



## ● Introduction

- I .HVC ceramic resistor which KWX adopts specific technology by using a mixture of clay、 silicon dioxide、 porcelain powder, after high temperature sintering, the material is molded to the required shape.
- II .HVC ceramic resistor offers designers a solution for applications involving high voltages, surges, high peak power, or high energy pulses, perfect for engine ignition system.
- III .For customized designs, tighter tolerance, non-standard technical requirements, or custom special applications are available.

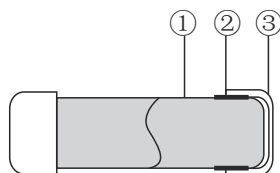
## ● Features

- I Suitable for noise suppressor of engine ignition system.Excelent noise prevention of engine ignition circuit system.
- II High peak power,more reliable than wire wound resistors and film against disconnection.
- III Meets high energy density demands.
- IV Products meet Eu-RoHS requirements.

## ● Application

- I Inrush limiters.
- II R-C snubber circuits.
- III Engine ignition system.
- IV High voltage power supplies.

## ● Construction



①	Resistor
②	Inner electrode
③	Electrode cap

## ● Ordering Information

Example:

HVC	1	K	C	T	10R0
(1)	(2)	(3)	(4)	(5)	(6)
Series Name	Power Rating	Resistance Tolerance	TCR	Packaging	Resistance

(1)Type: HVC SERIES

(2)Power Rating: 1/2S=0.5W、 1/2=0.5W、 1A=1W、 2=2W、 3=3W

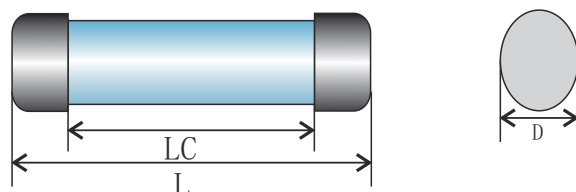
(3)Tolerance: K= ± 10%、 M= ± 20%

(4)TCR: ± 350ppm/°C;

(5)Packaging: B=bulk, T=Tape&Reel

(6)Resistance Value:10R0=10R、 R10=0.1Ω、 47R0=47Ω

## ● Dimensions



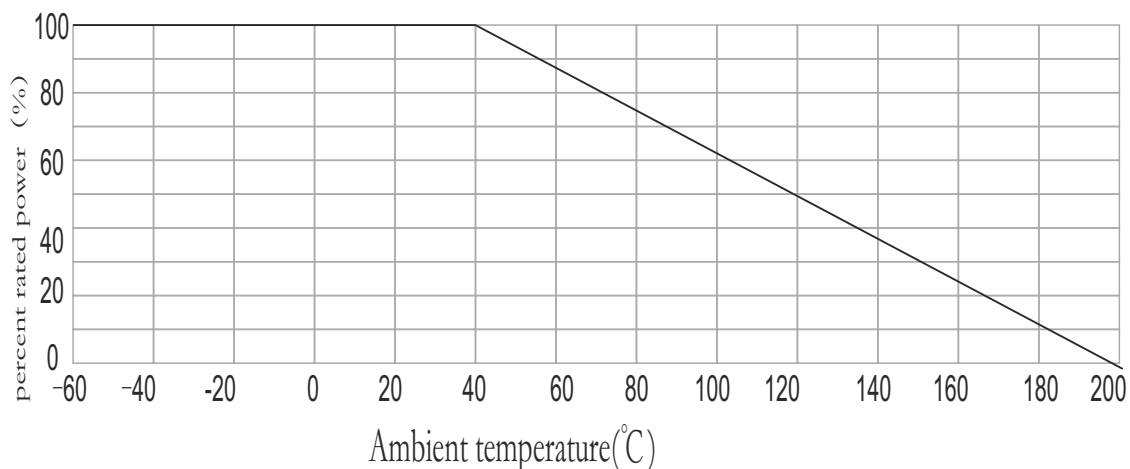
Type	power	Dimensions(mm)			Cap Plating Type
		L	Lc	D	
HVC1/2S	0.5W	9.00 ± 0.3	3.0min	3.00 ± 0.2	Sn or Ni
HVC 1/2	0.5W	10.5 ± 0.3	4.0min	3.50 ± 0.2	
HVC1A	1W	11.0 ± 0.3	5.0min	4.00 ± 0.2	
HVC1B	1W	15.0 ± 0.3	6.0min	4.00 ± 0.2	
HVC1S	1W	11.0 ± 0.3	4.0min	4.50 ± 0.2	
HVC1C	1W	8.00 ± 0.3	3.0min	4.50 ± 0.2	
HVC2	2W	15.0 ± 0.3	6.0min	4.50 ± 0.2	
HVC3	3W	18.0 ± 0.3	8.0min	4.50 ± 0.2	
HVC3A	3W	21.0 ± 0.3	10.0min	4.50 ± 0.2	
HVC3B	3W	16.5 ± 0.3	7.0min	5.5 ± 0.2	
HVC3C	3W	18.0 ± 0.3	9.0min	5.5 ± 0.2	

## ● Power And Resistance etc

Type	Power Rating	Nominal Resistance	Max.Working Voltage	Max.Overload Voltage	Rated Ambient Temperature	Operating Temp.Range	Max. pulse voltage	Resistance Tolerance
HVC 1/2S	0.5W	100Ω~20KΩ	85V	215V	+40°C	-40°C ~+200°C	4000	K: ± 10% M: ± 20%
HVC 1/2	0.5W		85V	215V			4000	
HVC 1A	1.0W		120V	305V			2000	
HVC 1B	1.0W		120V	305V			2000	
HVC 1S	1.0W		120V	305V			2000	
HVC 1C	1.0W		150V	375V			2000	
HVC 2	2.0W		170V	430V			1000	
HVC 3	3.0W		300V	600V			1000	
HVC 3A	3.0W		300V	600V			1000	
HVC 3B	3.0W		300V	600V			1000	
HVC 3C	3.0W		300V	600V			1000	

Rated voltage= power rating\*resistance value or Max.working voltage,whichever is lower.

## Derating Curve



For resistors operated at an ambient temperature of 40°C or above, a power rating shall be derated in accordance with the above derating curve.

## Performance Reference Standards: IEC60115-1 and JI S5202-1

Test items	Performance Requirements $\Delta R \pm \% + 0.05\Omega$		Test Methods					
	Limit	Typical						
Resistance	Within specified tolerance	1K $\Omega$ 2K $\Omega$ 1.5K $\Omega$ 5K $\Omega$ 10K $\Omega$ 15K $\Omega$	25°C					
			Resistance		Measuring Voltage			
			1K $\Omega$ 5K $\Omega$		10V			
			10K $\Omega$ 15K $\Omega$		30V			
T.C.R	-1500ppm/°C $\leq$ TCR $\leq$ -900ppm/°C	~	+25°C / -40°C and +25°C / +125°C					
Voltage coefficient	0 ~ -0.20%/V	~	Rated voltage and rated voltage x 10%					
Overload (short time)	$\leq \Delta R \pm 2\%R + 0.05\Omega$	0.3	Rated voltage x 2.5 or max overload voltage for 5 seconds, whichever is less.					
Load life at high voltage pulse	$\leq \Delta R \pm 5\%R + 0.5\Omega$	20 ~ 30KV	Continuous 250h high voltage pulse on test circuit (Refer to JIS D5111) HVC1/2, HVC1 insulation oil					
Resistor body strength	No mechanical damage	~	Type	Holding distance	Duration	Load		
			HVC1/2S	5.0 $\pm$ 0.2mm			10s	98N(10kg)
			HVC1/2					
			HVC1A					
			HVC1S	9.0 $\pm$ 0.3mm				
			HVC1					
HVC2S	12.3 $\pm$ 0.3mm	490N(50kg)						
HVC2								
Rapid change of temperature	$\leq \Delta R \pm (5\%R + 0.5\Omega)$	5	-55°C (15min) / +155°C (15min) 500 cycles					
Moisture resistance	$\leq \Delta R \pm (5\%R + 0.1\Omega)$	0.9	40°C $\pm$ 2°C, 90%-95%RH, 1000h 1.5h ON / 0.5h OFF cycles					
Load life	$\leq \Delta R \pm (5\%R + 0.1\Omega)$	0.7	40°C $\pm$ 2°C, 1000h 1.5h ON / 0.5h OFF cycles					
Low temperature exposure	$\leq \Delta R \pm (5\%R + 0.1\Omega)$	0.7	-40°C, 24h					
High temperature exposure	$\leq \Delta R \pm (5\%R + 0.5\Omega)$	2.0	+200°C, 1000h					

When testing the resistance value, the temperature should keep at 25°C  $\pm$  2°C and the moisture keep at 65%.