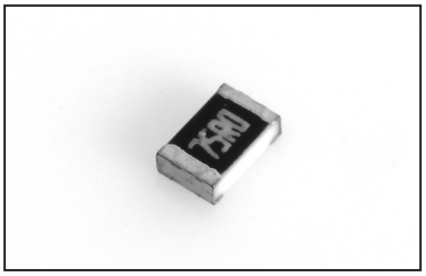
High Voltage Thick Film Chip Resistors

- Highly reliable multilayer electrode construction
- Higher component and equipment reliability
- Excellent performance at high voltage
- Reduced size of final equipment
- Applications: Inverter, converter, outdoor equipments, automotive industry, high pulse equipment



GENERAL SPECIFICATIONS

Model	Power Rating at 70℃	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range ±1%	Resistance Range ±5%	TCR [ppm/℃]
HVTK02 (0402)	1/16W	-55℃ ~ +155℃	100V	200V	10Ω ~1MΩ		±100
					1.02MΩ~10MΩ	1.1MΩ~20MΩ	±200
						22MΩ~100MΩ	±400
HVTK03 (0603)	1/10W		200V	400V	10Ω ~1MΩ		±100
					1.02MΩ~10MΩ	1.1MΩ~20MΩ	±200
						22MΩ~100MΩ	±400
HVTK04 (0805)	1/8W		400V	800V	10Ω ~1MΩ		±100
					1.02MΩ~10MΩ	1.1MΩ~20MΩ	±200
						22MΩ~100MΩ	±400
HVTK06 (1206)	1/4W		500V	1000V	10Ω ~1MΩ		±100
					1.02MΩ~10MΩ	1.1MΩ~20MΩ	±200
						22MΩ~100MΩ	±400
HVTK0A (2010)	1/2W		2000V	3000V	10Ω ~1MΩ		±100
					1.02MΩ~20MΩ	1.1MΩ~20MΩ	±200
						22MΩ~100MΩ	±400
HVTK12 (2512)	1W		3000V	4000V	10Ω ~1MΩ		±100
					1.02MΩ~20MΩ	1.1MΩ~20MΩ	±200
						22MΩ~100MΩ	±400

* Operating voltage=√(P*R) or Maximum operating voltage listed above, whichever is lower.
* Overload voltage=2.5*√(P*R) or Maximum overload voltage listed above, whichever is lower.

CHARACTERISTICS

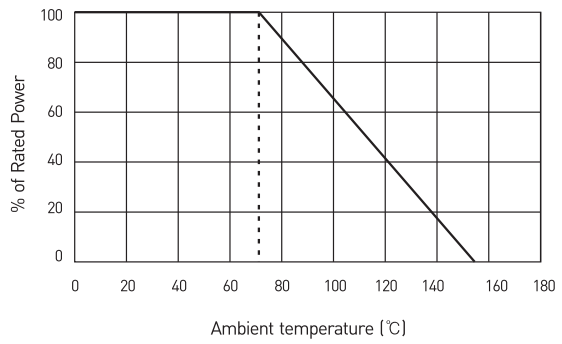
Values in [ ] mean charge in Ω after test

Item	Requirement ±1%	Requirement ±5%	Test Method
Short Time Overload	±(1.0%+0.05Ω)	±(2.0%+0.05Ω)	RCWV*2.5 or maximum overload voltage for 5 seconds
Insulation Resistance	≥10G		Maximum overload voltage for 1 minute
Load Life	±(2.0%+0.10Ω)	±(3.0%+0.10Ω)	70±2℃, Maximum working voltage for 1000 hours with 1.5 hours "ON" and 0.5 hour "OFF"
Moisture Load Life	±(2.0%+0.10Ω)	±(3.0%+0.10Ω)	40±2℃, 90~95% RH, Maximum working voltage for 1000hrs with 1.5 hours "ON" and 0.5 hour "OFF"
Dry Heat	±(1.0%+0.05Ω)	±(1.5%+0.10Ω)	At +155℃ for 1000hours
Bending Strength	±(1.0%+0.05Ω)	±(1.0%+0.05Ω)	Bending once for 5 seconds 2010, 2512 sizes : 2mm, Other sizes : 3mm
Solderability	95% coverage minimum		245±5℃ for 3 seconds
Resistance to Soldering Heat	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)	260±5℃ for 10 seconds
Voltage Proof	No breakdown or flashover		1.42 times RCWV(RMS) for 1 minute
Leaching	Individual leaching area ≤ 5% Total leaching area ≤ 10%		260±5℃ for 30 seconds
Rapid Change of Temperature	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)	-55℃ to +155℃, 5 cycles

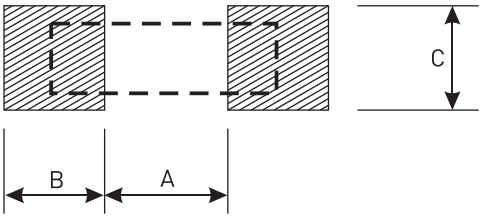
* Reference standards: IEC 60115-1, 60068-2-58; JIS-C 5201-1
* Storage temperature: 25±3℃; Humidity 〈 80%RH

Tel: 82-32-817-4325 Fax: 82-32-817-4329

DERATING CURVE

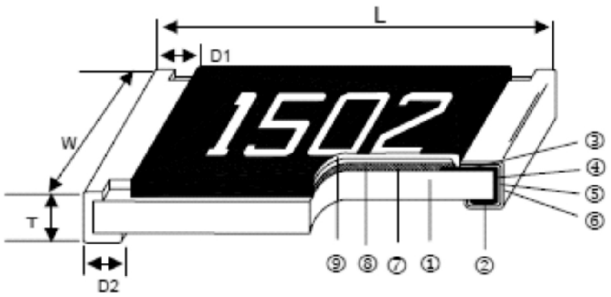


RECOMMENDED LAND PATTERN [mm]



Model	A	B	C
HVTK02	0.5	0.45	0.6
HVTK03	0.9	0.6	0.9
HVTK05	1.2	0.7	1.3
HVTK06	2.0	0.9	1.6
HVTK0A	3.8	0.9	2.8
HVTK12	3.8	1.6	3.5

DIMENSIONS [mm]



① Alumina Substrate
② Bottom Electrode (Ag)
③ Top Electrode (Ag-Pb)
④ Edge Electrode (NiCr)
⑤ Barrier Layer (Ni)
⑥ External Electrode (Sn)
⑦ Resistor Layer (RuO_2/Ag)
⑧ Primary Overcoat (Glass)
⑨ Secondary Overcoat (Epoxy)

Model	Size(Inch)	L	W	T	D1	D2	Weight(g)(1000pcs)
HVTK02	0402	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.10	0.20±0.10	0.620
HVTK03	0603	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.20	0.30±0.20	2.042
HVTK05	0805	2.00±0.10	1.25±0.10	0.50±0.10	0.35±0.20	0.40±0.20	4.368
HVTK06	1206	3.10±0.10	1.55±0.10	0.55±0.10	0.50±0.25	0.50±0.20	8.947
HVTK0A	2010	5.00±0.10	2.50±0.15	0.55±0.10	0.60±0.25	0.50±0.20	24.241
HVTK12	2512	6.35±0.10	3.10±0.15	0.55±0.10	0.60±0.25	0.50±0.20	39.448

ORDERING PROCEDURE EXAMPLE

Ordering Example	Model	TCR	Resistance	Tolerance	Code
HVTK02 E0100FB	HVTK02	E[±100 ppm/℃]	10Ω	F[±1%]	B(Bulk)
HVTK03 E1001JB	HVTK03	E[±100 ppm/℃]	1KΩ	J[±5%]	B(Bulk)
HVTK05 E1004JB	HVTK05	E[±100 ppm/℃]	1MΩ	J[±5%]	B(Bulk)
HVTK06 F1005FT	HVTK06	F[±200 ppm/℃]	10MΩ	F[±1%]	T(Taping Reel)
HVTK0A F1005JT	HVTK0A	F[±200 ppm/℃]	10MΩ	J[±5%]	T(Taping Reel)
HVTK12 H1006JT	HVTK12	H[±400 ppm/℃]	100MΩ	J[±5%]	T(Taping Reel)