

SMD Power Resistors

Specifications



| Type | | RWN 5020 | RWC 5020 |
|---|---|--|--|
| Styles | | | 5020 |
| Dimensions | mm | non inductive, no winding | wirewound on ceramic |
| Power rating $\vartheta_0 = 200^{\circ}\text{C}$ | W | | P_{25} 2,2 P_{40} 2,0 P_{70} 1,6 |
| Single pulse | $I_{i, \max}$ $E_{i, \max}$ $T_{\text{imp, max}}$ | A mWs ms | 50 625 5 |
| periodic pulse load | i_{\max} $E_{i, \text{per, max}}$ $t_{\text{imp, max}}$ t_{pause} | A mWs ms ms | 30 (R002 ... R018) 40 (R022 ... R05) 225 5 100 |
| Tolerance | % | 1, 5 (F, J) | 1, 5 (F, J) |
| Resistance range | Ω | 0R002 ... 0R05 | 0R01 ... 220R |
| Temperature coefficient | ppm K^{-1} | see diagram | see next page |
| E-Series | | 0R002, 0R003, 0R005, \geq 0R01: E 12 | E 12 |
| | | diverging values on request | |
| max. cont. work. voltage | V_{RMS} | | $\sqrt{P \cdot R}$ |
| Thermal resistance | K/W | | 100 ¹⁾ |
| Insulation voltage (1 min.) | V_{RMS} | | 1000 |
| Insulation resistance | | | > 1000M Ω |
| Climatic category | | | 55/175/56 |
| Temperature range | $^{\circ}\text{C}$ | | -55 ... 200 |
| Endurance (P_{70} , 70 $^{\circ}\text{C}$, 1000h) | $\left[\frac{\Delta R}{R}\right] \%$ | | $\leq 1,0$ |
| Damp heat, steady state | $\left[\frac{\Delta R}{R}\right] \%$ | | $\leq 0,25$ |
| Resistance to soldering heat | $\left[\frac{\Delta R}{R}\right] \%$ | | $\leq 0,25$ |
| Short time overload ($5 * P_{70}/5\text{sec}$) | $\left[\frac{\Delta R}{R}\right] \%$ | | $\leq 1\%$ |
| Temperature shock | | | $\leq 0,25$ |
| Board-bending-test | | | no interruption |
| Solderability | | suitable for wave and reflow soldering in acc. with CECC 00802 | |

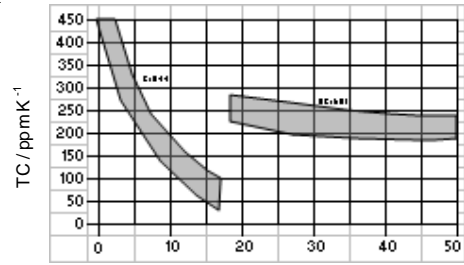
¹⁾ Thermal data according to DIN 44050 with solder pads as on next page.

Temperature coefficient:

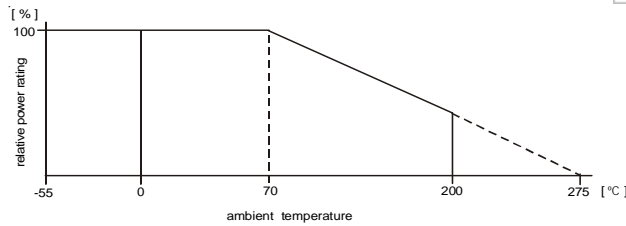
Range (RWC 5020)

| | | |
|---------|-------|----------------|
| ≥ 0R01 | 0R024 | 400 ± 50 ppm/K |
| ≥ 0R027 | 0R091 | ≈ + 180 ppm/K |
| ≥ 0R1 | 15R | 0 ± 20 ppm/K |
| ≥ 16R | 220R | 0 ± 10 ppm/K |

TC - Diagram (RWN 5020)



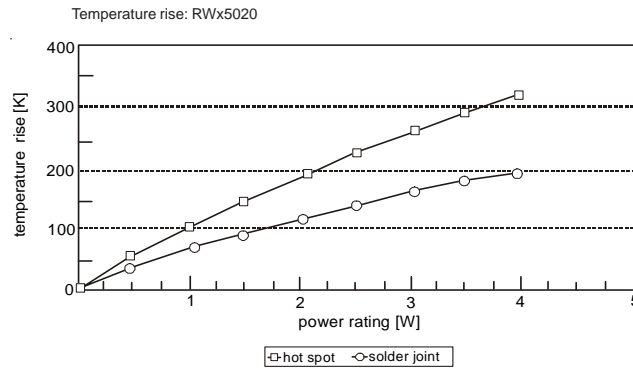
Derating:



Resistance Value in mOhm

Temperature Range -55 +200°C

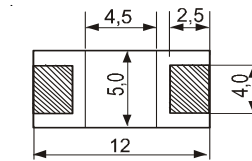
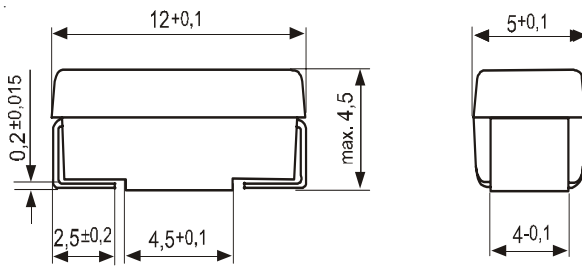
Temperature rise:



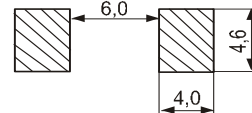
Part mounted on FR 4, pads as recommended, copper layer 35 µm

recommended solder pads:

Dimensions:



Bottom view



Solder pads

Marking: Resistor: printed in clear: Type - Value - Tolerance

Packaging: additional Batch-No. - Production date

Packaging: blistertape 24 mm antistatic / 1500 pcs. on reel 330 mm Ø

Ordering example: RWC 5020 F K - 13 1R
 Type tolerance blister tape reel TC reel diameter R-value

SMD Power Metal film resistors

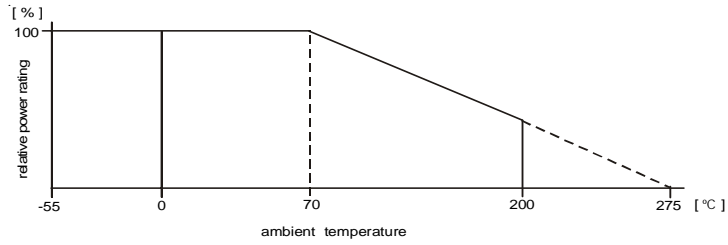
Specifications



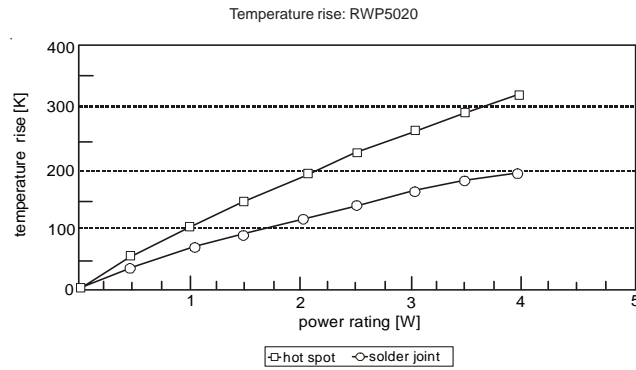
| Type | RWP 5020 | |
|---|-------------------------------------|---|
| Style | | 5020 |
| Power rating $\vartheta_0 = 200^\circ\text{C}$ | W | P_{25} 2,2 P_{40} 2,0 P_{70} 1,6 higher power depends on mounting technology |
| Tolerance | % | 1 (F) 5 (J) |
| Resistance range | Ω | 10R ... 1M 1R0 ... 1M |
| Temperature coefficient | ppm K ⁻¹ | ± 50 ± 200 |
| E-Series | | E 96 E 12 preferred |
| max. cont. work. voltage | V_{RMS} | 500 |
| Thermal resistance | K/W | 90 ¹⁾ |
| Insulation voltage (1 min.) | V_{RMS} | 1000 |
| Insulation resistance | | > 1000M Ω (dry) |
| Climatic category | | 55/175/56 |
| Temperature range | $^\circ\text{C}$ | -55 ... 200 |
| Endurance (P_{70} , 70 $^\circ\text{C}$, 1000h, intermed.) | $\left[\frac{\Delta R}{R}\right]$ % | $\leq 1,5$ |
| Damp heat, steady state | $\left[\frac{\Delta R}{R}\right]$ % | $\leq 1,5$ |
| Resistance to soldering heat | $\left[\frac{\Delta R}{R}\right]$ % | $\leq 0,25$ |
| Short time overload (5 * P_{70} /2sec) | $\left[\frac{\Delta R}{R}\right]$ % | $\leq 1\%$ |
| Temperature shock | | $\leq 0,25$ |
| Board-bending-test | | no interruption |
| Solderability | | suitable for wave and reflow soldering in acc. with CECC 00802 |

¹⁾ Thermal data according to DIN 44050 with solder pads as on next page.

Derating:

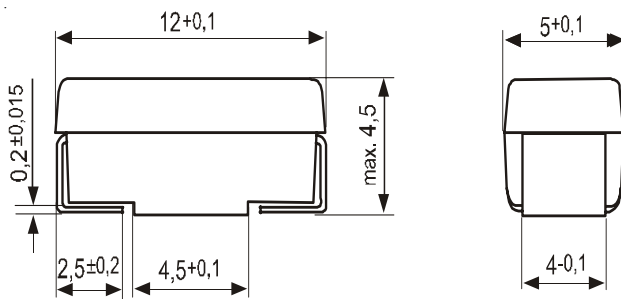


Temperature rise:

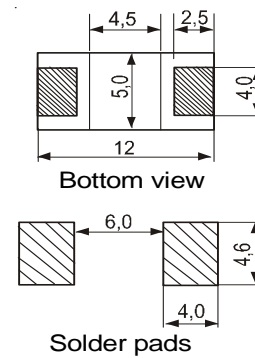


Part mounted on FR 4, pads as recommended, copper layer 35 μm

Dimensions in mm:



recommended solder pads:



Marking: Resistor: Printed in clear: Type - Value - Tolerance
 Package additional Batch-Nr. - Production date

Packaging: Blister tape 24 mm antistatic / 1.500 pcs on reel 330 mm Ø

Ordering example: RWP 5020 F K - 13 10K
 Type Tolerance blister tape reel TC reel diameter R-value

Revision 200807