



Thin Film Differential Terminator Resistor Network

Features

- Thin film on silicon
- Tolerance $\pm 2\%$
- Wide body surface mount SOIC and DIP configuration
- Drop-in replacement to thick film networks
- Also available in custom schematic and configuration

Applications

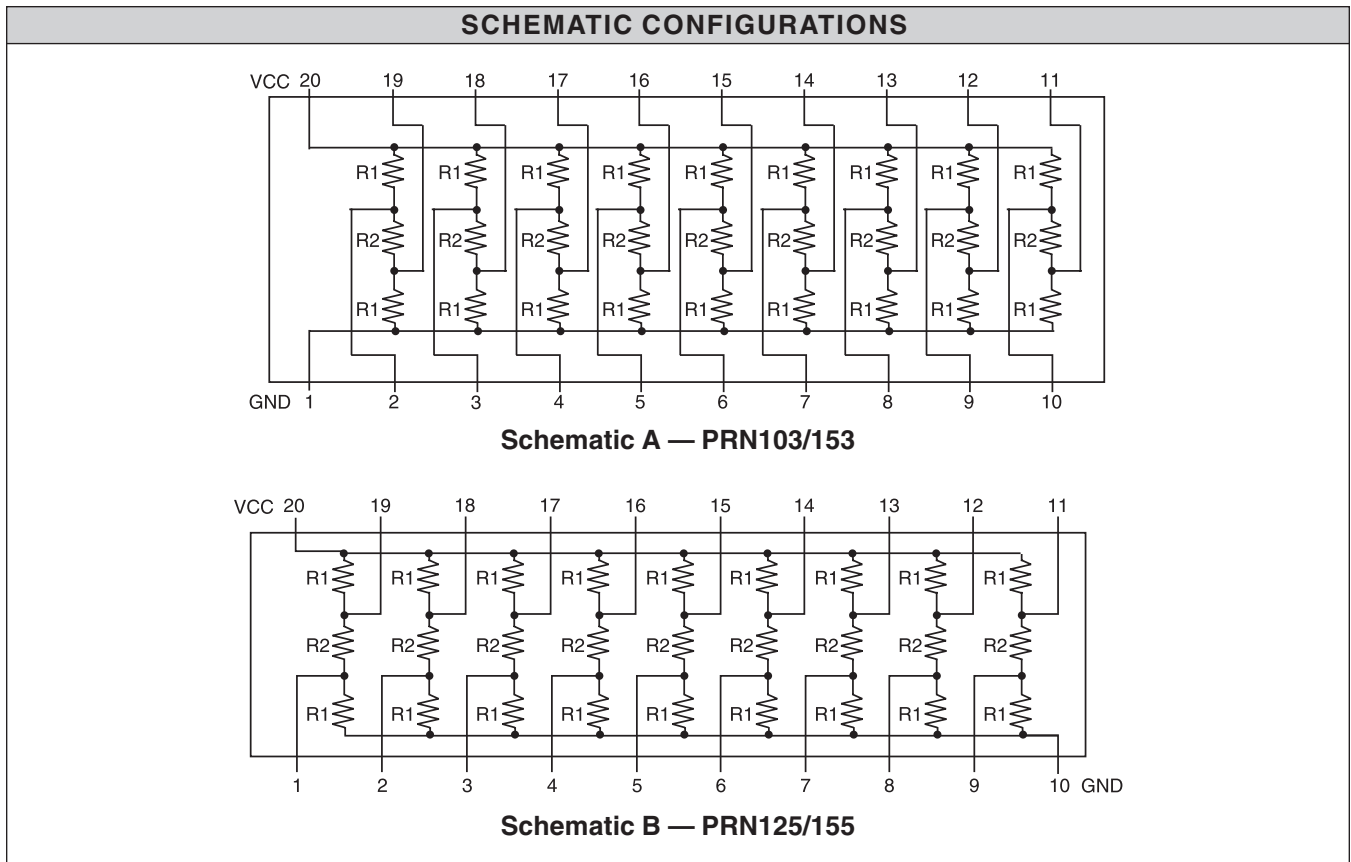
- Differential SCSI Termination
- SCSI Host Adapter Cards and Other SCSI Devices

Product Description

The PRN103/153/125/155 is a high performance Integrated Passive Device (IPD) designed to eliminate transmission line effects on high-speed data lines on a special bus called SCSI (Small Computer Systems Interface). SCSI is a bus interface covered by an ANSI standard that allows for an input/output bus to connect small computers with a variety of peripheral devices.

Proper resistor termination requires a resistor whose value closely matches the characteristic impedance of the transmission line. Thin film networks offer significant

advantages over conventional thick film processes in terms of tighter absolute and ratio tolerances, greater stability, lower noise, and Temperature Coefficient of Resistance (TCR). Furthermore, they offer superior high frequency performance with minimal parasitic inductance and capacitance. Integrated thin film networks also offer the benefits of board space savings, reduced assembly costs, and increased reliability with fewer components.

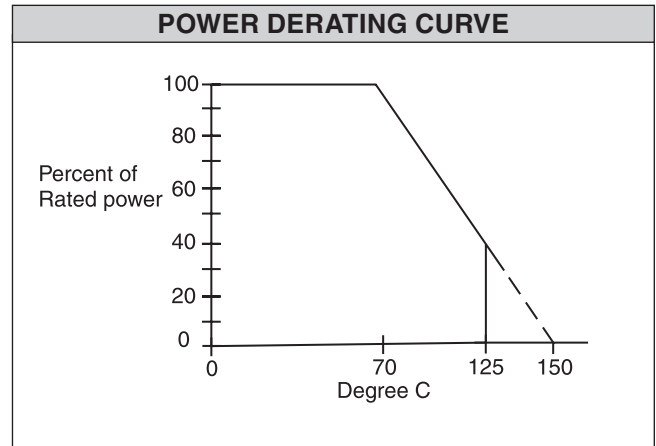




| ELECTRICAL | |
|---------------------------------------|--|
| Resistance Range | $R_1 = 170$ to 660Ω |
| Resistance Range | $R_2 = 80$ to 300Ω |
| Operating Temperature Range | -55°C to 150°C |
| VCR | 5ppm/V |
| Max. Power Rating For Each Resistor | 100mW |
| Min. Insulation Resistance | 10,000M Ω |
| Noise, Max. (MIL-STD-202, Method 308) | -25dB |

| TOLERANCES | |
|--|-------------------|
| Absolute Resistance Tolerance, at 25°C (%) | $\pm 1.0 \pm 2.0$ |
| Temperature Coefficient of Resistance, ppm/ $^\circ\text{C}$ | ± 100 |
| Typical Tracking TCR, ppm/ $^\circ\text{C}$ | ± 10 |

| 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 |



| PERFORMANCE DATA (DELTA R%) | | | |
|------------------------------|---------------|----------|----------|
| Test per Mil-R-83401 | Char H Limits | CAMD Max | CAMD Typ |
| Thermal Shock | .25 | .1 | .02 |
| Power Conditioning | .5 | .1 | .03 |
| Low Temperature Operating | .1 | .1 | .03 |
| Short Time Overload | .1 | .1 | .02 |
| Terminal Strength | .25 | .1 | .02 |
| Resistance to Soldering Hear | .1 | .1 | .02 |
| Moisture Resistance | .4 | .1 | .03 |
| Shock | .25 | .1 | .02 |
| Vibration | .25 | .1 | .02 |
| Life | .5 | .1 | .05 |
| High Temperature Exposure | .2 | .1 | .05 |
| Low Temperature Storage | .1 | .05 | .03 |
| 25°C Power Rating | .5 | .1 | .05 |



| STANDARD VALUES | | |
|-----------------|----------------|---------|
| R1(Ω) | R2(Ω) | R Code |
| 330 | 150 | 331/151 |

| STANDARD PART ORDERING INFORMATION | | | | | |
|------------------------------------|-----------|---------|-------|----------------------|------------------|
| Part Type | Schematic | Package | | Ordering Part Number | |
| | | Pins | Style | Tape & Reel | Part Marking |
| PRN103 | A | 20 | SOIC | PRN10320331/151G | PRN10320331/151G |
| PRN125 | B | 20 | SOIC | PRN12520331/151G | PRN12520331/151G |
| PRN153 | A | 20 | DIP | PRN15320331/151G | PRN15320331/151G |
| PRN155 | B | 20 | DIP | PRN15520331/151G | PRN15520331/151G |

| NON-STANDARD PART ORDERING INFORMATION | | | | |
|--|-------------|---|--------------|--------------------------------|
| Part Series | Pin Count | Value Code | | Tolerance |
| | | R1 (XXX) | R2 (XXX) | |
| <i>Example (PRN103)</i> | <i>(20)</i> | <i>(331)</i> | <i>(151)</i> | <i>(G)</i> |
| PRN103-SOIC | 20 | First 2 digits are significant value. Third digit represents number of zeros to follow. | | F = $\pm 1\%$ G = $\pm 2\%$ |
| PRN153-DIP | 20 | | | |
| PRN125-SOIC | 20 | | | |
| PRN155-DIP | 20 | | | |