

# 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

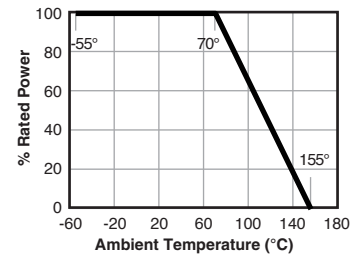
### SERIES SPECIFICATIONS

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

### CHARACTERISTICS

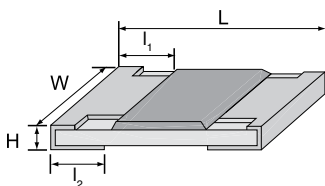
<b>Operating Temp. Range</b>	-55°C ~+155°C
<b>Power rating and current rating</b>	Based on continuous full-load at ambient temperature of 70°C
<b>TCR</b>	Test to - 55°C is available on request
<b>Rated Current</b>	Resistance Range: ≤1Ω. DC continuous working current or a AC (rms) continuous working current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

### Derating



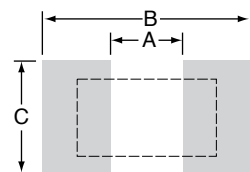
### DIMENSIONS

(mm)



Size	L	W	H	l1	l2	A	B	C
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

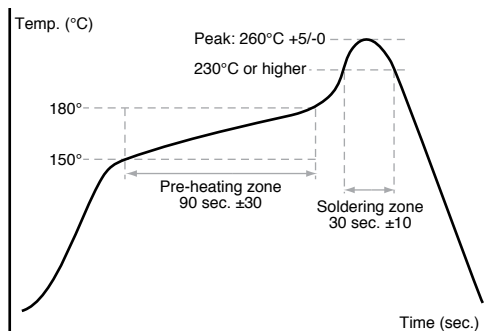
## Metal Film Low-Resistance Chip Resistor

### PERFORMANCE DATA

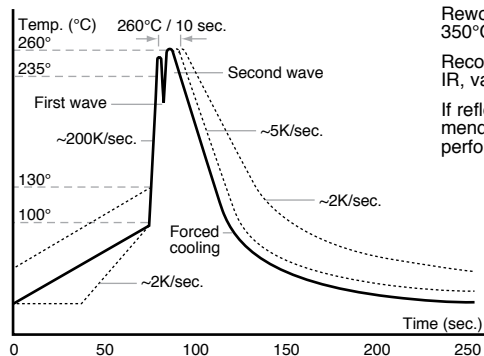
Test Method	Method	Procedure	Requirements
Temp. Coefficient of Resistance (T.C.R.)	JIS C 5201-1, clause 4.8	TCR +125°C, 25°C is the reference temperature	Refer to Standard Electrical Specifications
Short Time Overload	JIS C 5201-1, clause 4.13	Standard power: 6.25 times rated power whichever is less 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

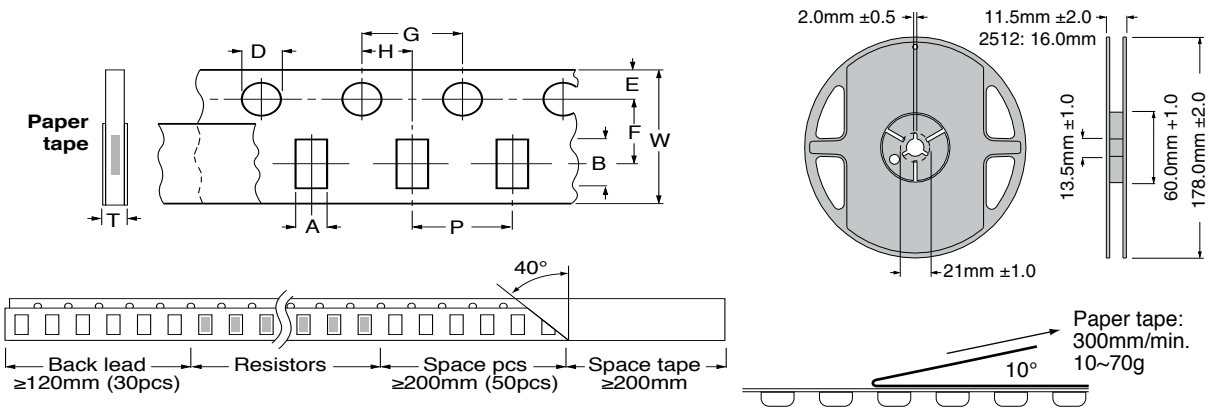
If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

# KDV Series

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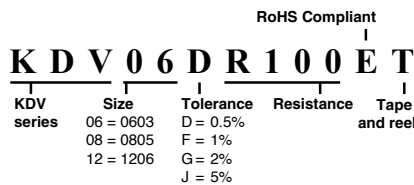
### TAPE AND REEL

(mm)



Size	A	B	W	E	F	G	H	T	D	P	Qty. per reel
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



#### Standard part numbers

0603 0.5% 0.20W	0603 1% 0.20W	0805 0.5% 0.25W	0805 1% 0.25W	1206 0.5% 0.5W	1206 1% 0.5W
KDV06DR100ET	KDV06FR100ET	KDV08DR100ET	KDV08FR100ET	KDV12DR100ET	KDV12FR100ET
KDV06DR120ET	KDV06FR120ET	KDV08DR120ET	KDV08FR120ET	KDV12DR120ET	KDV12FR120ET
KDV06DR150ET	KDV06FR150ET	KDV08DR150ET	KDV08FR150ET	KDV12DR150ET	KDV12FR150ET
KDV06DR180ET	KDV06FR180ET	KDV08DR180ET	KDV08FR180ET	KDV12DR180ET	KDV12FR180ET
KDV06DR200ET	KDV06FR200ET	KDV08DR200ET	KDV08FR200ET	KDV12DR200ET	KDV12FR200ET
KDV06DR220ET	KDV06FR220ET	KDV08DR220ET	KDV08FR220ET	KDV12DR220ET	KDV12FR220ET
KDV06DR240ET	KDV06FR240ET	KDV08DR240ET	KDV08FR240ET	KDV12DR240ET	KDV12FR240ET
KDV06DR270ET	KDV06FR270ET	KDV08DR270ET	KDV08FR270ET	KDV12DR270ET	KDV12FR270ET
KDV06DR300ET	KDV06FR300ET	KDV08DR300ET	KDV08FR300ET	KDV12DR300ET	KDV12FR300ET
KDV06DR330ET	KDV06FR330ET	KDV08DR330ET	KDV08FR330ET	KDV12DR330ET	KDV12FR330ET
KDV06DR360ET	KDV06FR360ET	KDV08DR360ET	KDV08FR360ET	KDV12DR360ET	KDV12FR360ET
0603 0.5% 0.20W	0603 1% 0.20W	0805 0.5% 0.25W	0805 1% 0.25W	1206 0.5% 0.5W	1206 1% 0.5W
KDV06DR050ET	KDV06FR050ET	KDV08DR050ET	KDV08FR050ET	KDV12DR050ET	KDV12FR050ET
KDV06DR068ET	KDV06FR068ET	KDV08DR068ET	KDV08FR068ET	KDV12DR068ET	KDV12FR068ET
KDV06DR082ET	KDV06FR082ET	KDV08DR082ET	KDV08FR082ET	KDV12DR082ET	KDV12FR082ET
KDV06DR390ET	KDV06FR390ET	KDV08DR390ET	KDV08FR390ET	KDV12DR390ET	KDV12FR390ET
KDV06DR470ET	KDV06FR470ET	KDV08DR470ET	KDV08FR470ET	KDV12DR470ET	KDV12FR470ET
KDV06DR510ET	KDV06FR510ET	KDV08DR510ET	KDV08FR510ET	KDV12DR510ET	KDV12FR510ET
KDV06DR560ET	KDV06FR560ET	KDV08DR560ET	KDV08FR560ET	KDV12DR560ET	KDV12FR560ET
KDV06DR620ET	KDV06FR620ET	KDV08DR620ET	KDV08FR620ET	KDV12DR620ET	KDV12FR620ET
KDV06DR820ET	KDV06FR820ET	KDV08DR820ET	KDV08FR820ET	KDV12DR820ET	KDV12FR820ET

#### Marking

Size	Resistance	Code	Example	Value
0402			no marking	
0603	50mΩ ~ 99mΩ	OXX	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