

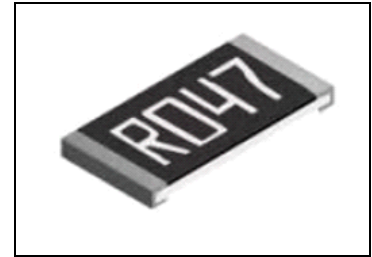


RS Thick Film Chip Shunt Resistor



■Features

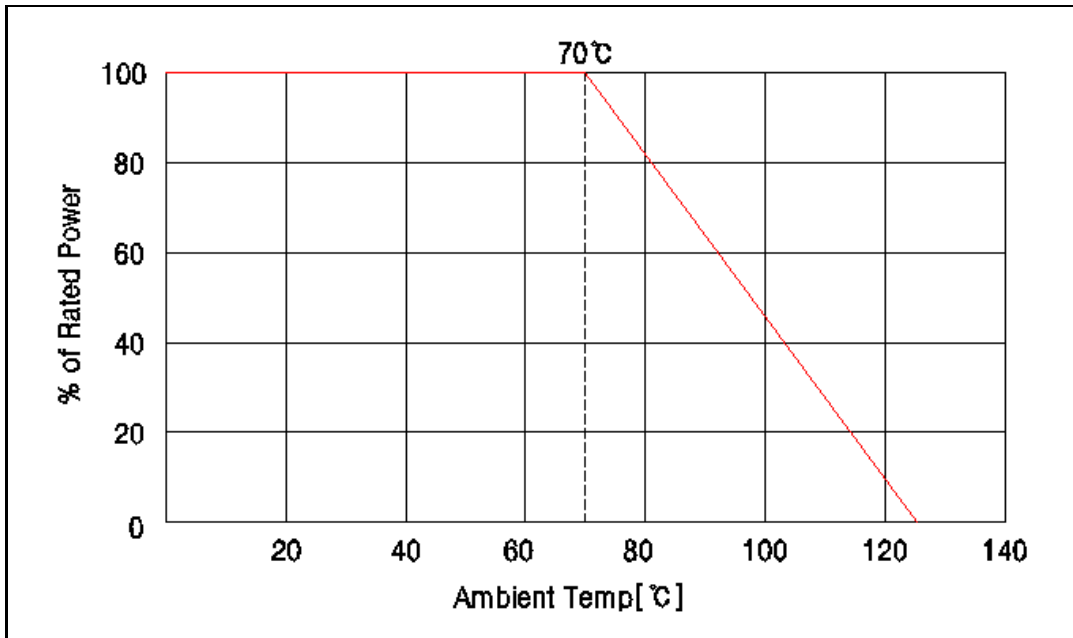
- Low inductance
- Highly reliable multilayer electrode construction
- Higher component and equipment reliability
- Reduced size of final equipment reliability



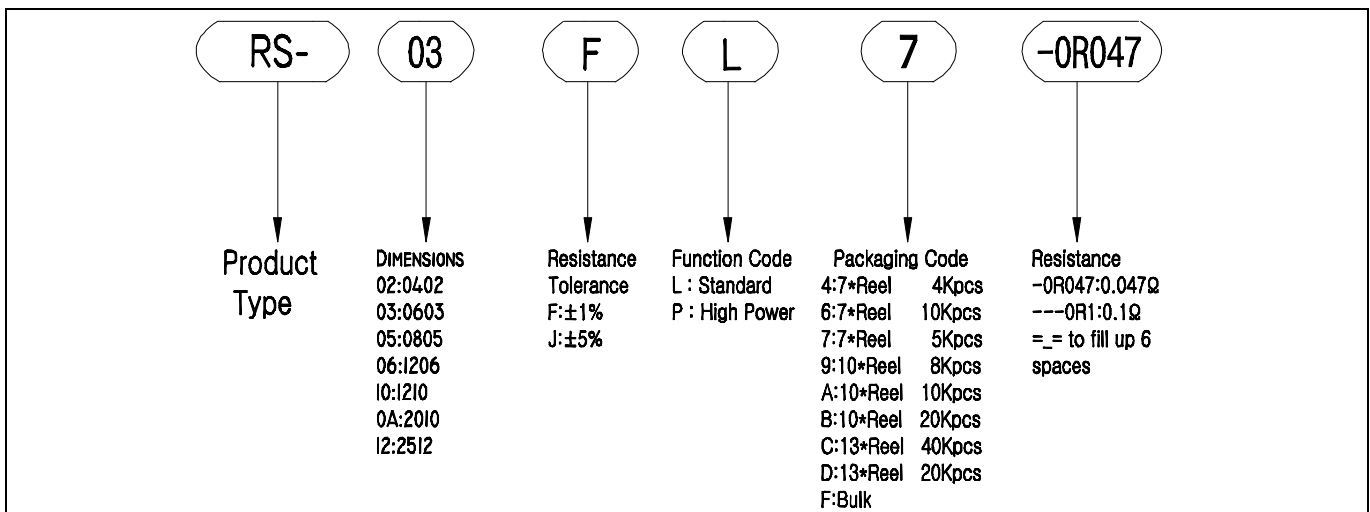
■Applications

- Power Management Applications
- Switching Power Supply, Over Current Protection in Audio Application
- Voltage Regulation Module (VRM)
- DC-DC Converter, Battery Pack, Charger, Adaptor
- Automotive Engine Control
- Disk Driver, Portable Devices (PDA, Cell Phone)

■ DERATING CURVE



■ ORDERING PROCEDURE EXAMPLE



■ GENERAL SPECIFICATIONS

Model	Power Rating at 70	Operating Temp. Range	TCR (PPM/°C)	Resistance Range[mΩ]	
				±1%	±5%
RS-02 (0402)	1/16W	-55~ +155°C	±800	50 - 99	
			±500	100 - 499	
			±200	500 - 976	
RS-03 (0603)	1/10W		±1200	20 - 47	
			±800	50 - 99	
			±500	100 - 499	
RS-05 (0805)	1/8W		±200	500 - 976	
			±1500	10 - 18	
			±1200	20 - 47	
RS-06 (1206)	1/4W		±800	50 - 99	
			±500	100 - 499	
			±200	500 - 976	
RS-10(1210)	1/3W	±1500	10 - 18		
RS-0A(2010)	3/4W	±800	20 - 47		
RS-12 (2512)	1W	±800	50 - 99		
		±200	100 - 499		
		±200	500 - 976		

Operating Voltage= $\sqrt{P \cdot R}$

Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$

■ High Power Rating Electrical Specifications

Model	Power Rating at 70	Operating Temp. Range	TCR (PPM/°C)	Resistance Range[mΩ]	
				±1%	±5%
RS-02 (0402)	1/10W	-55~ +155°C	±800	50 - 99	
			±500	100 - 499	
			±200	500 - 976	
RS-03 (0603)	1/8W		±1200	20 - 47	
			±800	50 - 99	
			±500	100 - 499	
RS-05 (0805)	1/4W		±200	500 - 976	
			±1500	10 - 18	
			±1200	20 - 47	
RS-06 (1206)	1/3W		±800	50 - 99	
			±500	100 - 499	
			±200	500 - 976	
RS-10(1210)	1/2W	±1500	10 - 18		
RS-0A(2010)	1W	±800	20 - 47		
RS-12 (2512)	2W	±800	50 - 99		
		±200	100 - 499		
		±200	500 - 976		

Operating Voltage= $\sqrt{P \cdot R}$

Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$

CHARACTERISTICS

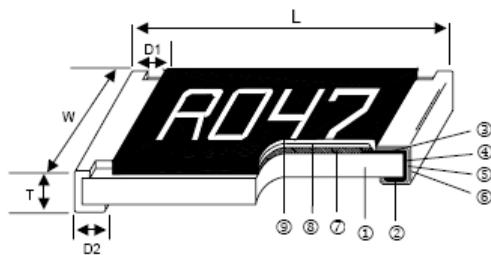
Temperature Coefficient of Resistance (T.C.R)	±1%	±5%	-55℃~+125℃,25℃ is the reference temperature
	As Spec		
Short Time Overload	±[1%+0.05Ω]	±[2%+0.05Ω]	RCWV*2.5 or Max. overload voltage for 5 sec, 2 sec. for high power series
Insulation Resistance	≥10G		Max. overload voltage for 1 minute
Endurance	±[2%+0.1Ω]	±[3%+0.1Ω]	70±2℃,Max. working voltage for 1000hours with 1.5hours "ON" and 0.5hours "OFF"
Damp Heat with Load	±[2%+0.1Ω]	±[3%+0.1Ω]	40±2℃, 90~95% R.H. Max. working voltage for 1000hours With 1.5hours "ON" and 0.5hours "OFF"
Dry Heat	±[1%+0.05Ω]	±[1.5%+0.1Ω]	at +155℃ for 1000 hours
Bending Strength	±[1%+0.05Ω]	±[1%+0.05Ω]	Bending once for 5 seconds 2010,2412 sizes : 2mm Other sizes : 3mm
Solderability	95% min. coverage		245±5℃ for 3 sec.
Resistance to Soldering Heat	±[0.5%+0.05Ω]	±[1%+0.05Ω]	260±5℃ for 30 sec.
Voltage Proof	No breakdown or flashover		1.42 times RCWV (RMS) for 1 minute
Leaching	Individual leaching area ≤ 5% Total leaching area ≤ 10%		260±5℃ for 30 sec.
Rapid Change of Temperature	±[0.5%+0.05Ω]	±[1%+0.05Ω]	-55℃ to +155℃, 5cycles

*Reference Standard : IEC 60115-1, 60068-2-58; JIS-C 5201-1

*Storage Temperature: 25±3℃; Humidity < 80%RH

DIMENSIONS

Unit : mm



Model	SIZE	L	W.	T	D1	D2	Weight(g) (1000pcs)
RS-02	0402	1±0.05	0.5±0.05	0.35±0.05	0.2±0.1	0.2±0.1	0.620
RS-03	0603	1.6±0.1	0.8±0.1	0.45±0.1	0.3±0.2	0.3±0.2	2.042
RS-05	0805	2.0±0.1	1.25±0.1	0.5±0.1	0.35±0.2	0.4±0.2	4.368
RS-06	1206	3.1±0.1	1.55±0.1	0.55±0.1	0.5±0.25	0.5±0.2	8.947
RS-10	1210	3.2±0.2	2.6±0.15				15.959
RS-0A	2010	5.0±0.2	2.5±0.15		24.241		
RS-12	2512	6.35±0.2	3.2±0.15		39.448		

Marking for 0603 (non-E24/E96 series product is with no marking)

Codes	Model
1R0	1.000Ω
R10	0.100Ω
R01	0.010Ω
<u>101</u>	0.101Ω
<u>035</u>	0.035Ω

Recommend Land Pattern

Unit : mm

Type	A	B	C
RS-02	0.5	0.45	0.6
RS-03	0.9	0.6	0.9
RS-05	1.2	0.7	1.3
RS-06	2.0	0.9	1.6
RS-10	2.0	0.9	2.8
RS-0A	3.8	0.9	2.8
RS-12	3.8	1.6	3.5

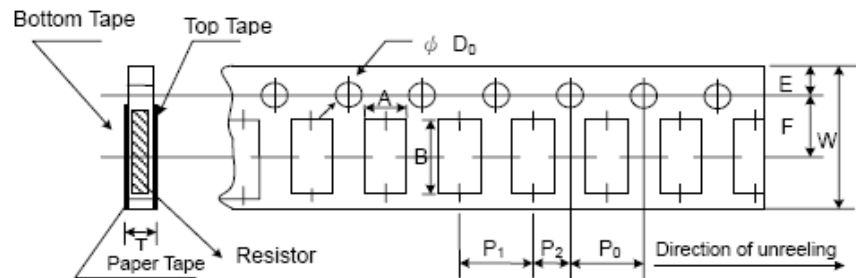
Packaging

Reel Specification & Packaging Quantity

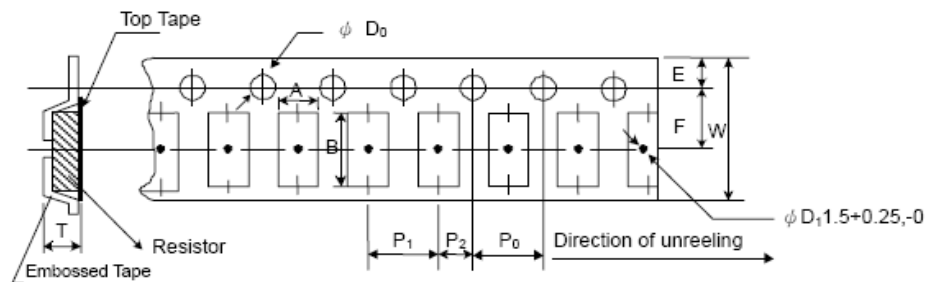
Unit : mm

Model	Packaging Quantity	Tape Width	Reel Diameter	ΦA	ΦB	ΦC	W	T
RS-02	Paper	10K	7 inch	178.5 ±1.5	60 ^{+1/-0}	13 ±0.2	9 ±0.5	12.5 ±0.5
		20K						
		40K						
RS-03	Paper	5K	10 inch	254 ±1.0	100 ±0.5	13 ±0.2	9.5 ±0.5	13.5 ±0.5
		10K						
		20K						
RS-05	Paper	10K	13 inch	330 ±1.0	100 ±0.5	13 ±0.2	9.5 ±0.5	13.5 ±0.5
RS-06								
RS-10								
RS-0A	Embossed	4K	7 inch	178.5 ±1.5	60 ^{+1/-0}	13 ±0.5	13 ±0.5	15.5 ±0.5
RS-12		8K						

Paper Tape Specifications



Embossed Plastic Tape Specifications



Unit : mm

Type	A	B	W	E	F	P ₀	P ₁	P ₂	ΦD ₀	T
RS-02	0.65±0.1	1.15±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.05	2.0±0.05	1.5 +0.1/-0.0	0.45±0.1
RS-03	1.1±0.1	1.9±0.1								0.7±0.1
RS-05	1.6±0.1	2.4±0.2								0.85±0.1
RS-06	1.9±0.1	3.5±0.2								
RS-10	2.8±0.1	3.5±0.2								
RS-0A	2.8±0.2	5.5±0.2	12±0.3	5.5±0.05	1.2 ⁺⁰					
RS-12	3.5±0.2	6.7±0.2	12±0.3							