THE DATASHEET OF

KDV06DR560ET

KDV Series

Metal Film Low-Resistance Chip Resistor

FEATURES

- Low Resistance / TCR / Inductance
- Excellent long-term stability
- High precision current sensing
- High power capability
- Halogen free and lead free
- RoHs compliant

APPLICATIONS

- Consumer electronics
- Computer
- Telecom
- Measuring instrument
- Industrial / Power supply
- Battery management system

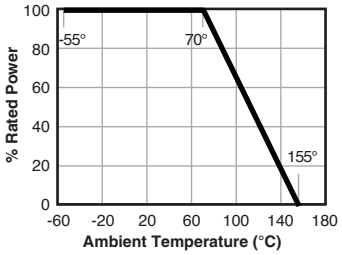
SERIES SPECIFICATIONS

Series	Size	Power @70°C	Max. Rated Current	Max. Overload Current	TCR (ppm/°C)	Resistance Range
KDV02	0201	1/10W	1.41A	3.16A		
KDV04	0402	1/8W	1.58A	3.54A	±100	50mΩ ~ 100mΩ
KDV06	0603	1/5W	2.00A	4.47A	±50	100mΩ ~ 1000mΩ
KDV08	0805	1/4W	2.24A	5.00A		
KDV12	1206	1/2W	3.16A	7.07A		

CHARACTERISTICS

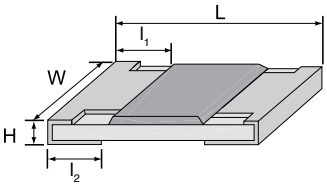
Operating Temp. Range	-55°C ~+155°C
Power rating and current rating	Based on continuous full-load at ambient temperature of 70°C
TCR	Test to - 55°C is available on request
Rated Current	Resistance Range: ≤1Ω. DC continuous working current or a AC (rms) continuous working current at commercial-line frequency and wave form corresponding to the power rating, as determined formula Rated current = √(Rated power/Resistance)
Storage	Storage time at environmental temp. 25°C ±5° & humidity 60 ±20% is valid for one year from the date of delivery

Derating



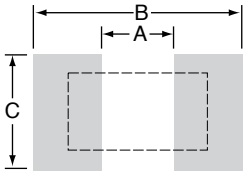
DIMENSIONS

(mm)



Size	L	W	H	I1	I2	A	B	C
KDV02	0.60 ±.03	0.30 ±.03	0.26 ±.05	0.15 ±.05	0.15 ±.05	0.25	0.85	0.35
KDV04	1.00 ±.10	0.50 ±.05	0.35 ±.05	0.20 ±.10	0.25 ±.10	0.50	1.60	0.70
KDV06	1.60 ±.10	0.80 ±.10	0.45 ±.10	0.25 ±.15	0.30 ±.15	0.80	2.40	1.00
KDV08	2.00 ±.10	1.25 ±.10	0.55 ±.10	0.35 ±.20	0.40 ±.20	1.30	2.90	1.45
KDV12	3.10 ±.10	1.60 ±.10	0.55 ±.10	0.40 ±.20	0.45 ±.20	2.20	4.20	1.80

Land pattern



KDV Series

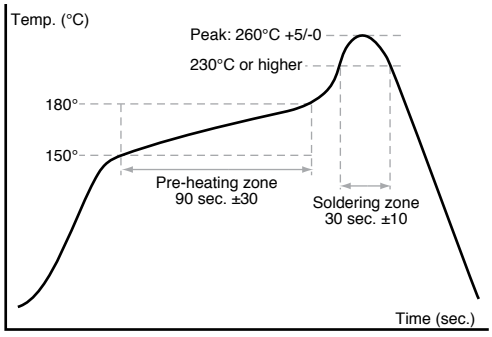
Metal Film Low-Resistance Chip Resistor

PERFORMANCE DATA

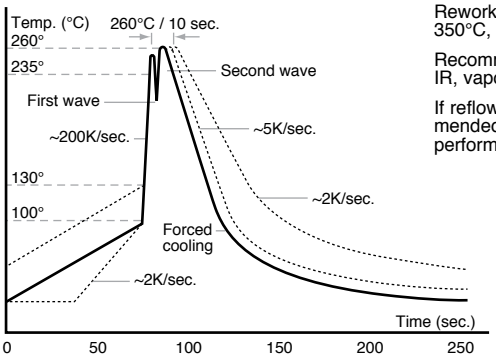
Test	Method	Procedure	Requirements
Temp. Coefficient of Resistance (T.C.R.)	JIS C 5201-1, clause 4.8	TCR +125°C, 25°C is the reference temperature	Refer to Standard Electrical Specifications
Short Time Overload	JIS C 5201-1, clause 4.13	Standard power: 6.25 times rated power whichever is less for 5 seconds High power (2X/4X): 5 times rated power whichever is less for 5 seconds.	±(1.0%+0.001Ω)
Insulation Resistance	JIS C 5201-1, clause 4.6	100V for 1 minute.	≥10GΩ
Solderability	JIS C 5201-1, clause 4.17	245 ±5°C for 3 ±0.5secs.	>95% Coverage, No visible damage
Resistance to Soldering Heat	JIS-C5201-1, clause 4.18	260 ±5°C for 10 seconds.	±(1.0%+0.001Ω), No visible damage
Leaching	JIS-C5201-1, clause 4.18	260 ±5°C for 30 seconds.	>95% Coverage, No visible damage
Temperature Cycling	JIS C 5201-1, clause 4.19	-55°C to +155°C, 300 cycles	±(1.0%+0.001Ω), No visible damage
High Temperature Exposure	JIS-C5201-1 4.25	155 ±5°C for 1000 +48/-0 hours.	±(1.0%+0.001Ω)
Resistance to Solvent	JIS C 5201-1, clause 4.29	The tested resistor be immersed into isopropyl alcohol of 20~25°C for 60 secs. Then the resistor is left in the room for 48 hrs.	±(1.0%+0.001Ω), No visible damage
Load Life in Humidity	JIS C 5201-1 clause 4.24	40±2°C, 90~95% R.H. , Rated power or Max. working current whichever is less for 1000 hrs with 1.5 hrs ON and 0.5 hr OFF.	±(1.0%+0.001Ω)
Load Life (Endurance)	JIS C 5201-1 clause 4.25	70±2°C, Rated power, or Max. working current whichever is less for 1000 hrs with 1.5 hrs ON and 0.5 hr OFF.	±(1.0%+0.001Ω)
Terminal Bending Strength	JIS C 5201-1, clause 4.33	Bending once for 5 seconds: 0402, 0603, 0805 = 5mm; 1206, 1210 = 3mm; 2010, 2512 = 2mm	±(1.0%+0.001Ω), No visible damage

SOLDERING

Wave solder



Solder reflow



Rework temperature (hot air equipment): 350°C, 3~5seconds

Recommended reflow methods: IR, vapor phase oven, hot air oven

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

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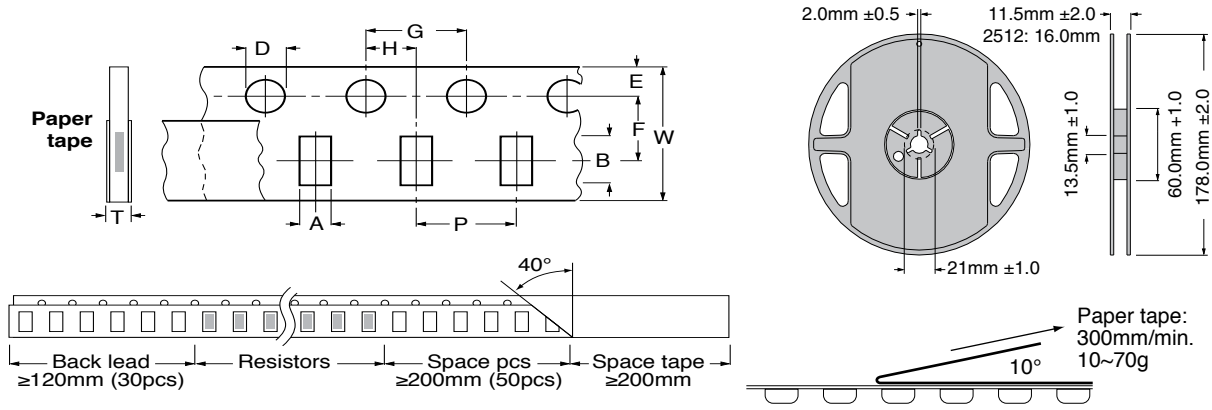
TAPE AND REEL

(mm)



Size	A	B	W	E	F	G	H	T	D	P	Qty. per reel
KDV02	0.45 ±.1	0.75 ±.1	8.0 ±.2	1.75 ±.1	3.5 ±.05	4.0 ±.1	2.0 ±.05	0.35 ±.1	1.50 +.1/-0	2.0 ±.1	10K
KDV04	0.7 ±.1	1.20 ±.1	8.0 ±.2	1.75 ±.1	3.5 ±.05	4.0 ±.1	2.0 ±.05	0.45 ±.1	1.50 +.1/-0	2.0 ±.1	10K
KDV06	1.05 ±.2	1.80 ±.2	8.0 ±.2	1.75 ±.1	3.5 ±.05	4.0 ±.1	2.0 ±.05	0.60 ±.1	1.50 +.1/-0	4.0 ±.1	5K
KDV08	1.55 ±.2	2.30 ±.2	8.0 ±.2	1.75 ±.1	3.5 ±.05	4.0 ±.1	2.0 ±.05	0.75 ±.1	1.50 +.1/-0	4.0 ±.1	5K
KDV12	1.90 ±.2	3.05 ±.2	8.0 ±.2	1.75 ±.1	3.5 ±.05	4.0 ±.1	2.0 ±.05	0.75 ±.1	1.50 +.1/-0	4.0 ±.1	5K

ORDERING INFORMATION

RoHS Compliant

K D V 0 6 D R 1 0 0 E T

KDV series	Size	Tolerance	Resistance	Tape and reel
	02 = 0201 04 = 0402 06 = 0603 08 = 0805 12 = 1206	D = 0.5% F = 1% G = 2% J = 5%		

Marking

Size	Resistance	Code	Example	Value
0201, 0402		no marking		
0603	50mΩ ~ 99mΩ	0XX	068	68mΩ
	100mΩ ~ 990mΩ	RXX	R68	680mΩ
	1000mΩ	1R0	1R0	1000mΩ
0805, 1206, 1210, 2010, 2512	50mΩ ~ 99mΩ (only for 0805,1206, 1210)	R0XX	R068	68mΩ
	100mΩ ~ 990mΩ	RXXX	R680	680mΩ
	1000mΩ	1R00	1R00	1000mΩ

Standard part numbers

Ohm Value	Size / Power / Tolerance / Part. No.	0201 0.10W 0.5% KDV02D-	0201 0.10W 1% KDV02F-	0402 0.125W 0.5% KDV04D-	0402 0.125W 1% KDV04F-	0603 0.20W 0.5% KDV06D-	0603 0.20W 1% KDV06F-	0805 0.25W 0.5% KDV08D-	0805 0.25W 1% KDV08F-	1206 0.5W 0.5% KDV12D-	1206 0.5W 1% KDV12F-
50mΩ	**-R050ET**		✔	✔	✔	✔	✔	✔	✔	✔	✔
68mΩ	**-R068ET**		✔	✔	✔	✔	✔	✔	✔	✔	✔
82mΩ	**-R082ET**		✔	✔	✔	✔	✔	✔	✔	✔	✔
100mΩ	**-R100ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
120mΩ	**-R120ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
150mΩ	**-R150ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
180mΩ	**-R180ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
200mΩ	**-R200ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
220mΩ	**-R220ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
240mΩ	**-R240ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
270mΩ	**-R270ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
300mΩ	**-R300ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
330mΩ	**-R330ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
360mΩ	**-R360ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
390mΩ	**-R390ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
470mΩ	**-R470ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
510mΩ	**-R510ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
560mΩ	**-R560ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
620mΩ	**-R620ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
820mΩ	**-R820ET**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

rev 1/21-2

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