0.125	E24	10R - 1M



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Notes:

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