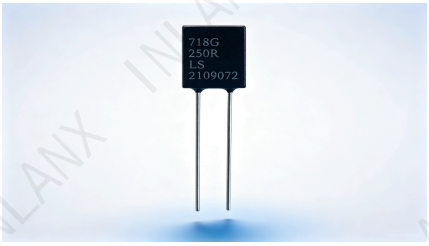
RJ711 (RCK) Precision Alloy-Foil Resistors

RJK711, RJ711 (RCK), RII-18 Series

Product Overview

The production line for RJK711 precision alloy-foil fixed resistors with established reliability has passed Chinese military-standard certification. The products are quality-certified to GJB1862-1994.
RJ711 (RCK) and RII-18 high-precision alloy-foil fixed resistors use the resistance-strain principle to automatically compensate temperature effects, giving low temperature dependence over a wide range. Precision-rolled nickel-chromium alloy foil and a planar resistive element provide accurate, stable and reliable resistance with good high-frequency performance. Their specifications exceed those of wirewound and metal-film resistors.
Applications include aerospace and marine inertial navigation, power-distribution control and precision measurement: current/voltage comparison standards, constant-current/constant-voltage circuits, shunt and voltage-divider ratio networks, and D/A and A/D networks.



Military Electronic Components Quality Certification Mark

Technical Standards

GJB1862-1994: General specification for precision fixed resistors with established reliability.

ZZR-Q/RV20052-2002: RJK711 detailed specification (enterprise military standard).

Q/RV20037-2011: (G, G+) RJ711 (RCK) detailed specification (enterprise military standard).

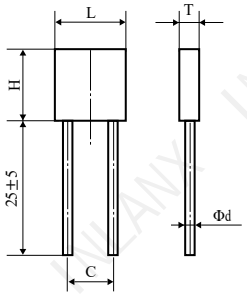
Q/RV159-2011: RJ711 (RCK) detailed specification (enterprise standard).

Q/QJA20089/5-2021 (WS): RJ711 (RCK) detailed specification for space applications.

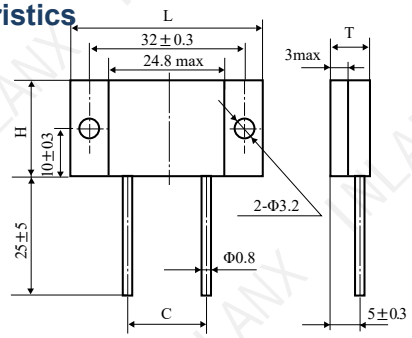
Q/RV20008-1993: RII-18 detailed specification (enterprise military standard).

Dimensions and Characteristics

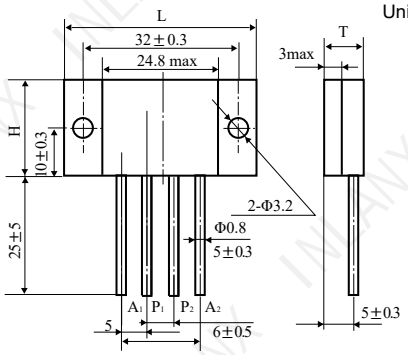
Unit: mm



RJK711, RJ711 (RCK)



RII-18



RII-18 (four terminals)

Model		RJK711	RJ711 (RCK)								RII-18
			A	D	A	E	02A	A	A	04	06	
Dim. (mm)	L	10.0±0.2	8.2 +1.0 −0.2	7.8 +0.8 −0.2	10.0 +1.0 −0.2	7.8 +0.8 −0.2	7.8 +0.8 −0.2	16.0 +1.0 −0.3	19.0 +1.0 −0.3	15.0 +1.0 −0.2	30.3 +1.0 −0.3	40.0±0.5
	H	10.0 +1.0 −0.2	8.2 +1.0 −0.2	8.3 +0.8 −0.2	10.0 +1.0 −0.2	8.3 +0.8 −0.2	8.3 +0.8 −0.2	16.0 +1.0 −0.3	19.0 +1.0 −0.3	11.0 +1.0 −0.2	10.5 +1.0 −0.3	20.0±0.5
	T	3.5±0.2	3.5 +0.9 −0.3	3.0 +0.9 −0.3	3.5 +0.9 −0.3	3.0 +0.9 −0.3	3.0 +0.9 −0.3	3.5 +0.9 −0.3	4.0 +0.9 −0.3	3.5 +0.9 −0.3	6.3 +0.9 −0.3	7.0±0.3
	C	7.5±1.0	6.0±1.0	4.1±0.5	8.0±1.0	4.1±0.5	4.1±0.5	10.2±1.0	12.3±1.0	10.2±0.7	22.5±1.0	16.0±0.5
	d±0.05	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.8	0.6	0.8	0.8
Rated power (W)		0.25(85℃)	0.125(70℃)		0.25(70℃)		0.5(70℃)		1(70℃)		1.5(70℃)	2(70℃)
Resistance (Ω)		1~20k	0.5~10k		0.5~20k						1~20k	10~75
Tolerance (%)	≤5Ω	B (±0.1%)										
	> 5Ω	L(±0.01%) P (±0.02%) W (±0.05%) B (±0.1%)										
TCR (10^-6/K)	≤1Ω	B, C (Note)	±20(P)									
	> 1Ω		±5(S) ±10(R) ±15(Q) ±20(P)									
Operating temp. (°C)		-65~125	-55~125									
Note: RJK711 military-standard resistors: TCR B = ±5 × 10^-6/K; C = ±10 × 10^-6/K.												

YC / CAST Grade Supply Parameters

Model		RJK711	RJ711（RCK）			
Procurement specification		CASTPS01/014-2006	CASTPS01/015-2006 Q/QJA20089/5-2021(WS)			
Rated power (W)		0.25	0.125	0.25	0.5	1
Resistance (Ω)		1~20k	1~10k	1~20k		
Tolerance (%)	≤ 5Ω	B(±0.1)、D（±0.5）	W(±0.05)			
	> 5Ω	L(±0.01)、P(±0.02)、W(±0.05)、B(±0.1)	L(±0.01)、P(±0.02)、W(±0.05)			
TCR (10^-6/K)	≤ 1Ω	±5(B)、±10(C)	±20(P)			
	> 1Ω		±5(S)、±10(R)、±15(Q)、±20(P)			

SAST Grade Supply Parameters

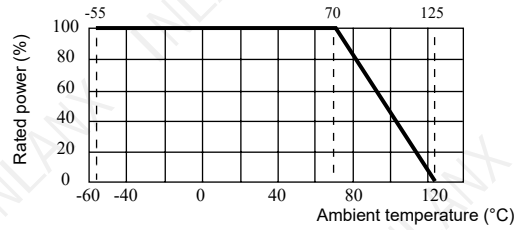
Model		RJ711（RCK）									RJK711
Procurement spec.		SASTYPS0501/0015-2015									SASTYPS0501/0016-2015
Rated power (W)		0.125		0.25		0.5		1		1.5	2	0.25
		A	D	A	E	A	02A	A	04	06		
Resistance (Ω)		0.5~10k		0.5~20k						1~20k	0.5~10k	1~20k
Tolerance (%)	≤ 5Ω	B(±0.1)、F(±1)										B(±0.1)、C(±0.25)、D(±0.5)、F(±1)
	> 5Ω	L(±0.01)、P(±0.02)、W(±0.05)、B(±0.1)、F(±1)										L(±0.01)、P(±0.02)、W(±0.05)、B(±0.1)
TCR (10^-6/K)	≤ 1Ω	±20(P)										±5(B)、±10(C)
	> 1Ω	±5(S)、±10(R)、±15(Q)、±20(P)										

LMS Grade Supply Parameters

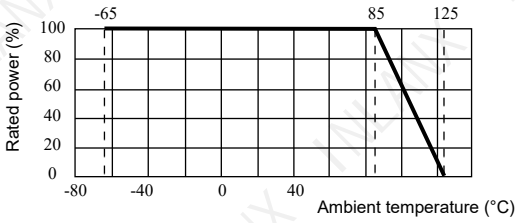
Model		RJ711(RCK)			
Procurement spec.		GJB1862-1994 （LMS304-2005）Q/RV20058-2002			
Rated power (W)		0.125	0.25	0.5	1
Resistance (Ω)		1~10k	1~20k		
Tolerance (%)	≤ 5Ω	B(±0.1)			
	> 5Ω	L(±0.01)、P(±0.02)、W(±0.05)、B(±0.1)			
TCR (10^-6/K)	≤ 1Ω	±10(C)			
	> 1Ω	B：±5、C：±10、F：±5(-15℃、65℃)、±10（-55℃、125℃）			

Derating Curves

Derate RJ711 and RII-18 resistors as shown below when ambient temperature exceeds 70°C.



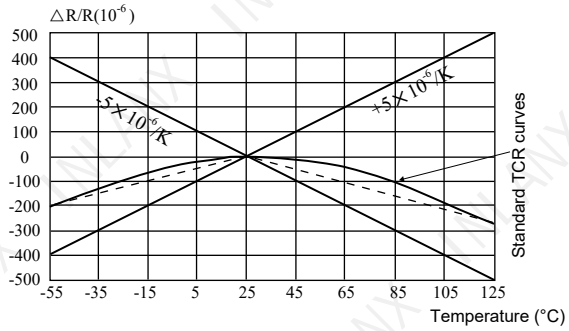
Derate RJK711 resistors as shown below when ambient temperature exceeds 85°C.



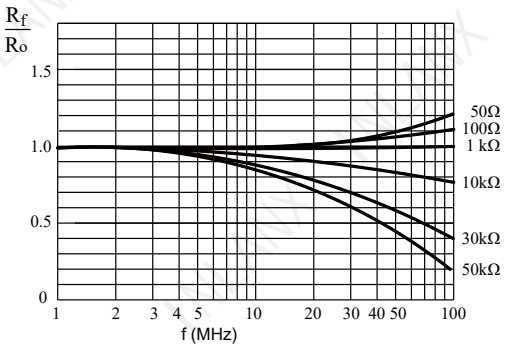
Performance Characteristics

Distributed capacitance <0.5 pF; inductance <0.8 μH.

Time constant <1 × 10^-9 s; annual stability ≤0.005%.



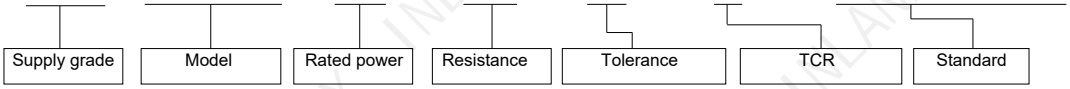
Typical Resistance-Temperature Curves



Frequency Characteristic Curves

Ordering Examples

RJK711 - 0.25 W - 500 Ω - L - B - GJB1862-1994
"G" RJ711-E - 0.25 W - 500 Ω - W - R - Q/RV20037-2011
"J" RII-18 - 2 W - 75 Ω - W - R - Q/RV20008-1993
"YC" RJ711-E - 0.25 W - 500 Ω - L - S - Q/QJA20089/5-2021 (WS)
"CAST" RJK711 - 0.25 W - 500 Ω - L - B - CASTPS01/014-2006
"CAST" RJ711 - 0.25 W - 500 Ω - L - S - CASTPS01/015-2006



Notes

1. Also available in G+, G, J and industrial grades. Specify the required grade in the order contract.

2. A small 8 × 8 × 2.5 mm case is available for 0.125 W products. Specify "small size 8 × 8 × 2.5 mm" when ordering.

3. RJ711 values below 1 Ω with TCR requirements ≤±20 × 10^-6/K are available by agreement.

4. On request, RJ711 0.125 W, 0.25 W, 0.5 W and 1 W, and RII-18 resistors can be made with four leads. Specifications follow the corresponding two-lead product. Specify "two leads" or "four leads" on the order. A1/A2 are current terminals; P1/P2 are potential terminals.

5. For accurate DC resistance measurement, use a digital meter with at least 7½ digits and the four-terminal method.

6. For mounting precautions, see Appendix - Resistor Application Guide, pages 144-147.