

KWK RESISTORS INDIA



KCTK SERIES - THICK FILM CHIP RESISTORS - SURFACE MOUNT TYPE

The KCTK series is a range of small size and light weighted rectangular type thick film fixed chip, commonly known as SMD. Ruthenium-base is used to construct these resistors. The construction includes highly reliable multilayer electrodes. This series is designed to be compatible with all soldering processes.

Features:

- Small Size and light Weight.
- Highly reliable multilayer electrode constructions.
- Compatible with all soldering process.

Applications:

- Telecommunication Equipment.
- Electronic Devices.
- Automotive Industries.
- Medical and Military Equipment.



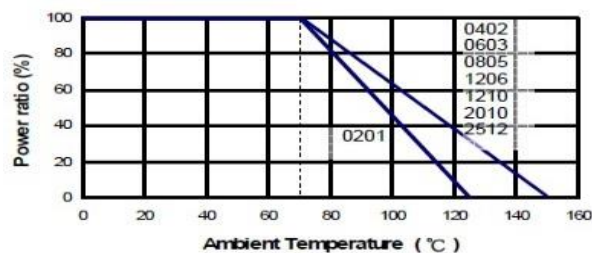
ELECTRICAL AND ENVIRONMENTAL SPECIFICATIONS

Characteristics	Condition	Compliance
Tolerance		±1% & ±5%
Insulation Resistance	Max. Overload voltage for 1minute (According to IEC-60115-1 4.6)	≥10GΩ
Change in resistance		
a. Short time overload	RCWV*2.5 or Max. overload voltage for 5sec (2sec for high power series). (According to IEC-60115-1 4.13)	± (1% + 0.05Ω) for ± 1% and below. ± (2% + 0.05Ω) for ± 5%.
b. Endurance	@70±2°C Max. working voltage for 1000hrs with 1.5hrs ON and 0.5hrs OFF. (According to IEC-60115-1 4.25.1)	± (1% + 0.10Ω) for ± 1% and below. ± (2% + 0.10Ω) for ± 5%.
c. Damp Heat with load	@40±2°C, 90~95% RH. Max. working voltage for 1000hrs with 1.5hrs ON and 0.5hrs OFF. (According to IEC-60115-1 4.24)	± (1% + 0.10Ω) for ± 1% and below. ± (2% + 0.10Ω) for ± 5%.
d. Dry Heat	@+125/+155°C for 1000hrs (According to IEC-60115-1 4.23.2)	± (1% + 0.05Ω) for ± 1% and below. ± (1.5% + 0.0) for ± 5%.
e. Bending Strength	Bending once for 5 seconds (According to IEC-60115-1 4.33)	± (1% + 0.05Ω) for ± 1% and below. ± (1% + 0.05Ω) for ± 5%.
f. Rapid change in temperature	-55°C to +125/+155°C, 5 cycles (According to IEC-60115-1 4.18)	± (0.5% + 0.05Ω) for ± 1% and below. ± (1% + 0.05Ω) for ± 5%.
g. Resistance to soldering heat	260±5°C for 5 seconds (According to IEC-60115-1 4.18)	± (0.5% + 0.05Ω) for ± 1% and below. ± (1% + 0.05Ω) for ± 5%.
Solderability	245±5°C for 3 seconds (According to IEC-60115-1 4.17)	>95%
Voltage Proof	1.42*RCWV (rms) for 1minute (According to IEC-60115-1 4.7)	No breakdown

Storage Conditions

Temperature– 25 ±3°C ; Humidity <80%RH

POWER DERATING CURVE

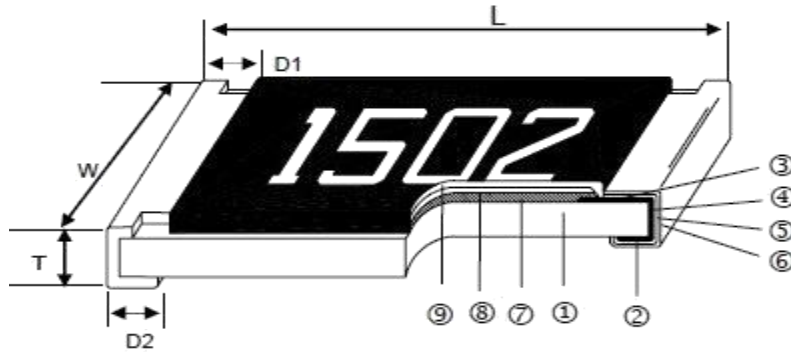


KWK RESISTORS INDIA



KCTK SERIES - THICK FILM CHIP RESISTORS - SURFACE MOUNT TYPE

RESISTANCE RANGE AND DIMENSIONAL DETAILS - STANDARD POWER



1. Alumina Substrate
2. Bottom Electrode (Ag)
3. Top Electrode (Ag-Pd)
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)

Note: All dimension are in mm.

Series	Rated Power @70°C	Operating Temp. Range	Max. Operating Voltage	Max Overload Voltage	Resistance Range	TCR (PPM/°C)	Size (inch)	L	W	T	D1	D2	Weight (g/1000pcs)
KCTK01005	1/32W	-55 to +125°C	15V	30V	10Ω-1MΩ	±300	01005	0.40 ±0.02	0.20 ±0.02	0.13 ±0.02	0.10 ±0.03	0.10 ±0.03	0.037
	Jumper 0.5A				0Ω(<50mΩ)	-							
KCTK0201	1/20W	-55 to +125°C	25V	50V	1Ω-10MΩ	±200	0201	0.60 ±0.03	0.30 ±0.03	0.23 ±0.03	0.15 ±0.05	0.15 ±0.05	0.150
	Jumper 1A				0Ω(<50mΩ)	-							
KCTK0402	1/16W	-55 to +155°C	50V	100V	1Ω-9.76Ω 10Ω-1MΩ 1.02MΩ-20MΩ 20.5MΩ-100MΩ	±200 ±100 ±200 ±400	0402	1.00 ±0.05	0.50 ±0.05	0.35 ±0.05	.20 ±0.1	0.20 ±0.1	0.620
	Jumper 1A				0Ω(<50mΩ)	-							
KCTK0603	1/10W	-55 to +155°C	75V	150V	1Ω-9.76Ω 10Ω-1MΩ 1.02MΩ-20MΩ 20.5MΩ-100MΩ	±200 ±100 ±200 ±400	0603	1.60 ±0.1	0.80 ±0.1	0.45 ±0.1	0.30 ±0.2	0.30 ±0.2	2.042
	Jumper 1A												
KCTK0805	1/8W	-55 to +155°C	150V	300V	1Ω-9.76Ω 10Ω-1MΩ 1.02MΩ-20MΩ 20.5MΩ-100MΩ	±200 ±100 ±200 ±400	0805	2.00 ±0.1	1.25 ±0.1	0.50 ±0.1	0.35 ±0.2	0.40 ±0.2	4.368
	Jumper 2A												
KCTK1206	1/4W	-55 to +155°C	200V	400V	1Ω-9.76Ω 10Ω-1MΩ 1.02MΩ-20MΩ 20.5MΩ-100MΩ	±200 ±100 ±200 ±400	1206	3.10 ±0.1	1.55 ±0.1	0.55 ±0.1	0.50 ±0.25	0.50 ±0.2	8.947
	Jumper 2A												
KCTK1210	1/3W	-55 to +155°C	200V	400V	1Ω-9.76Ω 10Ω-1MΩ 1.02MΩ-20MΩ 20.5MΩ-100MΩ	±200 ±100 ±200 ±400	1210	3.10 ±0.2	2.60 ±0.15	0.55 ±0.1	0.50 ±0.25	0.50 ±0.2	15.959
	Jumper 2.5A												
KCTK2010	3/4W	-55 to +155°C	200V	400V	1Ω-9.76Ω 10Ω-1MΩ 1.02MΩ-20MΩ 20.5MΩ-100MΩ	±200 ±100 ±200 ±400	2010	5.00 ±0.2	2.50 ±0.15	0.55 ±0.1	0.60 ±0.25	0.60 ±0.2	24.217
	Jumper 3.5A												
KCTK2512	1W	-55 to +155°C	250V	500V	1Ω-9.76Ω 10Ω-1MΩ 1.02MΩ-20MΩ 20.5MΩ-100MΩ	±200 ±100 ±200 ±400	2512	6.35 ±0.2	3.10 ±0.15	0.55 ±0.1	0.60 ±0.25	0.50 ±0.2	39.448
	Jumper 4A												

KWK RESISTORS INDIA



KCTK SERIES - THICK FILM CHIP RESISTORS - SURFACE MOUNT TYPE

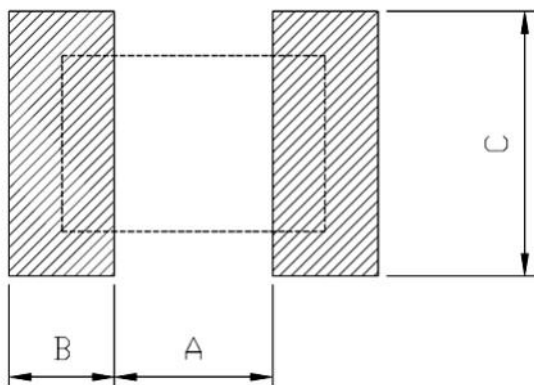
RESISTANCE RANGE AND DIMENSIONAL DETAILS - HIGH POWER

Series	Rated Power @70°C	Operating Temp. Range	Max. Operating Voltage	Max Overload Voltage	Resistance Range	TCR (PPM/°C)	Size (inch)	L	W	T	D1	D2	Weight g/1000pcs
KCTKH0402	1/8W	-55 to +155°C	50V	100V	1Ω-9.76Ω 10Ω-1MΩ 1.02MΩ-10MΩ	±200 ±100 ±200	0402	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.1	0.20±0.1	0.620
KCTKH0603	1/4W		50V	100V			0603	1.60±0.1	0.80±0.1	0.45±0.1	0.30±0.2	0.30±0.2	2.042
KCTKH0805	1/3W		150V	300V			0805	2.00±0.1	1.25±0.1	0.50±0.1	0.35±0.2	0.40±0.2	4.368
KCTKH1206 KCTKU1206	1/3W 1/2W		200V	400V			1206	3.10±0.1	1.55±0.1	0.55±0.1	0.50±0.25	0.50±0.2	8.947
KCTKH1210 KCTKU1210	1/2W 3/4W		200V	400V			1210	3.20±0.2	2.60±0.15	0.55±0.1	0.50±0.25	0.50±0.2	15.959
KCTKH2010	1W		200V	400V			2010	5.00±0.2	2.50±0.15	0.55±0.1	0.60±0.25	0.50±0.2	24.217
KCTKH2512	2W		250V	500V			2512	6.35±0.2	3.20±0.15	0.55±0.1	0.60±0.25	0.50±0.2	39.448

RESISTANCE RANGE AND DIMENSIONAL DETAILS - HIGH RESISTANCE VALUES

Series	Rated Power @70°C	Operating Temp. Range	Max. Operating Voltage	Max Overload Voltage	Resistance Range	TCR (PPM/°C)	Size (inch)	L	W	T	D1	D2	Weight g/1000pcs
KCTKR0805	1/8W	-55 to +155°C	150V	300V	110MΩ-500MΩ 510MΩ-1GΩ	±500 ±1000	0805	2.00±0.1	1.25±0.1	0.50±0.1	0.35±0.2	0.40±0.2	4.368
KCTKR1206	1/4W		200V	400V			1206	3.10±0.1	1.55±0.1	0.55±0.1	0.50±0.25	0.50±0.2	8.947

RECOMMENDED LAND PATTERN



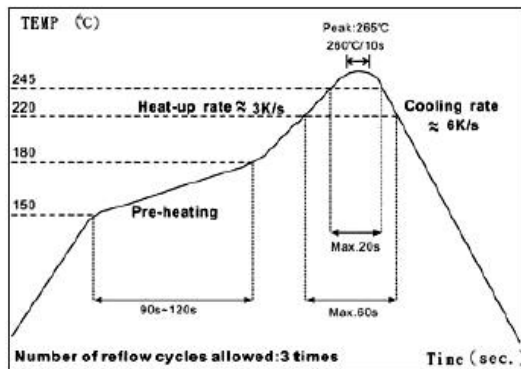
Series	A (mm)	B (mm)	C (mm)
KCTK 01005	0.14	0.18	0.25
KCTK 0201	0.30	0.25	0.30
KCTK/H 0402	0.50	0.45	0.60
KCTK/H 0603	0.90	0.60	0.90
KCTK/H/R 0805	1.20	0.70	1.30
KCTK/H/U/R 1206	2.00	0.90	1.60
KCTK/H/U 1210	2.00	0.90	2.80
KCTK/H 2010	3.80	0.90	2.80
KCTK/H 2512	3.80	1.60	3.50

KWK RESISTORS INDIA

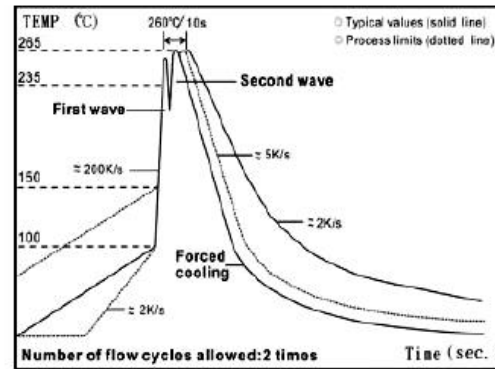


KCTK SERIES - THICK FILM CHIP RESISTORS - SURFACE MOUNT TYPE

SOLDERING CONDITION



IR Reflow Soldering



Wave Soldering (Flow Soldering)

- (1) Time of IR reflow soldering at maximum temperature point 260°C : 10s
- (2) Time of wave soldering at maximum temperature point 260°C : 10s
- (3) Time of soldering iron at maximum temperature point 410°C : 5s

ORDERING DETAILS

KCTKseries R T P TR

KCTK/H/U/R series	- Series Model #	(KCTK-Standard Power, KCTKH-High Power, KCTKR-High Resistance, KCTKU-Ultra High Power 0210,0402,0603,0805,1206,1210,2010,2512)
R	- Resistance Value	(e.g. 0R=0Ω (Jumper), 1R=1Ω, 5R2=5.2Ω, 1k=1kΩ, 1M=1MΩ)
T	- Tolerance Code	(±1% - F, ±5% - J)
P	- Packaging	(R: Paper/PE taping reel, K: Embossed taping reel)
TR	- Taping reel	(07: 7 inch dia reel, 10: 10 inch dia reel, 13: 13 inch dia reel)

Disclaimer: Product specifications, data and dimensions are subject to change without any prior notice to improve performance, reliability and design.

Example: KCTK0201 10R J R 07 - Standard power KCTK 1/20W 10R 5% with 7 inch dia Paper/PE taping reel .
KCTK0201 0R R 07 - Jumper 1Amps with 7 inch dia Paper/PE taping reel .

Please feel free to contact us for any assistance required to choose the right solution. We are also able to design Custom Resistive Solutions.

KWK Resistors India Pvt. Ltd.

Reg. Office: B-81, Industrial Estate, Rajajinagar, Bengaluru-560044.India
Works: #72, 3rd main, 2nd stage, Industrial suburb, Yeshwanthpur, Bengaluru-560022.India
Ph.:+91-80-23370038, Tele/Fax:+91-80-23370046 Email: contact@kwk-resistors.in



**BUREAU
VERITAS**