

## SOT23 Thin Film Precision Voltage Divider Network

### Features

- Wide resistance range (10 to 1M $\Omega$ )
- Tolerance  $\pm 0.1\%$ , ratios  $\pm 0.05\%$
- Low temperature coefficient  $\pm 25\text{ppm}/^\circ\text{C}$
- Low tracking temperature coefficient of resistance  $\pm 5\text{ppm}/^\circ\text{C}$
- Long term stability, 0.05% after 1000 hours
- Also available in custom values and configuration

### Applications

- Precision voltage dividers
- OP AMP gain control
- Attenuation
- Pull-up/pull-down
- TTL/MOS interfacing

### Product Description

California Micro Devices' PRN105 precision voltage divider resistor array offers a high degree of stability, low noise and the proven reliability characteristics of Tantalum Nitride. These devices are manufactured using

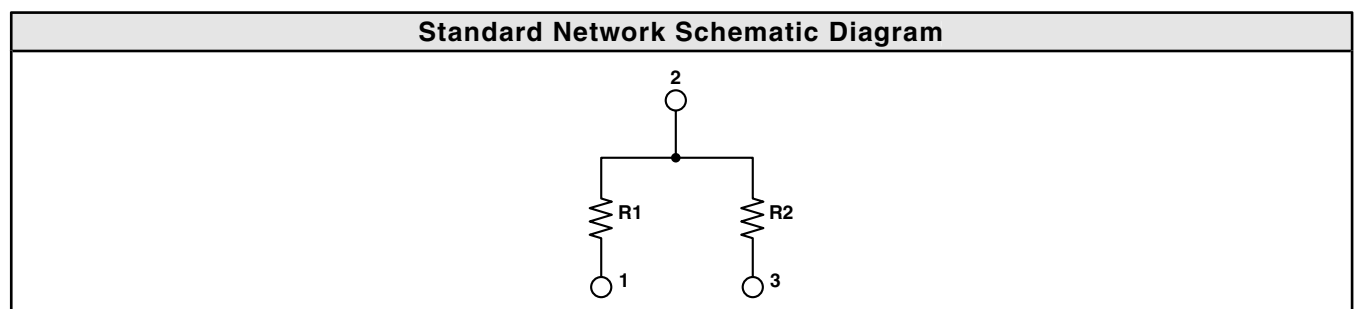
advanced Thin Film Technology. A wide range of resistor values is available, as well as various tolerances and TCRs.

Electrical	
Standard Resistance Range (R1 + R2)	10 to 1M $\Omega$
Operating Temperature Range	$-55^\circ\text{C}$ to $150^\circ\text{C}$
VCR	5ppm/V
Maximum Power Rating for Each Resistor	125mW
Minimum Insulation Resistance	100M $\Omega$
Noise, MAX (MIL-STD-202, Method 308)	-25dB
Minimum Operating Voltage	100V or $\sqrt{P \times R}$

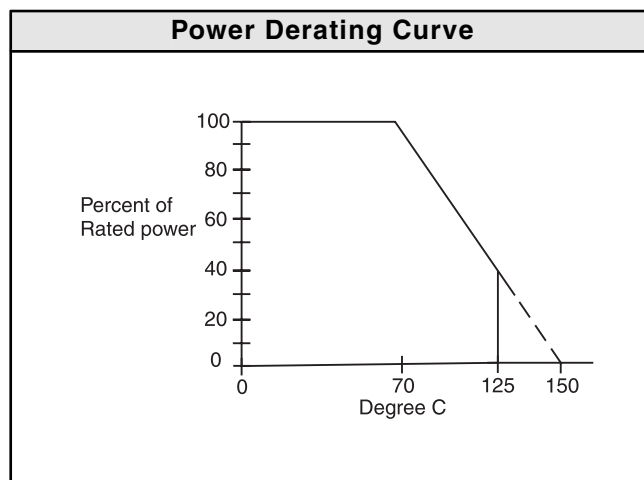
Mechanical	
Lead Plating	Tin-Lead
Lead Material	Copper Alloy
Lead Coplanarity	0.004" (0.102mm)
Substrate Material	Silicon
Resistor Material	Tantalum Nitride
Body Material	Molded Epoxy
Flammability	UL94V-0

Power Dissipation
0.25W @ $70^\circ\text{C}$

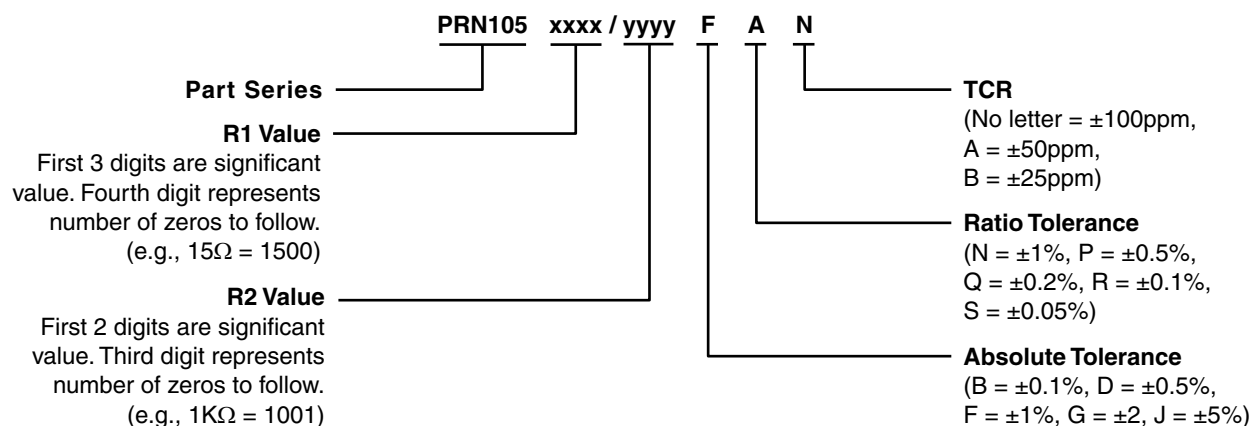
Tolerances	
Absolute Resistance @ $25^\circ\text{C}$ , %	$\pm 0.1$ , $\pm 0.2$ , $\pm 0.5$ , $\pm 1$ , $\pm 2$ , $\pm 5$
Ratio, %	$\pm 0.05$ , $\pm 0.1$ , $\pm 0.2$ , $\pm 0.5$ , $\pm 1$
Temperature Coefficient of Resistance, ppm/ $^\circ\text{C}$	$\pm 25$ , $\pm 50$ , $\pm 100$ ,
Typical Tracking (TCR), ppm/ $^\circ\text{C}$	$\pm 5$ , $\pm 10$



Performance Data (DELTA R%)			
Test per MIL-R-83401	CHAR H LIMITS	MAX	TYP
Thermal Shock	0.25	0.1	0.02
Power Conditioning	0.5	0.1	0.03
Low Temperature Operating	0.1	0.1	0.03
Short Time Overload	0.1	0.1	0.02
Terminal Strength	0.25	0.1	0.02
Resistance to Soldering Heat	0.1	0.1	0.02
Moisture Resistance	0.4	0.1	0.03
Shock	0.25	0.1	0.02
Vibration	0.25	0.1	0.02
Life	0.5	0.1	0.05
High Temperature Exposure	0.2	0.1	0.05
Low Temperature Storage	0.1	0.05	0.03
25°C Power Rating	0.5	0.1	0.05



### Part Numbering Key



Standard Part Ordering Information				
Part Type	Package		Ordering Part Number	Part Marking
	Pin	Style	Tape & Reel	
PRN105	3	SOT23	PRN105 xxxx/yyyy F A N/R*	TBD

\*Please refer to the Part Numbering Key.