

Datasheet

RS Pro RS Series Thick Film Surface Mount Resistor 0805 Case $309k\Omega$ ±1% 0.125W ±100ppm/°C

RS Stock No: 717-3240



Product Details

RS Pro 0805 thick film surface mount resistor with $\pm 1\%$ tolerance, provides 309 k Ω resistance and is power rated at 0.125 W. The temperature coefficient of resistance is ± 100 ppm/°C. Applications include telecommunication equipment, radio and tape recorders, TV tuners, video cameras, watches, pocket calculators, automotive industry, computers, instruments, medical and military equipment.

Features and Benefits

- Small size and lightweight
- Highly reliable multilayer electrode construction
- Compatible with all soldering process





Specifications:

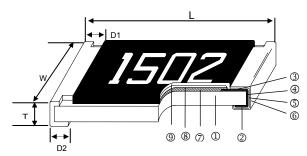
Case Style	Ruthenium Oxide
Depth	1.25 mm
Dimensions	2 x 1.25 x 0.5 mm
Height	0.5 mm
Length	2 mm
Maximum Operating Temperature	+155°C
Maximum Temperature Coefficient	+100 ppm/°C
Minimum Operating Temperature	-55°C
Minimum Temperature Coefficient	-100 ppm/°C
Package/Case	0805
Power Rating	0.125 W
Resistance	309 kΩ
Technology	Thick Film
Temperature Coefficient	±100 ppm/°C
Termination Style	Solder Pad
Tolerance	±1%
Maximum Operating Voltage	150 V
Maximum Overload Voltage	300 V
Tape Width	8 mm



Thick Film Chip Resistor 1% - RS Series

0201/0402/0603/0805/1206

■Construction



1	Alumina Substrate	4	Edge Electrode (NiCr)	7	Resistor Layer (RuO ₂ /Ag)
2	Bottom Electrode (Ag)	(5)	Barrier Layer (Ni)	8	Primary Overcoat (Glass)
3	Top Electrode (Ag-Pd)	6	External Electrode (Sn)	9	Secondary Overcoat (Epoxy)

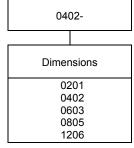
■Dimensions

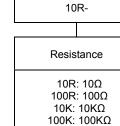
Unit: mm

	Difficultions										
Type	Size (Inch) L				т	D1	D2	Weight (g) (1000pcs)			
RS-0201	0201	0.60±0.03	0.30±0.03	0.23±0.03	0.15±0.05	0.15±0.05	0.150				
RS-0402	0402	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.10	0.20±0.10	0.620				
RS-0603	0603	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.20	0.30±0.20	2.042				
RS-0805	0805	2.00±0.10	1.25±0.10	0.50±0.10	0.35±0.20	0.40±0.20	4.368				
RS-1206	1206	3.10±0.10	1.55±0.10	0.55±0.10	0.50±0.25	0.50±0.20	8.947				

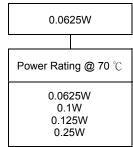
■Part Numbering







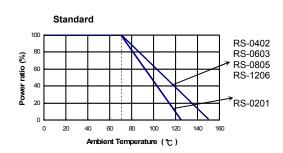






■Derating Curve

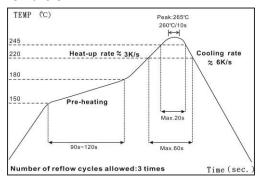
ENGLISH

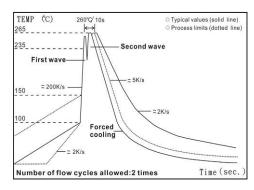


■Standard Electrical Specifications

Item	Power Rating at 70°C Jumper	Operating Temp. Range	Max. Operating	Max. Overload	Resistance Range	TCR (PPM/°C)	
Туре	Rated Current	3.33	Voltage	Voltage	±1%	7	
RS-0201	1/20W	-55 ~ +155°C	25V	50V	10Ω – 910ΚΩ	±200	
RS-0402	1/16W	-55 ~ +155°C	50V	100V	10Ω – 910ΚΩ	±100	
RS-0603	1/10W	-55 ~ +155°C	75V	150V	10Ω – 910ΚΩ	±100	
RS-0805	1/8W	-55 ~ +155°C	150V	300V	10Ω – 910ΚΩ	±100	
RS-1206	1/4W	-55 ~ +155°C	200V	400V	10Ω – 910ΚΩ	±100	

■Soldering Condition





IR Reflow Soldering

Wave Soldering (Flow Soldering)

- (1) Time of IR reflow soldering at maximum temperature point 260°C: 10s
- (2) Time of wave soldering at maximum temperature point 260°C: 10s
- (3) Time of soldering iron at maximum temperature point 410°C: 5s



■Environmental Characteristics

Itama	Requirement	Took Mathad				
Item	±1%	Test Method				
Temperature Coefficient of	As Spec.	JIS-C-5201-1 4.8 IEC-60115-1 4.8				
Resistance (T.C.R.)	ne opec.	-55°C~+125/+155°C, 25°C is the reference temperature				
		JIS-C-5201-1 4.13 IEC-60115-1 4.13				
Short Time Overload	±(1.0%+0.05Ω)	RCWV*2.5 or Max. overload voltage for 5 seconds, 2 seconds for high power series				
Insulation Resistance	≥10G	JIS-C-5201-1 4.6 IEC-60115-1 4.6				
		Max. overload voltage for 1 minute				
	. (0.00(.0.400)	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1				
Endurance	±(2.0%+0.10Ω)	$70\pm2^{\circ}\text{C}$, Max. working voltage for 1000 hrs with 1.5 hrs "ON and 0.5 hrs "OFF"				
		JIS-C-5201-1 4.24				
Damp Heat with Load	±(2.0%+0.10Ω)	$40\pm2^{\circ}\text{C}$, $90\sim95\%$ R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"				
Dry Heat	±(1.0%+0.05Ω)	JIS-C-5201-1 4.23 IEC-60115-1 2.23.2				
	_(, 6 0.0012)	at +125/+155°C for 1000 hrs				
		JIS-C-5201-1 4.33 IEC-60115-1 4.33				
Bending Strength	$\pm (1.0\% + 0.05\Omega)$	Bending once for 5 seconds				
		2010, 2512 sizes: 2mm Other sizes: 3mm				
Solderability	95% min. coverage	JIS-C-5201-1 4.17 IEC-60115-1 4.17				
•		245±5°C for 3 seconds				
Resistance to Soldering Heat	±(0.5%+0.05Ω)	JIS-C-5201-1 4.18 IEC-60115-1 4.18				
G	,	260±5°C for 10 seconds				
Voltage Proof	No breakdown or flashover	JIS-C-5201-1 4.7 IEC-60115-1 4.7				
	The state of the s	1.42 times RCWV (RMS) for 1 minute				
Leaching	Individual leaching area □5%	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1				
.	Total leaching area □ 10%	260±5°C for 30 seconds				
Rapid Change of Temperature	±(0.5%+0.05Ω)	JIS-C-5201-1 4.18 IEC-60115-1 4.18				
,	(-55°C to +125/+155°C, 5 cycles				

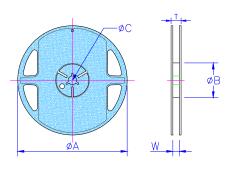
■ Storage Temperature: 25±3°C; Humidity < 80%RH



■Packaging

Reel Specifications & Packaging Quantity

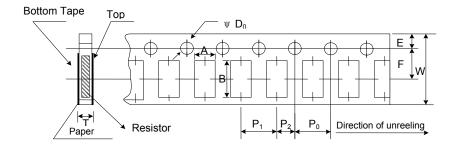




Unit: mm

Туре	Packaging Quantity	Tape Width	Reel Diameter	ФА	ФВ	ФС	w	Т
RS-0201			7 inch	178.5±1.5	60+1/-0	13.0±0.2	9.0±0.5	12.5±0.5
RS-0402	Paper	8mm	10 inch	254±1	100±0.5	13.0±0.2	9.5±0.5	13.5±0.5
RS-0603 RS-0805 RS-1206			13 inch	330±1	100±0.5	13.0±0.2	9.5±0.5	13.5±0.5

Paper Tape Specifications



Unit: mm

Туре	Α	В	w	E	F	P ₀	P ₁	P ₂	ΦD_0	Т
RS-0201	0.38±0.05	0.68±0.05	8.0±0.2	1.75±0.1	3.50±0.05	4.00±0.10	2.00±0.05	2.00±0.05	1.50+0.1,-0	0.42±0.1
RS-0402	0.65±0.10	1.15±0.1	8.0±0.2	1.75±0.1	3.50±0.05	4.00±0.10	2.00±0.05	2.00±0.05	1.50+0.1,-0	0.45±0.1
RS-0603	1.10±0.10	1.90±0.1	8.0±0.2	1.75±0.1	3.50±0.05	4.00±0.10	4.00±0.05	2.00±0.05	1.50+0.1,-0	0.70±0.1
RS-0805	1.60±0.10	2.40±0.2	8.0±0.2	1.75±0.1	3.50±0.05	4.00±0.10	4.00±0.05	2.00±0.05	1.50+0.1,-0	0.85±0.1
RS-1206	1.90±0.10	3.50±0.2	8.0±0.2	1.75±0.1	3.50±0.05	4.00±0.10	4.00±0.05	2.00±0.05	1.50+0.1,-0	0.85±0.1



■Marking

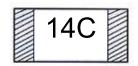
No Marking for 0201 and 0402

1% for 0805/1206: 4 digits marking

Example:

1	Resistance	100Ω	2.2ΚΩ	10ΚΩ	49.9ΚΩ	100ΚΩ
	Marking	1000	2201	1002	4992	1003

1% for 0603: 3 digits marking in E96

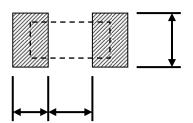


3 digits marking for Example: 14C=13K7 Ω 13C=13K3 Ω 68B=4K99 Ω 68X=49.9 Ω

Marking Table

Marking	Table										
Code	E	96	Code	E	96	Code	E:	96	Code	E96	
01	10	00	25	178		49	316		73	562	
02	10	02	26	18	32	50	32	24	74	576	
03	10	05	27	18	37	51	33	32	75	590	
04	10	07	28	19	91	52	34	40	76	604	
05	1	10	29	19	96	53	34	48	77	619	
06	1	13	30	20	00	54	3!	57	78	634	
07	1	15	31	20	05	55	36	35	79	649	
08	1	18	32	2	10	56	3	74	80	665	
09	12	21	33	2	15	57	38	33	81	681	
10	1:	24	34	22	21	58	39	92	82	698	
11	1:	27	35	226		59	402		83	715	
12	1;	30	36	23	32	60	4	12	84	732	
13	1;	33	37	23	37	61	42	22	85	750	
14	1;	37	38	24	43	62	43	32	86	768	
15	14	40	39	24	49	63		42	87	787	
16	14	43	40	25	55	64	4	53	88	806	
17	14	47	41	26	31	65	46	64	89	825	
18	1	50	42	26	67	66	4	75	90	845	
19	1	54	43	27	74	67	48	37	91	866	
20	1:	58	44	28	30	68	49	99	92	887	
21	10	62	45	28	37	69	69 511		93	909	
22	10	65	46	29	94	70	52	23	94	931	
23	10	69	47	30	01	71	71 536		95	953	
24	1	74	48	30	09	72	54	49	96	976	
Code	Α	В	С	D	E	F	G	Х	Υ		
Multiplier	10 ⁰	10 ¹	10 ²	10 ³	10⁴	10 ⁵	10 ⁶	10 ⁻¹	10 ⁻²		

■Recommend Land Pattern



Unit: mm

Туре	Α	В	С
RS-0201	0.30	0.25	0.30
RS-0402	0.50	0.45	0.60
RS-0603	0.90	0.60	0.90
RS-0805	1.20	0.70	1.30
RS-1206	2.00	0.90	1.60

RS, Professionally Approved Products, gives you professional quality parts across all products categories. Our range has been testified by engineers as giving comparable quality to that of the leading brands without paying a premium price.