

RVK Series

4-Terminal Metal Alloy Current Sense SMD Resistor



FEATURES

- Low Resistance / Low TCR
- Excellent long term stability
- RoHs compliant and halogen free
- Lead free
- High precision current sensing
- 4-terminal design allows for 0.5% resistance tolerance down to 0.0005Ω
- Low thermal EMF (<3μV/°C)
- Very low inductance, 0.5nH to 5nH

APPLICATIONS

- Power supply
- Measuring instrument
- Industrial product
- Battery management system



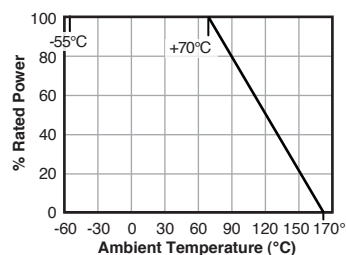
CHARACTERISTICS

Series	Power Rating @70°C (watts)	Max. Rating Current (amps)	Max. Overload Current (amps)	Resistance Range (mΩ)
RVK3637	3	77.46	173	0.5 - 6

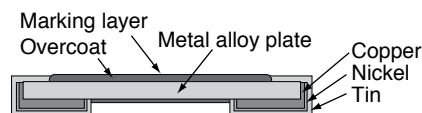
CHARACTERISTICS

Power Rating	3 watts
Oper. Temp. Range	-55°C to +170°C
Resistance Tolerance	0.5% (D), 1.0% (F), 2.0% (G), 5.0% (J)
Rating Current	$I = \sqrt{(P/R)}$ I = Rating current (A) P= Rating Power (W) R= Resistance(Ω) This equation may be used to determine the DC (Direct Current) or AC (Alternating Current) (RMS, root mean square value) of normal rated power. Ohms law value or max rating listed, whichever is smaller.
TCR	≤±50ppm/°C
Material	R0005: MnCuSn; R00075~R006: MnCu
Plating Thickness	Ni: ≥2μm; Sn(Tin): ≥3μm
Storage Temperature	25 ±5°C, Humidity 60 ±20%

Derating



Construction



(continued)

RVK Series

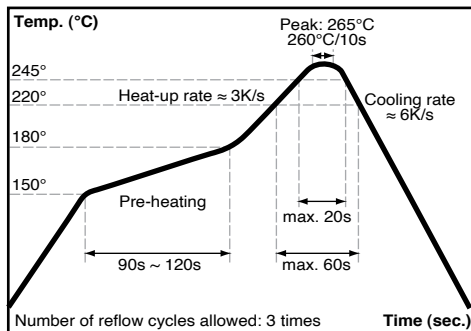
4-Terminal Metal Alloy Current Sense SMD Resistor

PERFORMANCE

Item	Test Method	Requirement
Temperature Coefficient of Resistance (T.C.R)	JIS-C-5201-1 4.8; IEC-60115-1 4.8; At 25°C/+150°C, 25°C is the reference temperature	As Spec
Short Time Overload	JIS-C-5201-1 4.13; IEC-60115-1 4.13; 5 times of rated power for 5 seconds	$R/R1 \leq \pm(0.5\%+0.0005\Omega)$
High Temperature Exposure	JIS-C5201-1 4.25; IEC 60068-2-2; At 170°C for 1000 hours.	$R/R1 \leq \pm(1.0\%+0.0005\Omega)$
Resistance to Soldering Heat	JIS-C-5201-1 4.18; IEC-60115-1 4.18; 260±5°C for 10 seconds.	$R/R1 \leq \pm(0.5\%+0.0005\Omega)$
Temperature Cycling	JESD22 Method; JA-104; 1000 Cycles (-55°C to +155°C) Measurement at 24±4 hours after test conclusion. 30min maximum dwell time at each temperature extreme.	$R/R1 \leq \pm(0.5\%+0.0005\Omega)$
Biased Humidity	MIL-STD-202 Method 103; 1,000 hours; 85°C / 85% RH, 10% of operating power. Measurement at 24±4 hours after test conclusion.	$R/R1 \leq \pm(0.5\%+0.0005\Omega)$
Load Life (Endurance)	JIS-C-5201-1 4.25; IEC-60115-1 4.25.1; 70±2°C, RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs ON and 0.5 hr OFF	$R/R1 \leq \pm(1.0\%+0.0005\Omega)$
Solderability	JIS-C-5201-1 4.17; IEC-60115-1 4.17; 245±5°C for 3 seconds.	>95% coverage
Dielectric Withstanding Voltage	JIS-C5201-1 4.7; Applied 500VAC for 1 minute.	No broken
Core Body Strength	JIS-C5201-1 4.15 Central part pressurizing force 5N, 10 seconds	$R/R1 \leq \pm(0.5\%+0.0005\Omega)$; No broken
Terminal Strength (SMD)	AEC Q200-006 Pressurizing force 17.7N for 60 seconds	$R/R1 \leq \pm(0.5\%+0.0005\Omega)$
Bending Strength	JIS-C-5201-1 4.33; IEC-60115-1 4.33; Bending once 2mm for 10 seconds	$R/R1 \leq \pm(0.5\%+0.0005\Omega)$
Moisture Resistance	MIL-STD 202 Method 106; T=24 hours/cycle, 10 cycles. Steps 7a & 7b not required; Unpowered	$R/R1 \leq \pm(0.5\%+0.0005\Omega)$

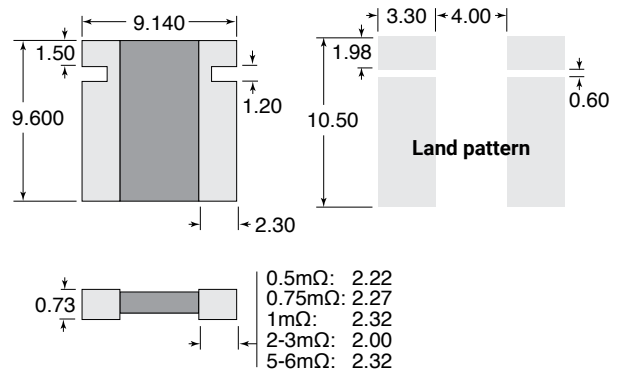
SOLDERING

IR Reflow Soldering

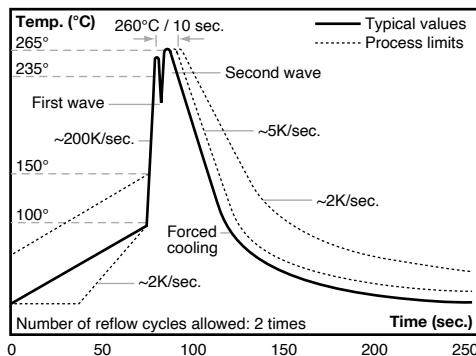


DIMENSIONS

(mm ±0.254)

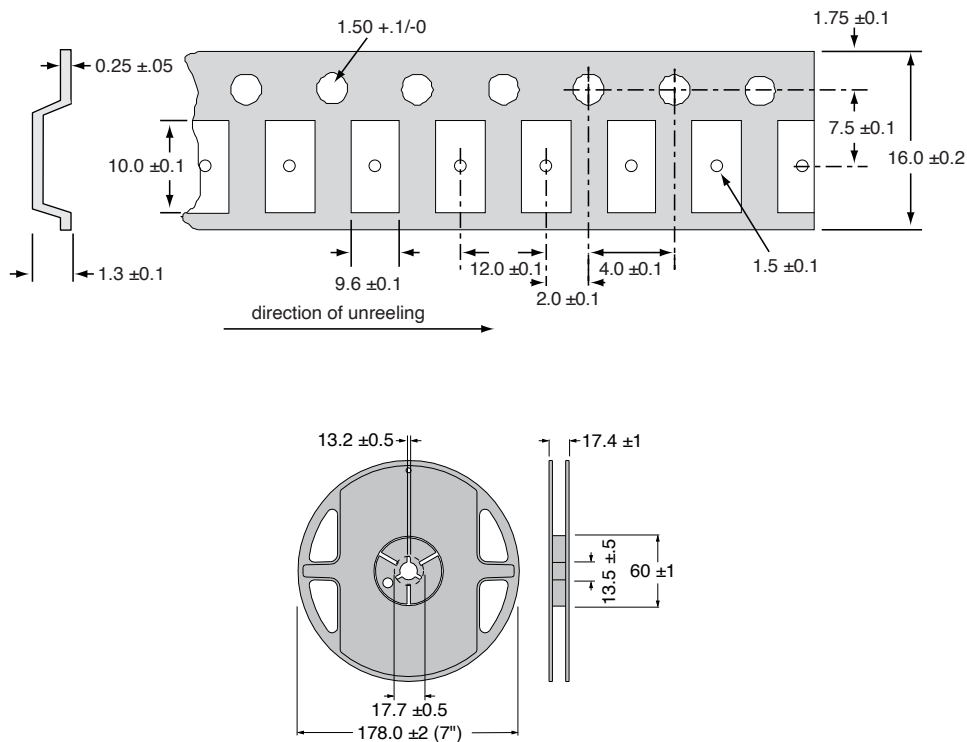


Wave Soldering (Flow Soldering)



4-Terminal Metal Alloy Current Sense Chip Resistor

(mm)



E = RoHS compliant

R V K 3 6 3 7 R 0 0 0 5 0 F E

RVK Series

Resistance
example:
R00050 = 0.00050Ω

Tolerance
D = 0.5%
F = 1%
G = 2%
J = 5%