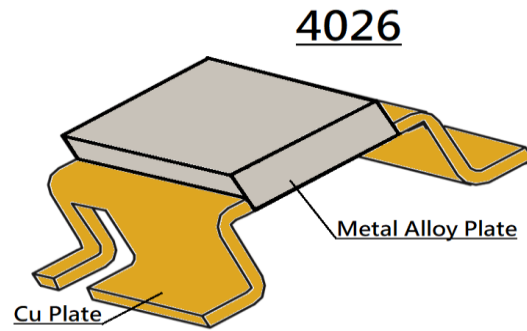
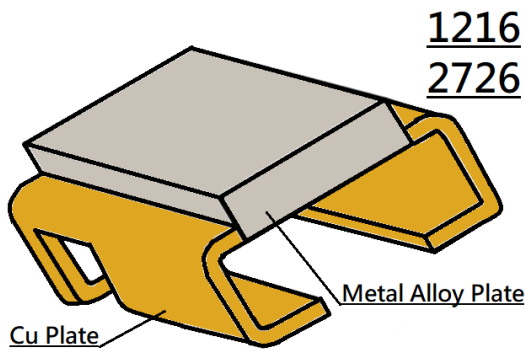




**SRF Series Metal Alloy Shunt Four Terminal Low-Resistance Resistor Product Specifications**

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**■ Metal Alloy Shunt Four Terminal Low-Resistance Chip Resistor— SRF Series**



**■ Application**

- High current Power modules
- High current Power Supply
- Measuring instrument
- Industrial control
- Battery management system

**■ Features**

- Low Resistance / TCR
- Excellent long-term stability
- RoHs compliant and halogen free.
- Lead free.
- High precision current sensing and voltage division.
- Excellent Anti-Surge ability .
- Four terminal construction. (Down size to 1216)

**■ Parts Number Explanation**

**■ Example:**

<b>SRF</b>	<b>2726</b>	<b>30</b>	<b>F</b>	<b>R004</b>	<b>F</b>	<b>Z</b>
<b>Product Type</b>	<b>Size (Inch)</b>	<b>Rated Power</b>	<b>Tolerance</b>	<b>Resistance</b>	<b>Material</b>	<b>Optional</b>
	1216 2726 4026	30=3.00W 40=4.00W 50=5.00W 60=6.00W 70=7.00W	F : ±1% G : ±2% J : ±5%	0m50=0.5mR R001=1.0mR R005=5mR	S : MnCuSn M : MnCu F : FeCrAl	



**SRF Series Metal Alloy Shunt Four  
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■ **Standard Electrical Specifications**

Type	Power Rating at 70°C	T.C.R. (ppm/°C)	Max. Rating Current(A)	Max. Overload Current(A)	Resistance Range (mΩ)	Material	Operating Temperature Range (°C)
					1.0% (F) 2.0% (G) 5.0% (J)		
SRF1216	5W	≤ ±50	100.00	223.60	0.5	MnCuSn	- 55 ~ + 170
	3W	≤ ±50	54.77	122.47	1	MnCu	
SRF2726	7W	≤ ±50	118.31	264.58	0.5	MnCuSn	
	6W	≤ ±50	77.46	173.21	1	MnCu	
	6W	≤ ±50	54.77	122.47	2	FeCrAl	
	4W	≤ ±50	36.51	81.64	3	FeCrAl	
	3W	≤ ±50	27.39	61.24	4	FeCrAl	
	3W	≤ ±50	24.49	54.77	5	FeCrAl	
SRF4026	7W	≤ ±50	187.08	418.33	0.2	MnCuSn	
	7W	≤ ±50	118.32	264.58	0.5	MnCuSn	
	6W	≤ ±50	77.46	173.21	1	MnCu	
	4W	≤ ±50	36.51	81.64	3	FeCrAl	

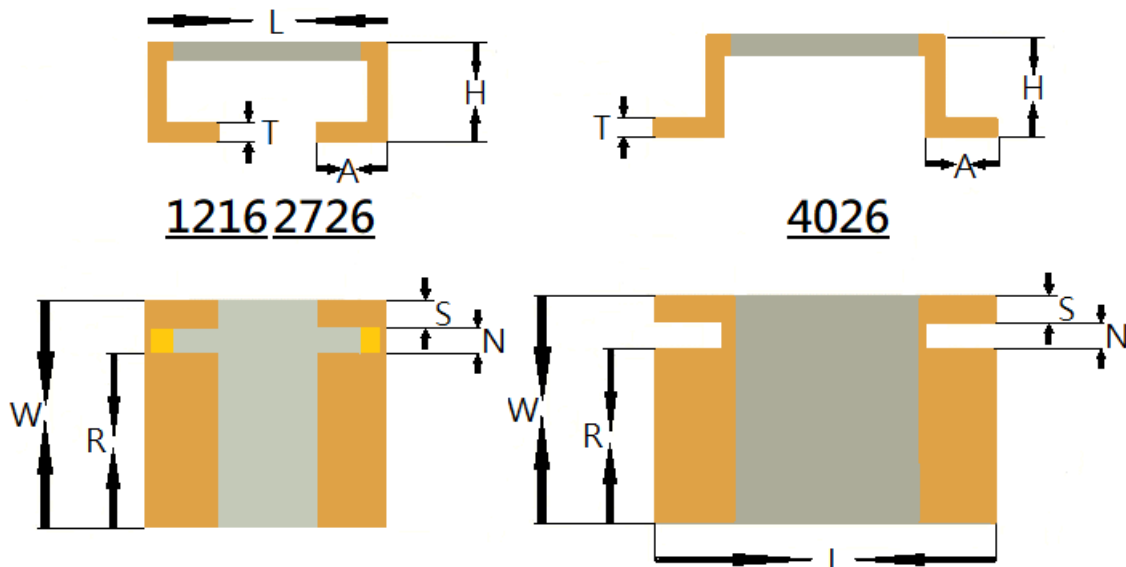
- For non-standard parts, please contact our sales dept.
- Power rating is guaranteed when terminal temperature of resistor is below 70°C



**SRF Series Metal Alloy Shunt Four Terminal Low-Resistance Resistor Product Specifications**

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■ Type Dimension



■ Dimension

Unit : mm

TYPE	Resistance	L	W	H	T	A	S	N	R
SRF1216	0.5mR	3.0±0.30	3.81±0.30	1.80(Ref)	0.30±0.20	1.3±0.30	0.50(Ref.)	0.60(Ref.)	2.7(Ref.)
	1mR	3.0±0.30	3.81±0.30	1.80(Ref)	0.30±0.20	1.3±0.30	0.50(Ref.)	0.60(Ref.)	2.7(Ref.)
SRF2726	0.5mR	6.9±0.30	6.6±0.30	2.85(Ref)	0.45±0.20	1.9±0.30	0.70(Ref.)	1.0(Ref.)	5.0(Ref.)
	1mR			2.85(Ref)	0.37±0.20				5.0(Ref.)
	2mR			2.85(Ref)	0.55±0.20				5.0(Ref.)
	3mR			2.85(Ref)	0.37±0.20				5.0(Ref.)
	4mR			2.85(Ref)	0.37±0.20				5.0(Ref.)
	5mR			2.85(Ref)	0.37±0.20				5.0(Ref.)
SRF4026	0.2mR	10.1±0.30	6.6±0.30	2.85(Ref)	0.40±0.20	1.9±0.30	0.70(Ref.)	1.0(Ref.)	5.0(Ref.)
	0.5mR			2.85(Ref)	0.45±0.20				
	1mR			2.85(Ref)	0.37±0.20				
	3mR			2.85(Ref)	0.37±0.20				



# SRF Series Metal Alloy Shunt Four Terminal Low-Resistance Resistor Product Specifications

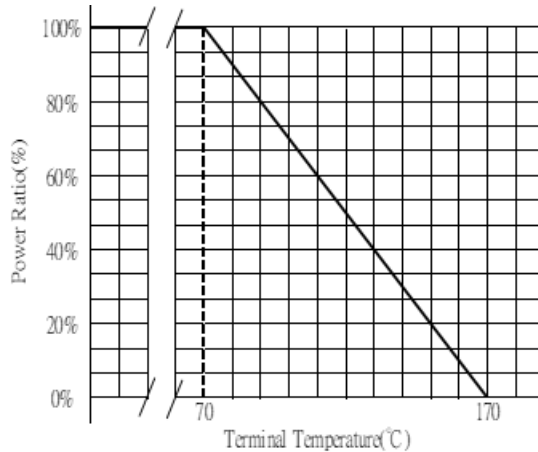
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## ■ Performance Characteristics

### Power Derating Curve

The Operating Temperature Range:  $-55^{\circ}\text{C} \sim +170^{\circ}\text{C}$ .

Terminal temperatures above  $70^{\circ}\text{C}$ , power rating must be derated in accordance with the curve as below :



## ■ Rating Current

The following equation may be used to determine the DC (Direct Current) or AC (Alternating Current) (RMS, root mean square value) of normal rated power. However, if the result value exceeds the highest current of regulated standards, the highest normal rated power is to be used

$$I = \sqrt{P/R}$$

I = Rating current (A)  
P= Rating Power (W)  
R= Resistance( $\Omega$ )

## ■ Marking Format:

- All the products marking are 3 digits.
- "L" designates the decimal location in milliohm  
e.g.  $3\text{m}\Omega$  the product marking is 3L0.  
 $0.3\text{m}\Omega$  the product marking is L30.
- The criteria to distinguishing the mark on the surface of products are that characters can be identified.



# SRF Series Metal Alloy Shunt Four Terminal Low-Resistance Resistor Product Specifications

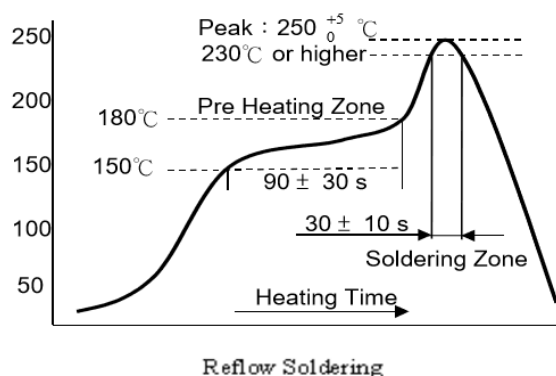
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## Reliability Test and Requirement

Test Item	Test Method	Procedure	Requirements
Temperature Coefficient of Resistance (T.C.R)	JIS C 5201-1 clause 4.8	$\text{T.C.R. (ppm/}^\circ\text{C)} = \frac{(R2-R1)}{R1 (T2-T1)} \times 10^6$ R1: resistance at room temperature (T1) R2: resistance at 125°C (T2)	Refer to Electrical Specifications
Short Time Overload	JIS C 5201-1 clause 4.13	The number of rated power are as follows: <ul style="list-style-type: none"> <li>SRF1216: 5 times of rated power</li> <li>SRF2726: 5 times of rated power</li> <li>SRF4026: 5 times of rated power</li> </ul> Loading duration: 5secs	$\Delta R/R1 \leq \pm(1.0\%+0.0005\Omega)$
High Temperature Exposure	JIS C 5201-1 clause 4.23.2	1,000hrs at + 125 °C	$\Delta R/R1 \leq \pm(1.0\%+0.0005\Omega)$
Load at Rated Power	JIS C 5201-1 clause 4.25	1,000hrs@ rated power ,70 °C, 1.5hrs "ON", 0.5hrs "OFF"	$\Delta R/R1 \leq \pm(1.0\%+0.0005\Omega)$
Moisture Resistance	MIL-STD-202, Method 106	Humidity of 90~98% percent and a temperature of 25°C / 65°C ,10 cycles	$\Delta R/R1 \leq \pm(1.0\%+0.0005\Omega)$
Temperature Cycling	JIS C 5201-1 clause 4.19	Unpowered,-55°C (30min)/+125°C (30min),5cycle	$\Delta R/R1 \leq \pm(1.0\%+0.0005\Omega)$
Bending Strength	JIS C 5201-1 clause 4.33	Bending amplitude 2mm for 10 sec, test board size:FR4 90mm(L)*40mm(W)	$\Delta R/R1 \leq \pm(1.0\%+0.0005\Omega)$
Solderability	JIS C 5201-1 clause 4.17	245±5°C for 2±0.5secs	>95% coverage(electrode area)

- Note: All Reliability test should follow De-rating curve , terminal temperature of component should be below 70°C.
- Note : Footprint size, solder insufficient, excessive solder, solder void and component shifted will affect the resistance accuracy after IR reflow. Circuit calibration is a must to be done by functional test.

## Soldering Profile

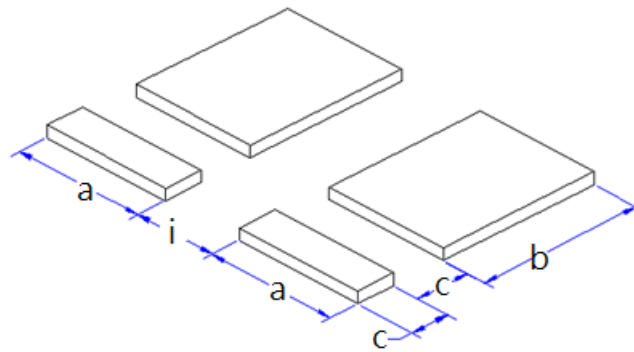




**SRF Series Metal Alloy Shunt Four Terminal Low-Resistance Resistor Product Specifications**

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■ Recommend Land Pattern Design



■ Dimension

Unit: mm

TYPE	Resistance Range	a	b	c	i
SRF1216	0.5mR-1mR	1.5	2.95	0.6	0.6
SRF2726	0.5mR-5mR	2.9	5.6	1	2
SRF4026	0.2mR-3mR	2.44	5.6	0.9	5.8

■ Packing Quantity

TYPE	PCS /Reel
SRF1216	3,000
SRF2726	1,400
SRF4026	1,400

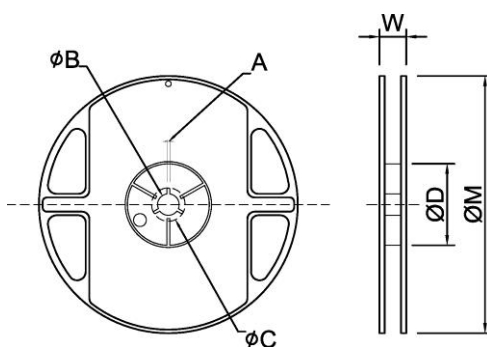
■ Storage Temperature

Temperature : 25±5°C, Humidity : 60±20%

## Appendix For SMD Chip Resistor

### ● Packaging Information

#### ■ Reel Dimensions

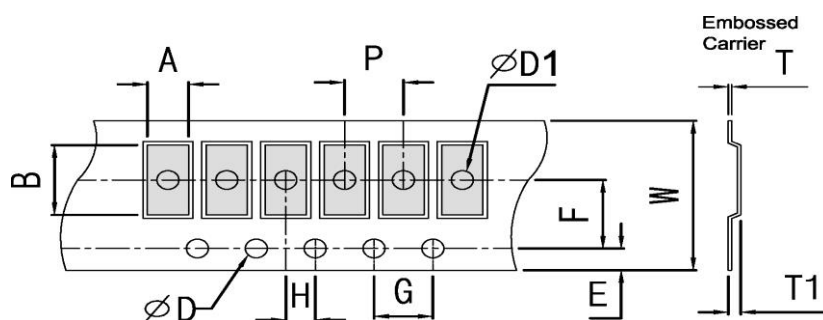


#### ■ Dimension

Unit: mm

Reel Type / Tape	A	φB	φC	φD	W	φM
13" reel for 12 mm embossed	2.3±0.5	13.5±0.5	17.7±0.5	99.0±0.5	16.7±0.5	330±1.0
13" reel for 16 mm embossed	2.3±0.5	13.5±0.5	17.7±0.5	99.0±0.5	20.7±0.5	330±1.0
13" reel for 24 mm embossed	2.5±0.5	13.5±0.5	17.7±0.5	99.0±0.5	29.4±0.5	330±1.0

#### ■ Embossed Dimensions



#### ■ Dimension

Unit: mm

Item	Resistance (Ω)	W	P	E	F	φD	G	H	A	B	T1
SRF1216	0.5m~1m	12.0±0.30	8.0±0.10	1.75±0.10	5.5±0.10	1.50 <sup>+0.1</sup> <sub>-0</sub>	4.0±0.10	2.0±0.10	3.3±0.10	4.3±0.10	2.3±0.10
SRF2726	0.5m~5m	16.0±0.30	12.0±0.10	1.75±0.10	7.5±0.10	1.50 <sup>+0.1</sup> <sub>-0</sub>	4.0±0.10	2.0±0.10	7.0±0.10	7.0±0.10	3.1±0.10
SRF4026	0.2m~1m	24.0±0.30	12.0±0.10	1.75±0.10	11.5±0.10	1.50 <sup>+0.1</sup> <sub>-0</sub>	4.0±0.10	2.0±0.10	6.9±0.10	10.4±0.10	3.2±0.10