



## Wirewound Resistors, Open Style, Current Shunts, Custom Tailored, Very Low Value, High Precision



### FEATURES

- Custom-made four-terminal resistors to meet your individual specifications
- Extremely low resistance values for current sensing applications
- Precision resistance tolerance
- Low temperature coefficients
- Complete welded construction
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



HALOGEN FREE

The mechanical configurations and electrical properties of our shunts are made to your specifications. The following are examples of “Typical Electrical Specifications” from several existing custom designs. Consult our engineering department for help in designing your own configuration and/or electrical properties, see email address at the bottom of this page.

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE $\Omega$	TOLERANCE $\pm \%$	CURRENT RATING (maximum) A
SPU104	SPU-104	1.875	0.0025 to 0.010	1	25
SPU111...1	SPU-111-1	1	0.005	1	10
SPU114	SPU-114	1	0.00167 to 0.020	1	10

### Note

- Resistance tolerances available are 0.1 %, 0.25 %, 0.5 %, 1.0 %, 3.0 %, and 5.0 % depending on resistor physical design and resistance value

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	SPU OPEN STYLE RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	Typical is $\pm 100$ (- 10 °C to + 80 °C) consult factory for tighter TCR availability
Resistance Range	$\Omega$	Dependent upon configuration, consult factory
Maximum Current Rating	A	Dependent upon configuration, consult factory
Operating Temperature Range	°C	- 55 to + 275

### GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: SPU1115L0000FD1

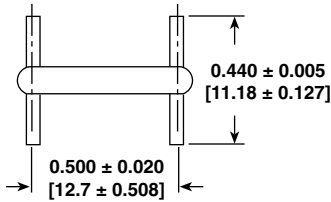
S	P	U	1	1	1	5	L	0	0	0	0	F	D	1	
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GLOBAL MODEL <b>SPU111</b>	RESISTANCE VALUE L = m $\Omega$ (below 0.01 $\Omega$ ) R = Decimal <b>5L0000</b> = 0.005 $\Omega$ <b>R10000</b> = 0.10 $\Omega$	TOLERANCE CODE B = $\pm 0.1 \%$ C = $\pm 0.25 \%$ D = $\pm 0.5 \%$ F = $\pm 1.0 \%$ H = $\pm 3.0 \%$ J = $\pm 5.0 \%$	PACKAGING E = Lead (Pb)-free, bulk D = Tin/lead, bulk	SPECIAL (Dash Number) (up to 2 digits) From <b>1 to 99</b> as applicable
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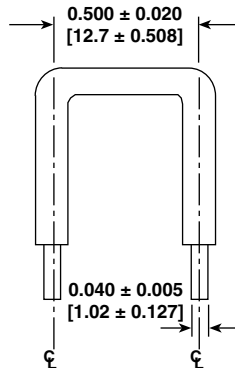
Historical Part Numbering example: SPU-111-1 0.005  $\Omega$  1 % S51

SPU-111-1	0.005 $\Omega$	1 %	S51
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

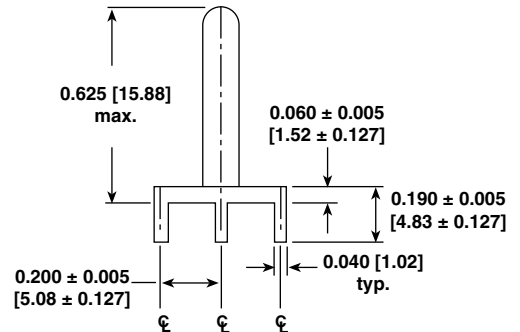
**DIMENSIONS** in inches [millimeters]  
**SPU104** Top View



Side View

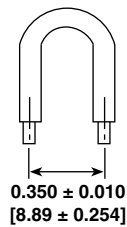


End View

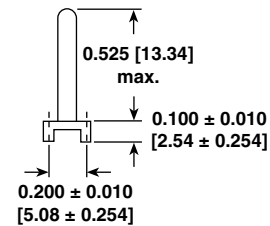


**SPU111...1**

Side View

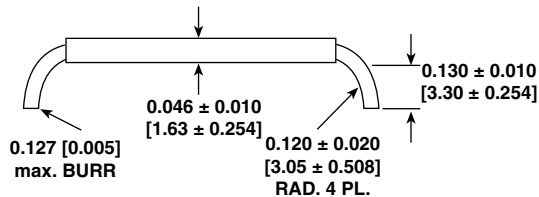


End View

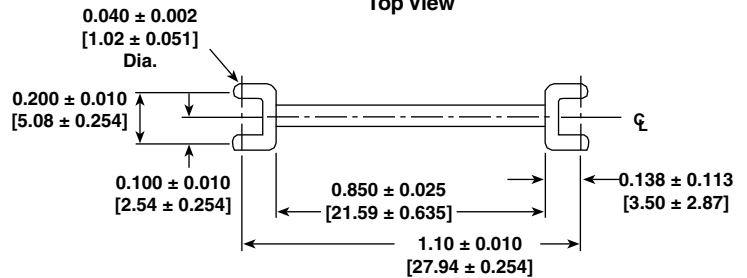


**SPU114**

Side View



Top View



**MATERIAL SPECIFICATIONS**

**Element:** Copper-nickel alloy or nickel-chrome alloy, depending on resistor type and/or resistance value

**Coating:** None

**Standard Terminals:** SPU104: 100 % Sn, w/Nickel underplate, or 60/40 Sn/Pb coated copper

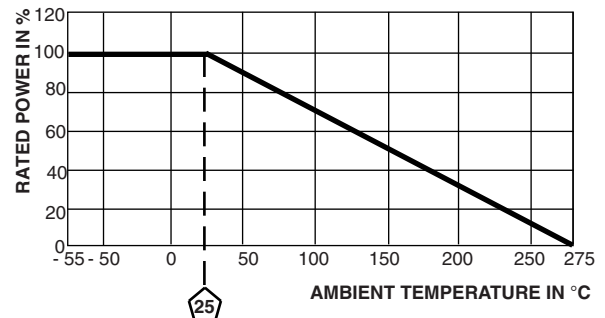
**Other Models:** 100 % Sn, w/Nickel underplate, or 60/40 Sn/Pb coated Copperweld®

**Part Marking:** None

**AMBIENT TEMPERATURE DERATING**

Derating is required for ambient temperatures above 25 °C per the following graph:

**DERATING**





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