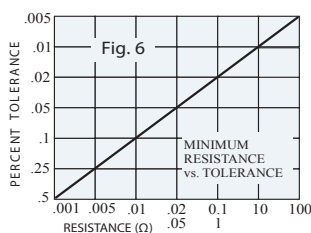


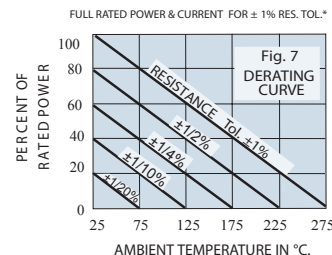
# SM-4 - 4 WIRE LOW VALUE



## TYPE SM-4 FOUR TERMINAL SERIES AT A GLANCE:

Shunt Values ..... from 0.015Ω (at full power)  
 Lower Shunt Values ..... to 0.001Ω (derated watts)  
 Tolerances ..... to ±0.005%  
 TCR Characteristic ..... to 0±15ppm/°C  
 Stability ..... to ±0.005%/year

**\*BOTH MAX POWER & MAX CURRENT PUBLISHED MUST BE DE-RATED FOR TOLERANCES CLOSER THAN ± 1%**



±0.02%, 0.01%, 0.005% = 10% Published to +50°C Maximum Power

## ELECTRICAL & PHYSICAL SPECIFICATIONS

PRC Type	Precise low-value repeatability. Eliminates lead-out and contact resistance. "Single joint" design makes lead identification academic.										FOUR (4) TERMINAL	
	Max. Rating Watts	Body Dimensions ± 0.787mm (.031")				Std. Lead Space ±0.50"	1.4"L* Lead Diam. ±.001"	Standard		Special*		
		Length		Diameter				Min. Resistance @ Max. Watts		Min. Resistance* @ Derated Power		
	Amps	mm	(ins.)	mm	(ins.)	Ω	W	Ω	W			
SM155-4	1.25 W 10A	13.21	(.520")	5.08	(.200")	.150"	.0285"	.015 @ 1.25W	.001 @ .1W			
SM186-4	2.5 W 10A	16.5	(.650")	6.35	(.250")	.150"	.0285"	.025 @ 2.5W	.001 @ .1W			
SM228-4	3W 10A	19.69	(.775")	7.11	(.280")	.150"	.0285"	.03 @ 3W	.001 @ .1W			
SM2212-4	4W 12A	26.04	(1.025")	7.11	(.280")	.150"	.0285"	.028 @ 4W	.001 @ .14W			
SM2812-4	5W 15A	26.04	(1.025")	8.71	(.375")	.180"	.032"	.02 @ 5W	.001 @ .22W			
SM3724-4	7.5 W 15A	45.72	(1.800")	11.10	(.437")	.243"	.032"	.03 @ 7.5W	.001 @ .22W			

\* Heavier current carrying capacity leads are available for low resistance - full power applications. Refer to Type PLV for custom millivolt drop requirements.

## ENGINEERING DATA:

### 1. RESISTANCE AND TOLERANCE

Standard: Any ohmic value or decimal part of an ohm desired from 0.015Ω to 100Ω with tolerances to ±0.005%.

Special: From 0.001Ω through 0.015Ω with tolerances to ±0.1%. Please see Fig. 6 Resistance Vs. Tolerance ratios above.

### 2. TCR CHARACTERISTICS

Standard: 0±15 ppm/°C. over a limited temp. span  
 Special: 0±10 ppm/°C. must specify temp. span

### 3. STABILITY VS. TIME CHARACTERISTICS

To ±0.001% per year at +25°C. with no load.

### 4. SOLVENT RESISTANCE COATING

... with indelible marking.

### 5. POWER & CURRENT RATING

The Standard Minimum Resistance at full power (see above column) is based upon ±1% resistance tolerance at +25°C.

Derating is required for lower res. values, closer tolerances and higher temperatures. Please refer to Fig. # 7 at top of the page.

### 6. TWO-TERMINAL VS. FOUR-TERMINAL (Kelvin)

Two-terminal resistors are generally used for high ohmic values, where the effects of lead-out resistance and contact resistance are minimal. Allow approximately ±0.001 ohm per inch for the lead-out resistance on 2-Wire designs. However, on low values where lead resistance can be part of a very accurate measurement, the adder may be

eliminated by using a 4-terminal device, because 4-Wire circuits will only indicate the voltage drop across the resistor.

### 7. FOUR TERMINALS

PRC's type SM-4 has four solderable hot-tinned copper wire leads. Lead identification is academic because of its single-joint construction. However for uniformity, while observing the PRC marking on the body of the resistor, select the 2 leads closest to the top for your sense leads and the other two as the current leads.



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