



features

- Fixed metal film resistor available (specify “SPRX”)
- Flameproof silicone coating equivalent to (UL94V0)
- High reliability performance
- Suitable for automatic machine insertion
- Marking: Light green body color
Color-coded bands on 1/2W - 1W
Alpha-numeric black marking on 2W - 5W
- Products with lead-free terminations meet EU RoHS and China RoHS requirements
- Surface mount style “N” forming is suitable for automatic mounting

dimensions and construction



| Type | Dimensions inches (mm) | | | | |
|-------------------|-------------------------|----------------|------------------------|-------------------------|--------------------------|
| | L | C (max.) | D | d nominal | I* |
| SPR1/4 SPRX1/4 | .13±.012 (3.3±0.3) | .138 (3.5) | .067±.012 (1.7±0.3) | .018 (0.45) | .787 Min. (20.0 Min.) |
| SPR1/2 SPRX1/2 | .244±.02 (6.2±0.5) | .280 (7.1) | .098±.02 (2.5±0.5) | .024 (0.6) | .945 Min. (24.0 Min.) |
| SPR1 SPRX1 | .354±.039 (9.0±1.0) | .437 (11.1) | .138±.02 (3.5±0.5) | .031 (0.8) | |
| SPR2 SPRX2 | .472±.039 (12.0±1.0) | .591 (15.0) | .165±.031 (4.2±0.8) | | 1.18±.118 (30.0±3.0) |
| SPR3 SPRX3 | .610±.039 (15.5±1.0) | .709 (18.0) | .236±.039 (6.0±1.0) | 1.50±.118 (38.0±3.0) | |
| SPR5 SPRX5 | .965±.039 (24.5±1.0) | 1.10 (28.0) | .354±.039 (9.0±1.0) | | |

* Lead length changes depending on taping and forming type.

ordering information

| | | | | | | | |
|------------|-------------|---|---------------------------------|---|--|---|---|
| New Part # | SPR | 1/2 | C | T52 | R | 103 | J |
| Type | SPR SPRX | Power Rating 1/4: 0.25W 1/2: 0.5W 1: 1W 2: 2W 3: 3W 5: 5W | Termination Material C: SnCu | Taping and Forming Axial: T26, T52, T521, T631 Stand-off Axial: L52, L521, L631 Radial: VT, VTP, VTE, GT L, U, M, N Forming | Packaging A: Ammo R: Reel TEB: Embossed plastic (N forming) | Nominal Resistance ±2%, ±5%: 2 significant figures + 1 multiplier “R” indicates decimal on value <10Ω ±1%: 3 significant figures + 1 multiplier “R” indicates decimal on value <100Ω | Tolerance F: ±1% G: ±2% J: ±5% |

For further information on packaging, please refer to Appendix C.

applications and ratings

| Part Designation | Power Rating @ 70°C | Minimum Dielectric Withstanding Voltage | T.C.R. (ppm/°C) | Resistance Range E-24 (F±1%, G±2%) | Resistance Range E-24* (J±5%) | Absolute Maximum Working Voltage | Absolute Maximum Overload Voltage | Operating Temperature Range |
|------------------|---------------------|---|-----------------|------------------------------------|-------------------------------|----------------------------------|-----------------------------------|-----------------------------|
| SPR1/4 | 0.25W | 300V | ±350 | — | 2.2Ω - 10KΩ | 250V | 500V | -55°C to +200°C |
| SPR1/2 | 0.5W | 500V | | 10Ω - 91KΩ | 2.2Ω - 91KΩ | 400V | 800V | |
| SPR1 | 1W | | | | 2.2Ω - 91KΩ | 500V | 1000V | |
| SPR2 | 2W | 2.2Ω - 91KΩ | | | | | | |
| SPR3 | 3W | 2.2Ω - 91KΩ | | | | | | |
| SPR5 | 5W | 800V | | | 10Ω - 100KΩ | 2.2Ω - 110KΩ | 600V | |
| SPRX1/4 | 0.25W | 300V | | — | 0.1Ω - 2.0Ω | $E = \sqrt{P \times R}$ | $E \times 2.5$ | |
| SPRX1/2 | 0.5W | 500V | | | | | | |
| SPRX1 | 1W | | | | | | | |
| SPRX2 | 2W | | | | | | | |
| SPRX3 | 3W | | | | | | | |
| SPRX5 | 5W | 800V | | | | | | |

* High values may have electric corrosion. KOA recommends the RCR series.

environmental applications

Derating Curve



Surface Temperature Rise



Load Life @ 70°C, 1000 Hr



For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the above derating curve.

Performance Characteristics

| Parameter | Requirement $\Delta R \pm(\% + 0.05\Omega)$ | | Test Method |
|-----------------------------|---|-----------------------------|---|
| | Limit | Typical | |
| Resistance | Within specified tolerance | — | Measuring points are at 10mm ±1mm from the end cap. |
| T.C.R. | Within specified T.C.R. | — | Room temperature +100°C |
| Overload (Short time) | $\pm(1\%+0.1\Omega)$ | $\pm 0.5\%$ | Rated voltage x 2.5 or max. overload voltage for 5 seconds, whichever is lower |
| Resistance to Solder Heat | $\pm 1\%$ | $\pm 0.5\%$ | 260°C $\pm 5^\circ\text{C}$, 10 seconds ± 1 second |
| Terminal Strength | No lead-coming off and loose terminals | — | Twist 360°C, 5 times |
| Rapid Change of Temperature | $\pm 1\%$ | $\pm 0.5\%$ | -55°C (30 minutes), +155°C (30 minutes), 5 cycles |
| Moisture Resistance | $\pm(3\%+0.1\Omega)$:1/4W-2W $\pm(5\%+0.1\Omega)$:3W,5W | 1.5: 1/4W-2W 2.5: 3W, 5W | 40°C $\pm 2^\circ\text{C}$, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle |
| Endurance at 70°C | $\pm(3\%+0.1\Omega)$:1/4W-2W $\pm(5\%+0.1\Omega)$:3W,5W | 1.5: 1/4W-2W 2.5: 3W, 5W | 70°C $\pm 2^\circ\text{C}$, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle |
| Resistance to Solvent | No abnormality in appearance. Marking shall be easily legible | — | Ultrasonic washing with isopropyl alcohol for 2 minutes. Power: 0.3W/cm ³ , f: 28kHz, Temp: 35°C $\pm 5^\circ\text{C}$ |
| Flame Retardant | No evidence of flaming or self-flaming | — | Flame test: the test flame shall be applied and removed for each 15 seconds respectively to repeat the cycle 5 times. Overload flame retardant: power (AC) corresponding to 2, 4, 8, 16 and 32 times the power rating shall be applied for each 1 minute until disconnection occurs. However the applied voltage shall not exceed the value of 4 times of the maximum operating voltage |

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

12/18/12

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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